

FRONT PAGE

GRAS NOTICE OF

CANOLA PROTEIN (RAPESEED PROTEIN)

FOR USE AS AN INGREDIENT IN HUMAN FOOD

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1. Signed statements and certification

1.1. GRAS Notice submission

NapiFeryn BioTech Sp. z o. o. is hereby submitting a Generally Recognized As Safe (GRAS) Notice in accordance with 21 CFR part 170, subpart E.

1.2. Name and address of Notifier

NOTIFIER

Name: NapiFeryn BioTech Sp. z o. o.
Address: ul. Dubois 114/116
Postal code and city: 93-465 Łódź
Country: Poland
Tel. no: +48 503 542 475
E-mail: regulatory@napiferyn.pl

NOTIFIER'S AGENT

Name: Pen & Tec Consulting S.L.U.
Address: Pl. Ausias March 1, 4th floor D01
Postal code and city: 08195 Sant Cugat del Vallès (Barcelona)
Country: Spain
Tel. no: +34 936 75 80 15

1.3. Name of the notified substance

The ingredient determined by NapiFeryn BioTech Sp. z o. o. (hereinafter 'NapiFeryn') to be GRAS is canola protein (rapeseed protein). The trade name of the notified canola protein is RapteinTM90.

1.4. Intended conditions of use

NapiFeryn intends to use its canola protein (containing $\geq 90\%$ protein) as a food ingredient (protein source), formulation aid [21 CFR 170.3(o)(14)], nutrient supplement [21 CFR

170.3(o)(20)], stabilizer and thickener [21 CFR 170.3(o)(28)] and texturizer [21 CFR 170.3(o)(32)] in a variety of foods and beverages at use levels ranging from 5% to 100%. Canola protein is intended to be used in bakery products, breakfast cereals, grain products, pastas, bars, protein and nutritional powders, beverages and beverage bases non-alcoholic, milk products and dairy analogs, coffee and tea, meat product analogs, fat, oils and salad dressings, egg substitutes, soup and soup mixes, sauces, gravies, condiments and dips, nut products, snack foods, fruit and water ices, confections, candies and frostings, sweet sauces, toppings, and syrups, jams, jellies, gelatins, puddings, fillings, processed fruits, vegetables, legumes, batter/breadings, spice and seasoning mixes. Any meat and poultry products that come under the U.S. Department of Agriculture's jurisdiction are not in the scope of this GRAS Notice. For use levels of canola protein, see Section 3.1 - Table 9 of this dossier.

1.5. Statutory basis for GRAS status

NapiFeryn has concluded that its canola protein (rapeseed protein), meeting the specifications described herein, is GRAS under its intended conditions of use through scientific procedures in accordance with 21 CFR § 170.30 (a) and (b).

1.6. Exemption from premarket approval

NapiFeryn has concluded that its canola protein is GRAS under the conditions of its intended use and therefore the notified substance is not subject to the premarket approval requirements of the Federal Food, Drug, and Cosmetic Act.

1.7. Availability of information for FDA review

Napiferyn agrees to make available to the FDA the data and information that are the basis for NapiFeryn's conclusion of GRAS (upon request). Napiferyn agrees to the following procedures for making the data and information available to the FDA:

- upon FDA request, allow the FDA to review and copy the data and information during customary business hours at the address provided in Section 1.2, where data and information will be available to the FDA.
- upon FDA request, provide the FDA with a complete copy of the data and information either in an electronic format that is accessible for our evaluation or on paper.

1.8. Exemption from disclosure

None of data and information in Parts 2 through 7 of this GRAS Notice are exempt from disclosure under the Freedom of Information Act, 5 U.S.C. 552.

1.9. Certification

The undersigned certifies that to the best of our knowledge, this GRAS Notice is a complete, representative, and balanced submission that includes unfavorable information, as well as favorable information known to NapiFeryn BioTech and pertinent to the evaluation of the safety and GRAS use of canola protein (Raptein™90), meeting appropriate specifications described herein, and used in accordance with current Good Manufacturing Practice (cGMP) in food.

1.10. Name and position of Signatory

Date and signature	Notifier's Agent
1 September 2022 	Nikolaas Tilkin-Franssens
	Regulatory Affairs Manager
	Pen & Tec Consulting S.L.U.
	Pl. Ausias March 1, 4th floor D01
	08195 Sant Cugat del Vallès, Barcelona
	Spain
	+34 936 75 80 15
	info@pentec-consulting.eu

2. Identity, method of manufacture, specifications and physical or technical effect

2.1. Data and information that identifies the notified substance

2.1.1. Description

Canola protein (rapeseed protein), which consists of $\geq 90\%$ protein (dry matter basis), is the subject of this GRAS notification. The canola protein (rapeseed protein) ingredient is to be marketed under the trade name RapteinTM90. The ingredient will be referred to as canola protein throughout this document.

This GRAS notification concerns a canola protein ingredient consisting of $\geq 90\%$ protein (dry matter basis) obtained from rapeseed (canola) press cake that is a by-product of rapeseed oil production. Rapeseed oil is produced by pressing the seeds of the rape plant from three varieties, *Brassica napus* and/or *Brassica juncea* and/or *Brassica rapa*. The rapeseed cake is composed of crushed seeds. Canola protein contains two major protein fractions: cruciferins and napins.

Cruciferins are globulins and are the major storage protein in the seed. Cruciferins are classified as 12S globulins (~300 kDa) based on their sedimentation coefficient. Cruciferins are salt soluble neutral glycoproteins (Nietzel et al. 2013). Napins belong to the albumin class. These are water soluble, low-molecular weight basic proteins classified as 2S or 1.7S proteins (Ren and Bewley, 1999; Chmielewska et al., 2020), representing 20-40% of the total seed protein, and having molecular weights in the range of 12–17 kDa (Stone et al. 2014; Von Der Haar et al. 2014). Napins are low molecular weight storage proteins composed of two disulfide-linked polypeptides (Tan et al. 2011). Other proteins that are present in rapeseed are oil body proteins. Predominant oil body proteins in rapeseed are oleosins with molecular mass ~ 18 – 25 kDa. Oil body proteins also include caleosins (~30 kDa) and steroleosins (~40 kDa) (Chmielewska et al., 2020).

Canola protein (RapteinTM90) contains >60% of 250-150kDa protein fraction and <40% of 30-10kDa protein fraction as determined by internal HPLC-SEC analysis.* To confirm the occurrence of mentioned proteins, SDS PAGE analysis was performed. Because native cruciferin is a multimeric protein, its subunits are observed as separated using that method.

*Samples were dissolved in a 50mM TRIS-HCl + 300mM NaCl buffer (pH=6.8) and analyzed by HPLC-UV ($\lambda=280$ nm). Protein fractions were calculated on the basis of the peak area ratio.

Similarly, napin has two main chains. Canola protein samples were analyzed in reducing and non-reducing conditions (see Appendix 6). The results were slightly different for both options: 12-13 or 10-11 bands were identified in non-reducing and reducing conditions. The highest intensity was observed for 4 major bands that corresponded to protein fractions with molecular weight in the range of 11-17, 17-20, 25-35 and 48-63 kDa. Moreover, some bands below 11 kDa were noted. Independently, as part of the allergenicity tests, another SDS PAGE analysis was also performed. The banding pattern for Raptein™90 (run as reduced samples) showed the presence of proteins of about 100 kDa, 50 kDa, 20-35 kDa (few bands derived from the hydrolysis of larger protein) and below 10 kDa. On the other hand, the intact mass spectrometry (LC-MS) results revealed signals for 8.8 and 8.4 kDa, as well as 47.7 kDa. Furthermore, the following proteins were detected in the Raptein™90 samples as part of the allergenicity analysis: four cruciferins (11S globulins) and three napins (1.7S seed storage proteins). Complete data is provided in the Appendix 4.

Table 1 presents typical amino acid content in five lots of canola protein as well as average values. Complete data is included in the Appendix 1. Canola protein (Raptein™90) obtained by NapiFeryn BioTech contains relatively high levels of all indispensable amino acids. The protein content of Raptein™90 exceeds 90% on dry matter basis in all products. Table 2 and 3 show the amino acid profile of Raptein™90 with comparison to, respectively, previously notified canola proteins (Puratein® and Supertein®) and other protein isolates (soy and pea). Some similarities in the profiles can be noticed, in particular when comparing Raptein™90 and Cruciferin-rich Puratein®, which may be related to high cruciferin content in the product of NapiFeryn BioTech.

Table 1. Typical amino acid content in representative lots of canola protein (Raptein™90)

Amino acid [g/100g sample]	Lot number					Average	% of protein amino acids total (w/w)
	R-03#57	R-06#35	R-08#57	R-12#52	R-15#59		
Glycine	4.74	5.22	5.13	5.56	4.79	5.09	5.49
Alanine	4.08	4.38	4.29	4.67	4.32	4.35	4.69
Valine	4.52	5.10	5.19	4.97	5.02	4.96	5.35
Leucine	7.26	7.37	7.49	7.32	7.11	7.31	7.88

Amino acid [g/100g sample]	Lot number					Average	% of protein amino acids total (w/w)
	R-03#57	R-06#35	R-08#57	R-12#52	R-15#59		
Isoleucine	3.41	3.79	3.68	3.72	3.87	3.69	3.98
Serine	3.76	4.02	3.97	4.28	4.05	4.02	4.33
Threonine	3.81	4.16	4.17	4.36	3.96	4.09	4.41
Tyrosine	2.12	2.73	2.46	2.44	2.59	2.47	2.66
Aspartic Acid	7.53	9.49	7.94	7.88	7.93	8.15	8.79
Phenyl- alanine	3.71	4.21	3.83	3.94	3.96	3.93	4.24
Tryptophan	1.30	1.35	1.32	1.31	1.32	1.32	1.42
Proline	5.71	4.98	5.46	5.39	5.07	5.32	5.74
Methionine	1.65	1.84	1.89	2.01	1.96	1.87	2.02
Cysteine + Cystine	2.21	1.35	1.93	2.06	1.76	1.86	2.01
Lysine	4.97	4.59	5.23	5.80	5.69	5.26	5.67
Histidine	2.56	2.33	2.55	2.89	2.55	2.58	2.78
Arginine	5.91	6.41	6.31	6.68	6.06	6.27	6.77
Glutamic Acid	19.30	20.20	21.50	22.00	18.00	20.20	21.78
Hydroxy- proline	0.43	< 0.05	0.17	<0.2	<0.2	<0.2 -0.43	-
Ornithine	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	-

Table 2. Amino acids profile of Raptein™90 with comparison to Puratein® and Supertein®

Amino acids [g/100 g protein]	Raptein™90*	Cruciferin-rich Puratein®**	Napin-rich Supertein®**
Aspartic acid + Asparagine	8.79	9.3	2.6
Threonine	4.41	3.7	3.2

Amino acids [g/100 g protein]	Raptein™90*	Cruciferin-rich Puratein®**	Napin-rich Supertein®**
Serine	4.33	4.1	3.3
Glutamic acid + Glutamine	21.78	19.8	24.6
Proline	5.74	5.8	9.2
Glycine	5.49	5.4	4.3
Alanine	4.69	4.2	4.0
Cystine	2.01	1.6	4.5
Valine	5.35	5.5	4.3
Methionine	2.02	1.9	2.4
Isoleucine	3.98	4.4	3.0
Leucine	7.88	8.2	6.0
Tyrosine	2.66	4.1	1.4
Phenylalanine	4.24	4.9	2.6
Histidine	2.78	2.5	3.6
Lysine	5.67	4.0	7.4
Arginine	6.77	7.2	5.8
Tryptophan	1.42	2.0	1.4

* Average values from five lots of Raptein™90

**Values are average of duplicate analyses (FDA, 2010)

Table 3. Amino acids profile of Raptein™90 with comparison to soy and pea protein isolates

Amino acids [g/100 g]	Raptein™90*	Soy protein isolate**	Nutralys®** (Pea Protein Isolate)
Aspartic acid + Asparagine	8.79	10.69	9.1
Threonine	4.41	3.40	3.1
Serine	4.33	5.13	4.2

Amino acids [g/100 g]	Raptein™90*	Soy protein isolate**	Nutralys®** (Pea Protein Isolate)
Glutamic acid + Glutamine	21.78	19.04	13.6
Proline	5.74	4.55	3.4
Glycine	5.49	3.58	3.2
Alanine	4.69	4.31	3.4
Cystine	2.01	1.50	0.8
Valine	5.35	4.60	3.8
Methionine	2.02	1.14	0.8
Isoleucine	3.98	4.37	3.6
Leucine	7.88	7.07	6.5
Tyrosine	2.66	3.39	3.1
Phenylalanine	4.24	4.63	4.2
Histidine	2.78	2.76	1.9
Lysine	5.67	5.75	5.8
Arginine	6.77	7.15	6.7
Tryptophan	1.42	not measured	0.7

* Average values from five lots of Raptein™90

**Values are average of duplicate analyses (Zheng et al. 2021; FDA, 2020a)

2.1.2. Presence of undesirable anti-nutritional factors

Rapeseeds are known to contain a number of anti-nutritional factors, such as phenolic compounds, glucosinolates, erucic acid, phytic acid and protease inhibitors. Since the 1970's, low erucic acid and low glucosinolate rapeseed (canola) varieties have been developed by genetic engineering or breeding techniques (double low or “00” rapeseed varieties). The potential for adverse impacts from the intake of these compounds is addressed in section 6.7 of this document.

2.2. Description of the manufacturing process

Figure 1 presents a block flow diagram depicting the process for production of the canola (rapeseed) protein product (Raptein™90). The starting material for the process is cold-pressed rapeseed cake.

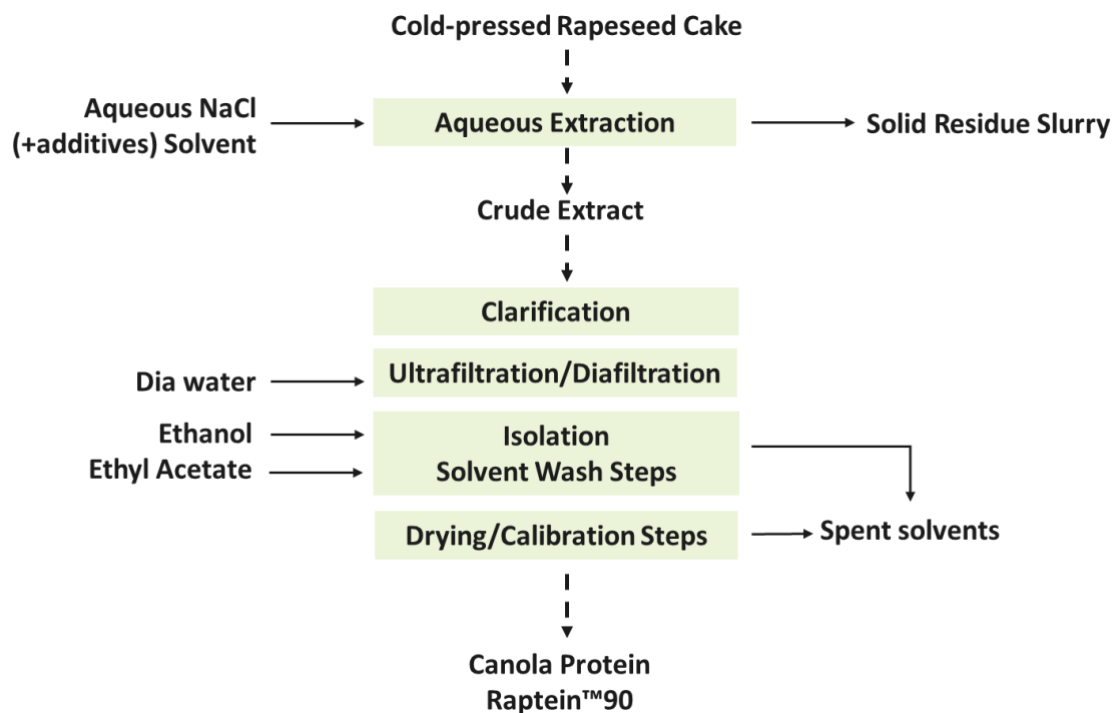


Figure 1. Block flow diagram of the canola (rapeseed) protein production process

The production process starts with an extraction step, in which comminuted cold-pressed rapeseed cake, suspended in an aqueous salt (NaCl) solution, is delivered to the extractor device in a batch-wise or continuous manner, while keeping solid material in the extractor in a suspended state. Ranges of critical process parameters are as follows: cake to water ratio: 1:3 to 1:20, 0-5% w/w NaCl, 0-1% w/w Na₂SO₃, 0-1% w/w ethanol, 0-1% w/w sodium benzoate, and the temperature is kept below 25°C, pH between 4.5 and 7.5.

The resulting protein-containing solution (i.e., crude extract) is separated from the insoluble material in the extractor device by means of filtration.

Crude extract is further processed to canola (rapeseed) protein (Raptein™90).

The crude extract is further clarified by means of filtration or centrifugation in order to remove haze, fines and precipitates from the extract. To enhance effectiveness of clarification, processing aids such as calcium chloride, phosphates, flocculating agents,

coagulating agents, citric acid and/or ascorbic acid and/or hydrochloric acid and/or sodium hydroxide may be added to the extract prior to the clarification step.

The clarified extract is subsequently concentrated and washed in an ultrafiltration diafiltration (UF-DF) step. The UF-DF step concentrates the protein content in the solution and removes undesirable by-products such as non-protein nitrogen (NPN) compounds, soluble carbohydrates, polyphenols, soluble phytates and glucosinolates from the protein-containing retentate solution.

Processing aids such as sodium chloride, sodium benzoate, citric acid, ascorbic acid, hydrochloric acid, sodium hydroxide, and/or sulfites may be added to the extract prior to or during diafiltration to improve effectiveness of the processing and to protect the protein from oxidation and browning.

The protein-containing retentate solution after diafiltration is subsequently washed with organic solvents: ethanol and ethyl acetate.

First organic solvent wash step using ethanol removes anti-nutritional factors, such as phenolic compounds, and assists precipitation of protein. Subsequently, precipitate is separated from the liquid solution containing 50-70 % ethanol (w/w) by means of suitable techniques such as solid-liquid separation in a centrifuge or a filter press.

Subsequently, organic solvent wash step with ethyl acetate is employed to remove impurities such as lipids that are not soluble in ethanol, but are soluble in ethyl acetate. The solid phase is then separated from the liquid solution by means of suitable techniques such as solid-liquid separation in a centrifuge or a filter press.

Organic wash steps are carried out with the temperature kept between 0-50°C. Ratio solvent-to-solid in the organic solvents wash steps is kept in the range 1:3 – 1:10 (w/w). Solid phase can be either dispersed in a stirred vessel or form a cake in a filter press.

Subsequently, the UF-DF washed, and optionally solvent precipitated and washed, protein is subjected to drying in a dryer under conditions where the protein is not exposed to temperatures higher than 70°C.

All processing aids used in the manufacturing of canola protein are appropriate and permitted for use in foods in the U.S (see Table 4).

Table 4. List of processing aids with US Code of Federal Regulation (CFR) references

Name of processing aids	Code of Federal Regulations (CFR) - Title 21
ascorbic acid	§ 182.8013
calcium chloride	§ 184.1193
citric acid	§ 184.1033
ethanol	§ 184.1293
ethyl acetate	§ 173.228
hydrochloric acid	§ 182.1057
sodium benzoate	§ 184.1733
sodium bisulfite	§ 182.3739
sodium chloride	§ 182.1
sodium hydroxide	§ 184.1763
sodium phosphate	§ 182.1778
sodium sulfite	§ 182.3798

2.3. Specifications for food grade material

2.3.1. Product specification

Specifications for the product are presented in Table 5. Analytical results from five non-consecutive lots are provided in Appendix 1. A comparison of five non-consecutive lots of product and values from the specification can be found in Table 7. Furthermore, a summary of characteristics of RapteinTM90 and two examples of canola protein products is presented in Table 6. It should be noted, that there are many similarities in the specification of RapteinTM90 and previously GRAS-notified canola protein ingredients.

Table 5. Product specifications for canola protein (Raptein™90)

Parameter	Unit	Value	Method
Appearance	-	white to off-white dried powder	Visual
Composition**			
Total protein (N*6.25)	%	≥ 90	ISO 1871:2009
Carbohydrates	%	≤ 7	By difference*
Fat (direct)	%	≤ 2	PB/CH/16 version 3 from 09.11.2018
Ash	%	≤ 4	PN-A-79011-8:1998
Moisture	%	≤ 7	PN-A-79011-3:1998
Fibre	%	≤ 0.5	WE 152/2009 App. III
Total glucosinolates	mmol/kg	≤ 1	ISO 9167-1:1992; AOCS Ak 1-92
Purity**			
Phytates	%	≤ 1.5	Analytical Biochemistry Vol. 77:536-539 (1977)
Lead	mg/kg	≤ 0.5	DIN EN 15763:2010 (2010-04), mod.
Arsenic	mg/kg	≤ 0.2	§64 LFGB L 00.00-19/3
Cadmium	mg/kg	≤ 0.2	DIN EN 15763:2010 (2010-04), mod.
Mercury	mg/kg	≤ 0.1	DIN EN 15763:2010 (2010-04), mod.
Microbiological criteria			
Total plate count	cfu/g	≤ 10 ⁴	PN-EN ISO 4833-1:2013-12
<i>E. coli</i>	-	absence in 10g	PN-ISO 7251:2006
<i>Salmonella</i> spp.	-	absence in 25 g	PN-EN ISO 6579-1:2017-04
Yeast and Molds	cfu/g	≤ 100	PN-ISO 21527-2:2009
Total coliform count	cfu/g	< 10	PN-ISO 4831:2007

Parameter	Unit	Value	Method

*Carbohydrates are calculated by difference as follows: 100 % - [protein (as is) % + moisture % + fat % + ash % + fibre %] **On dry matter (except of moisture)

PN-A - polish standard; LFGB - Lebensmittel-und-Futtermittelgesetzbuch (German Food and Feed Act); DIN - Deutsches Institute für Normung (German institute for standardisation; AOCS - American Oil Chemists' Society

Table 6. Microbiological, physical and chemical characteristics of Raptein™90, Puratein®, and Supertein®

Parameter	Canola Protein (Raptein™90)	Cruciferin-rich Puratein®*	Napin-rich Supertein®*
Appearance	white to off-white powder	fine, brownish-yellow powder	fine, light yellow powder
Protein (N*6.25)	≥ 90 %DM	minimum 90%	minimum 90%
Moisture	≤ 7 %DM	maximum 9%	maximum 9%
Ash	≤ 4 %DM	maximum 6%	maximum 6%
Fat	≤ 2 %DM	maximum 2%	maximum 2%
Glucosinolates	≤ 1 µmol/g DM	<30 µmol/g	<30 µmol/g
Phytates	≤ 1.5 %DM	phytic acid 0.32 %	phytic acid 3.34 %
Erucic acid	<0.04%	<0.04%	<0.04%
Lead	≤ 0.5 ppm DM	<0.5 ppm	<0.5 ppm
Standard plate count	≤ 1x10 ⁴ cfu/g	maximum 5x10 ⁴ cfu/g	maximum 5x10 ⁴ cfu/g
<i>Salmonella</i>	Absent in 25 g	Negative in 25 g	Negative in 25 g
<i>E.coli</i>	Absent in 10g	Negative in 40 g	Negative in 40 g

DM – dry matter

*According to the specification (FDA, 2010)

2.3.2. Batch data

The results of key parameters for 5 separate and representative batches of Raptein™90 are summarized in Table 7. The presented data show compliance with the specifications and consistency of the production process. The results of heavy metal content as well as of microbiological tests are considered within safe limits. Certificates of Analysis are provided in Appendix 1.

Table 7. Analyses of 5 production batches of canola protein (Raptein™90)

Parameter	Specification	Lot No. R-03#57	Lot No. R-06#35	Lot No. R-08#57	Lot No. R-12#52	Lot No. R-15#59
Appearance	white to off-white dried powder	white to off-white dried powder	white to off-white dried powder	white to off-white dried powder	white to off-white dried powder	white to off-white dried powder
Composition**						
Total protein (N*6.25) [%]	≥ 90	93.53	96.85	97.78	98.80	93.85
Carbohydrates* [%]	≤ 7	2.54	0.55	0.00	0.00	4.13
Fat (direct) [%]	≤ 2	0.84	<LOQ (<0.2)	<LOQ (<0.2)	<LOQ (<0.2)	0.54
Ash [%]	≤ 4	2.78	1.98	2.42	2.02	1.16
Moisture [%]	≤ 7	3.9	3.5	3.8	4.9	4.7
Fibre [%]	≤ 0.5	<LOQ (<0.30)	<LOQ (<0.30)	<LOQ (<0.30)	0.40	<LOQ (<0.30)
Total glucosinolates [mmol/kg]	≤ 1	0.14	<LOQ (<0.05)	<LOQ (<0.05)	<LOQ (<0.05)	<LOQ (<0.05)
Purity**						
Phytates [%]	≤ 1.5	1.01	1.04	1.25	0.99	0.79
Lead [mg/kg]	≤ 0.5	0.229	0.280	0.060	0.189	0.115
Arsenic [mg/kg]	≤ 0.2	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)
Cadmium [mg/kg]	≤ 0.2	0.101	0.197	0.020	0.140	0.102
Mercury [mg/kg]	≤ 0.1	<LOQ (<0.005)	<LOQ (<0.005)	<LOQ (<0.005)	<LOQ (<0.005)	<LOQ (<0.005)
Microbiological criteria						
Total plate count [cfu/g]	≤ 10 ⁴	290	<10	<10	450	1 400
<i>E. coli</i>	absent in 10g	absent	absent	absent	absent	absent

Parameter	Specification	Lot No. R-03#57	Lot No. R-06#35	Lot No. R-08#57	Lot No. R-12#52	Lot No. R-15#59
<i>Salmonella</i> spp.	absent in 25 g	absent	absent	absent	absent	absent
Yeast and Molds [cfu/g]	≤ 100	<10	<10	<10	<10	<10
Total coliform count [cfu/g]	≤ 10	0	0	0	0	0

*Carbohydrates are calculated by difference as follows: 100 % - [protein (as is) % + moisture % + fat % + ash % + fibre %]; **On dry matter (except of moisture); <LOQ – below the Limit of Quantification

2.3.3. Mycotoxin analysis

Mycotoxins are metabolites produced by microfungi that pose a threat to human health. Table 8 contains the extensive mycotoxin analysis for five lots of canola protein (for certificates of analyses, see Appendix 1). Almost all tested compounds were found to be below LOQ, thus they are not considered as an object of concern. For example, the result for total aflatoxin content is <0.4 µg/kg, while according to US and EU regulations the maximum level should be 20 µg/kg (all foods except milk) and 4 µg/kg (all cereals, including maize and rice, intended for direct human consumption), respectively (FDA, 2000; Commission Regulation, 2010). Similarly, fumonisin levels in Raptein™90 were below 20 µg/kg, while Mycotoxin Regulations for Food in the US and EU recommend 2000-4000 µg/kg (corn products; FDA, 2001) and 400-2000 µg/kg (maize products; Commission Regulation, 2006). However, one sample (Lot No. R-12#52) contained 0.6 µg/kg of ochratoxin A, but it is still within safe limit, which is 3 µg/kg for all products derived from unprocessed cereals as in the EU mycotoxin regulations (Commission Regulation, 2006).

Table 8. Mycotoxins in canola protein (Raptein™90)

Mycotoxin	Unit	LOQ	Lot Number				
			R-03#57	R-06#35	R-08#57	R-12#52	R-15#59
3-Acetyldeoxynivalenol (3AcDON)	µg/kg	20	<20	<20	<20	<20	<20
BA-TM-03 15-Acetyldeoxynivalenol (15AcDON)	µg/kg	20	<20	<20	<20	<20	<20

Mycotoxin	Unit	LOQ	Lot Number				
			R-03#57	R-06#35	R-08#57	R-12#52	R-15#59
Ochratoxin A	µg/kg	0.5	<0.5	<0.5	<0.5	0.6	<0.5
Deoxynivalenol (DON)	µg/kg	20	<20	<20	<20	<20	<20
Fusarenone X (Fus X)	µg/kg	20	<20	<20	<20	<20	<20
Nivalenol (NIV)	µg/kg	20	<20	<20	<20	<20	<20
T ₂ Toxin (T ₂)	µg/kg	10	<10	<10	<10	<10	<10
HT ₂ Toxin (HT ₂)	µg/kg	10	<10	<10	<10	<10	<10
Zearalenon (ZON)	µg/kg	10	<10	<10	<10	<10	<10
Aflatoxin B ₁	µg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aflatoxin B ₂	µg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aflatoxin G ₁	µg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aflatoxin G ₂	µg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Aflatoxin	µg/kg	0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Fumonisin B ₁	µg/kg	20	<20	<20	<20	<20	<20
Fumonisin B ₂	µg/kg	20	<20	<20	<20	<20	<20
Fumonisin B ₃	µg/kg	20	<20	<20	<20	<20	<20

2.3.4. Pesticide analysis

Three lots of the canola protein (R-03#57, R-12#52, R-15#59) were screened for residues of about 600 pesticides using GC-MS and LC-MS methods. The content of 68 of the most significant compounds was assessed according to the EU Pesticides Database, as well as the Maximum Residue Limits (MRL) Database (Bryant Christie Inc.).

Glyphosate was detected in one lot of canola protein (R-03#57) at a concentration of 0.03 mg/kg, which is significantly lower than the maximum residue limits (10 and 20 mg/kg according to EU and US regulations, respectively). It is worth mentioning that all

other analyzed pesticides were below the LOQ. No other residues were found to be at a level of concern. Complete data is included in the Appendix 1.

2.3.5. Acrylamide formation

Acrylamide is a substance produced via chemical reaction between amino acids and reducing sugars while heating. Significant quantities of acrylamide can be formed in temperatures above 120°C (Żyżelewicz et al., 2010). Since the production process of Raptein™90 as well as the seed pressing process does not exceed this temperature, it is unlikely that acrylamide will be formed.

Five lots of the canola protein were analyzed (Table 9). Each lot had an acrylamide concentration <30µg/kg, which is below the limit of quantification for the method (see Appendix 1). Obtained results are lower than benchmark levels for the presence of acrylamide in foodstuffs (40 – 4000 µg/kg) included in Commission Regulation (EU) 2017/2158 of 20 November 2017 establishing mitigation measures and benchmark levels for the reduction of the presence of acrylamide in food (European Commission, 2017). The guidance for industry developed by FDA in 2016 did not specify any recommended maximum level for acrylamide (FDA, 2016d).

Table 9. Acrylamide in Raptein™90

Parameter	Unit	LOQ	Lot No. R-03#57	Lot No. R-06#35	Lot No. R-08#57	Lot No. R-12#52	Lot No. R-15#59
Acrylamide	µg/kg	30	<30	<30	<30	<30	<30

2.3.6. Residual solvents and processing aids

The process of canola protein production requires use of organic solvents, such as ethanol and ethyl acetate, to reduce the amount of anti-nutritional factors (phenolic compounds and phytates) and fats/lipids. Some other substances are also introduced during manufacturing (e.g. sodium benzoate and sulfites that prevent oxidation and suppress microbial growth). All processing aids are appropriate for use in foods. Residual solvents and additives were determined in canola protein and presented in Table 10.

Table 10. Residual of solvents and processing aids in Raptein™90

Lot number	Benzoic acid and its salts [mg/kg]	Sulphur dioxide [mg/kg]	Ethanol [mg/kg]	Ethyl acetate [mg/kg]
R-03#57	70	<10	357	523
R-06#35	180	55	279	104
R-08#57	not analyzed	not analyzed	253	108
R-12#52	<10	<10	544	552
R-15#59	<10	<10	517	154

The analytical results for the canola protein ingredient summarized in the above tables and included in Certificates of Analysis (COAs) in Appendix 1 confirm that the finished product meets the analytical specifications. Thus, it demonstrates that NapiFeryn's manufacturing process results in a consistently reproducible product, and confirms the lack of significant levels of impurities and/or contaminants (e.g., anti-nutrients, heavy metals, pesticides, mycotoxins, and microbiological contaminants).

2.3.7. Product stability

One batch of canola (rapeseed) protein (Lot No. R-08#57) was placed in a polyethylene (PE) package and was subjected to long-term and accelerated stability studies using two climatic chambers (25 °C, 60% humidity and 40 °C, 75% humidity). The protein and moisture content as well as microbiological tests (aerobic bacteria count, yeast and mold, *Salmonella* spp.) were determined. Figures 2, 3 and 4 as well as Tables 11 and 12 show the stability profile over the period of 24 weeks. The full data set is presented in Appendix 2.

According to the presented results of the stability studies of Raptein™90, no significant changes in the protein or moisture content were reported over the 24-weeks period of storage in 25 °C / 60 %RH. Moreover, the results of microbiological tests carried out at specific points in time were noted below any level of concern. Thus, this assessment confirms that canola isolate is stable in the aforementioned conditions for at least 24 weeks.

Stability of the product was also assessed in an “accelerated protocol” that is based on a reasoned assumption that one week of shelf life at 40°C is equivalent (within reasonable limits) to four weeks of shelf life at 20°C. Adapting such a reasoning, key quality attributes for the samples of Raptein™90 stored in 40°C/75 %RH should remain constant and material considered as safe during 80 weeks (more than 1.5 year) storage at 20°C. After a 16-week storage of the product, an insignificant increase in the moisture content is measured, while the level of microbiological purity and protein content remain stable. Thus, the results confirm that the product is safe for human consumption. The packaging used for commercial product will reflect the need to protect the product to maintain its quality during storage and transport, and ensure that it meets product specifications on moisture content.

Other canola protein isolates - Puratein® and Supertein® - have been reported to be stable with protein content practically unchanged for a period of over two years (FDA, 2010). According to other studies, it was estimated that another product (RPI90) would be stable at 25° C for at least 15 months (FDA, 2017a).

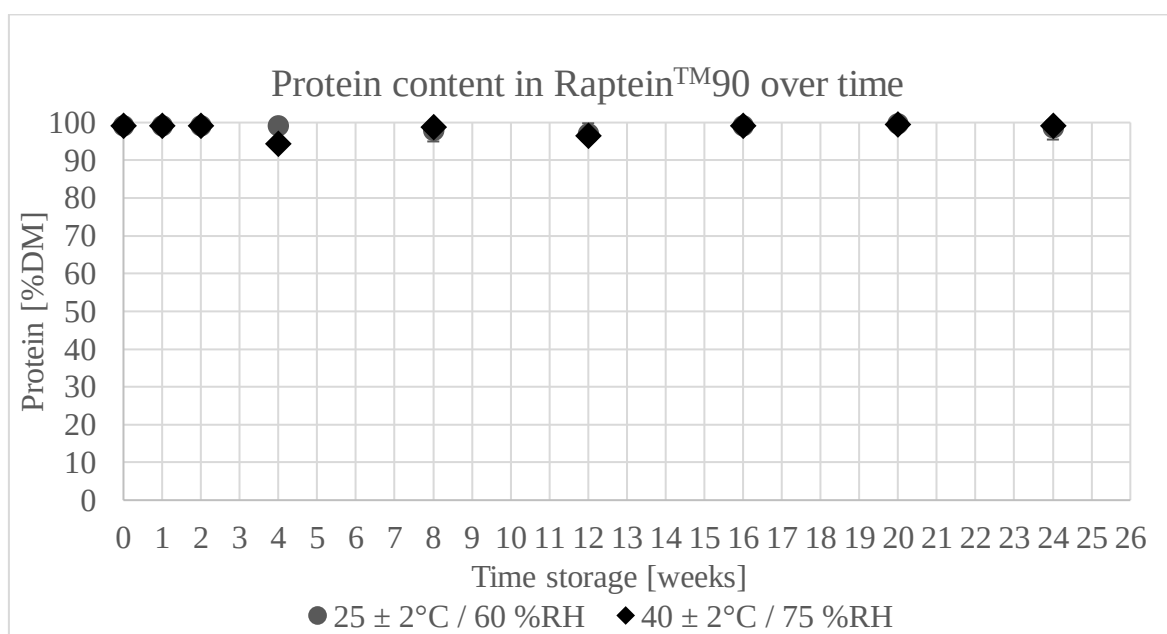


Figure 2. Protein content during stability studies of Raptein™90 (Lot No. R-08#57) in 25 °C / 60 %RH and 40 °C/75 %RH

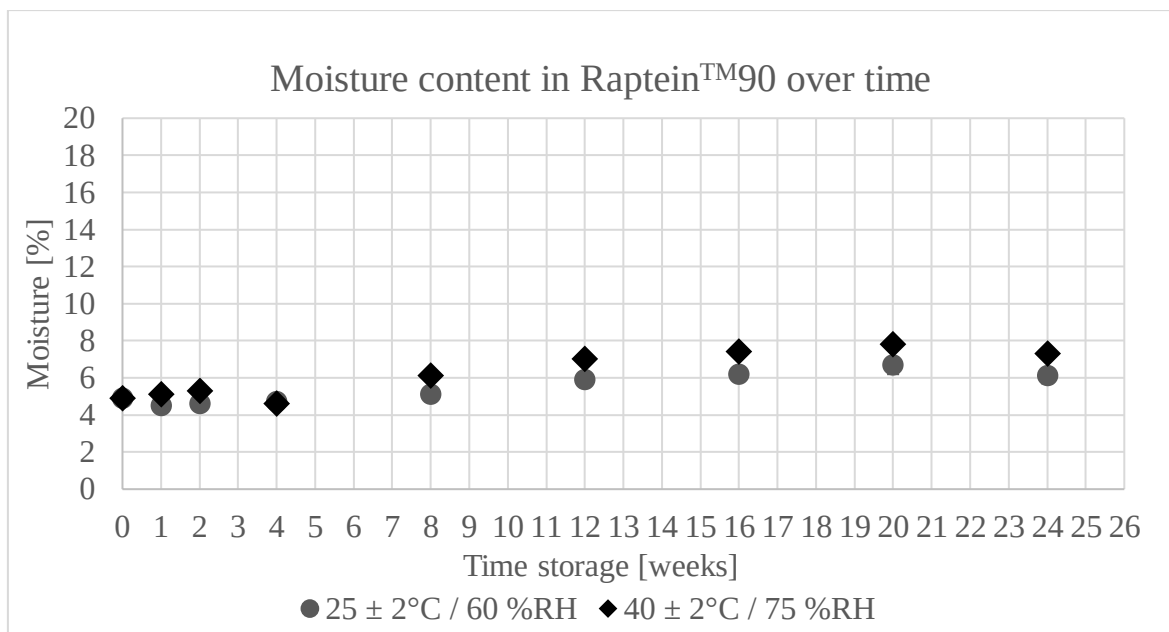


Figure 3. Moisture content during stability studies of Raptein™90 (Lot No. R-08#57) in 25 °C / 60 %RH and 40 °C/75 %RH

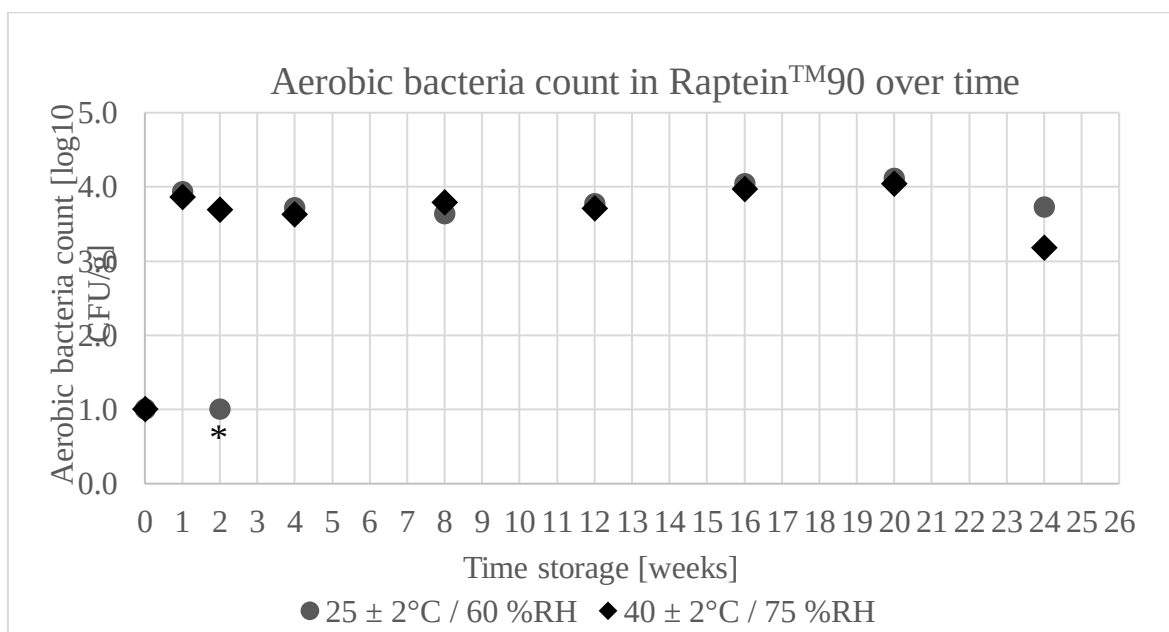


Figure 4. Aerobic bacteria count related to the stability studies of Raptein™90 (Lot No. R-08#57) in 25 °C/60 %RH and 40 °C/75 %RH

* Aerobic bacteria count: <10 CFU/g

Table 11. Microbiological results related to the stability studies of Raptein™90 (Lot No. R-08#57) in 25 °C/60 %RH

Weeks	Yeast and molds count [cfu/g]	Total coliform count [MPN/g]*	<i>Salmonella</i> [absence in 25g]
0	<10	0	absent
1	<10	0	absent
2	<10	0	absent
4	<10	0	absent
8	<10	0	absent
12	<10	0	absent
16	<10	0	absent
20	<10	0	absent
24	<10	0	absent

*MPN/g - the most probable number of coliforms

Table 12. Microbiological results related to the stability studies of Raptein™90 (Lot No. R-08#57) in 40 °C/75 %RH

Weeks	Yeast and molds count [cfu/g]	Total coliform count [MPN/g]*	<i>Salmonella</i> [absence in 25g]
0	<10	0	absent
1	<10	<10	absent
2	<10	<10	absent
4	<10	0	absent
8	<10	0	absent
12	<10	0	absent
16	<10	<10	absent

Weeks	Yeast and molds count [cfu/g]	Total coliform count [MPN/g]*	<i>Salmonella</i> [absence in 25g]
20	<10	0	absent
24	<10	0	absent

*MPN/g - the most probable number of coliforms

2.3.8. Raw materials

The raw material for production of canola protein (rapeseed protein) is press cake which is a by-product of oil production from *Brassica* species: *Brassica napus*, *Brassica juncea* and *Brassica rapa*.

Press cake is sourced from cGMP-qualified oilseed processing mills and is certified as suitable for use in food. See the cGMP+ certificate of one of the rapeseed press cake suppliers in Appendix 5. Table 13 summarizes the most important parameters of the raw materials used in production of canola protein batches described in this report.

Table 13. Physico-chemical composition of 3 lots of rapeseed press cake raw material

Parameter	Unit	Method	Lot No. A-00#58	Lot No. P-00#16	Lot No. A-00#59
Total protein [N*6.25]	%DM	ISO 1871:2009	33.65	32.40	43.49
Fat (direct)	%DM	WE 152/2009 App. III	13.44	16.91	13.71
Ash	%DM	WE 152/2009 App. III	7.42	6.79	7.23
Moisture	%DM	WE 152/2009 App. III	6.56	8.94	8.16
Fiber	%DM	WE 152/2009 App. III	12.22	12.07	5.60
HCl-insoluble ash	%DM	PN-A-88022:1959	0.24	0.42	not analyzed

DM – dry matter

Risks of potential contaminants from the rapeseed cake are:

- Heavy metals

Arsenic, cadmium, lead and mercury were measured in rapeseed cakes used for canola protein production (Table 14). The obtained results were below any level of concern.

Table 14. Heavy metals content in three lots of the raw material rapeseed press cake

Rapeseed cake Lot no.	Arsenic (As) [mg/kg DM]	Cadmium (Cd) [mg/kg DM]	Lead (Pb) [mg/kg DM]	Mercury (Hg) [mg/kg DM]
Limit of quantification	<0.1 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.005 mg/kg
A-00#58	<LOQ	0.077	0.009	<LOQ
P-00#16	<LOQ	0.063	0.040	<LOQ
A-00#59	0.22	0.120	0.015	<LOQ

- Pesticides

NapiFeryn BioTech obtained the raw materials from suppliers that follow cGMP+. Two lots of the rapeseed cake (no. A-00#58 and A-00#59) were tested. The material was screened for residues of about 600 pesticides using GC-MS and LC-MS methods. The content of 68 of the most significant compounds was assessed according to the EU Pesticides Database and the Maximum Residue Limits (MRL) Database (Bryant Christie Inc.).

The determined content of thiophanate-methyl in one of rapeseed cake lot (no. A-00#59) was 0.15 mg/kg, while the maximum residual limits for this pesticide in canola seeds in the US and EU is 0.1 mg/kg. However, all other analyzed pesticides were below the LOQ. The results of isofetamid for all tested lots were below LOQ (<0.03 mg/kg), but the maximum residue level in US and EU is 0.015 mg/kg. No other residues were reported to be at a level of concern. Further, pesticide analyses of finished canola protein batches showed no pesticides at any level of concern. Complete data set is included in the Appendix 1.

- Microbiological contamination

Data for three independent and representative lots of rapeseed press cake are presented in Appendix 1. The results are considered within safe limits according to NapiFeryn BioTech's internal requirements for raw materials. (see Table 15).

Table 15. Microbiology in three lots of the raw material rapeseed press cake

Parameter	Unit	Lot No. A-00#58	Lot No. P-00#16	Lot No. A-00#59
Total plate count	cfu/g	2 700	<10	28 000
<i>E. coli</i>	absent in 10g	not analyzed	absent	absent
<i>Salmonella</i> spp.	absent in 25 g	absent	absent	absent
Yeast and Molds	cfu/g	<10	<10	<10
Total coliform count	cfu/g	not analyzed	0	0
Sulphite reducing anaerobes	cfu/g	<10	<10	<10
<i>Listeria monocytogenes</i>	absent in 25 g	absent	absent	absent
<i>Clostridium perfringens</i>	cfu/g	<10	<10	<10

- Mycotoxins

The levels of mycotoxins in rapeseed press cake are monitored. As presented in Table 16, reported concentrations are below LOQ and hence are not of safety concern according to US and EU regulations. See Appendix 1.

Table 16. Mycotoxin concentrations in three different and representative lots of rapeseed press cake

Mycotoxin	Unit	Lot Number		
		A-00#58	P-00#16	A-00#59
3-Acetyldeoxynivalenol (3AcDON)	µg/kg	<20	<20	<20
BA-TM-03 15-Acetyldeoxynivalenol (15AcDON)	µg/kg	<20	<20	<20
Ochratoxin A	µg/kg	<1	<1	<1
Deoxynivalenol (DON)	µg/kg	<20	<20	<20
Fusarenone X (Fus X)	µg/kg	<20	<20	<20
Nivalenol (NIV)	µg/kg	<20	<20	<20
T ₂ Toxin (T ₂)	µg/kg	<10	<10	<10

Mycotoxin	Unit	Lot Number		
		A-00#58	P-00#16	A-00#59
HT ₂ Toxin (HT ₂)	µg/kg	<10	<10	<10
Zearalenone (ZON)	µg/kg	<10	<10	<10
Aflatoxin B ₁	µg/kg	<1	<1	<1
Aflatoxin B ₂	µg/kg	<1	<1	<1
Aflatoxin G ₁	µg/kg	<1	<1	<1
Aflatoxin G ₂	µg/kg	<1	<1	<1
Total Aflatoxin	µg/kg	<4	<4	<4
Fumonisin B ₁	µg/kg	<20	<20	<20
Fumonisin B ₂	µg/kg	<20	<20	<20
Fumonisin B ₃	µg/kg	<20	<20	<20

2.3.9. Information on the physical and technical effect

Proteins make up an integral part of many food products and are essential components of the daily diet of humans. Canola (rapeseed) proteins - cruciferin and napin - will be digested in standard metabolic processes like any other proteins, to yield break-down products in forms of amino acids and small peptides. The amino acids of canola (rapeseed) protein are relatively efficiently absorbed and utilized (Galibois et al. 1989; Bos et al. 2007; Fleddermann et al. 2013).

According to a human feeding study, *Brassica napus* rapeseed protein isolate had an ileal digestibility value of 84%, which was lower than cereal-based proteins, but higher than other legumes, such as lupin (Bos et al. 2007). The true nitrogen digestibility of canola protein isolate determined in rat assay showed 93.3%, which is only slightly lower than the 94.9% for soy protein isolate (Fleddermann et al. 2013). In the same research, increases of amino acids in human plasma were measured. Results showed that consumption of canola or soy protein led to significant increases of amino acids after 62.3 and 83.6 min, respectively. This study showed that canola (rapeseed) protein has a high nutritional quality and can be considered as efficient as soy protein for a postprandial amino acid response (Fleddermann et al. 2013).

The US FDA recognizes FAO 1991 report and use of *in vivo* rat digestibility assay in determining protein quality (PDCAAS) for nutrient content claims and declaration of % DV of proteins on the Nutrition Facts Table on US food product labels. PDCAAS values for other canola protein isolates were estimated to be 86% (Fleddermann et al., 2013) and 87% (FDA, 2017a).

For completeness, the *in vitro* protein digestibility (IVPD) of raw vegetable proteins and protein isolates are as follows: lupin seeds 82.3-89.0%, Chinese bean seed (*Vigna unguiculata*) 83.1-86.1%, and pea protein isolate 79-87% (Pastor-Cavada et al., 2009; Tinus et al., 2012; Laguna et al., 2017). In comparison, IVPD was determined during digestion of raw and extruded canola flour under various conditions, and similar values were obtained, 79.5 and 78.9-81.3%, respectively (Zhang et al. 2017).

3. Dietary exposure

NapiFeryn's canola protein (containing $\geq 90\%$ protein) is intended to be used as a food ingredient (protein source), formulation aid [21 CFR 170.3(o)(14)], nutrient supplement [21 CFR 170.3(o)(20)], stabilizer and thickener [21 CFR 170.3(o)(28)] and texturizer [21 CFR 170.3(o)(32)] in a variety of foods and beverages at use levels ranging from 5% to 100%.

Dietary exposure was estimated on the basis of the application rate provided in Table 17 (and Table 1 in Appendix 3).

It is expected that RapteinTM90 will be used in food and beverage products for consumption by adults and children 1 year of age and older. Approximately 79.47% of the total U.S. population 2+ years was identified as consumers of RapteinTM90 from the selected food uses in the 2017-2018 survey (CDC 2022. NHANES 2017-2018 Dietary Data).

The canola protein (RapteinTM90) will be added to food products as a protein substitute and therefore will not contribute any additional exposure to protein for consumers. Most of the protein intake in the population is, and will remain, in the form of unprocessed foods, including meat, poultry, fish and legumes.

The Food and Drug Administration (FDA) has established a protein daily reference value (DRV) of 50g/day for adults and children four years of age or older (21 CFR § 101.9). The Institute of Medicine suggests a Recommended Dietary Allowance (RDA) for protein of 56 g/day for adult males and 46 g/day for adult females (IOM, 2006). However, the RDA does not represent an upper limit of consumption. It is the average daily dietary intake level sufficient to meet the nutrient requirements of nearly all healthy individuals in a group.

We do not realistically expect that the actual consumption of foods containing canola protein (RapteinTM90) would result in a daily consumption of greater than the DRV or RDA. The canola protein is intended only to be an alternative source of protein for current uses in food. Therefore, the proposed uses of canola protein in foods will not result in an increase in the overall consumption of protein by the US population.

In addition, many protein products are available in the marketplace, including products with plant proteins. FDA has reviewed extensive published information and data as part of GRAS notifications for animal and plant-based protein products and subsequently issued

“no objection letters”. Among plant proteins, examples are: isolated wheat protein (FDA, 1999), canola protein isolates (FDA, 2010), canola protein isolate and hydrolyzed canola protein isolate (FDA, 2011), canola/rapeseed protein isolate (FDA, 2017a), potato protein isolate (FDA, 2013), oat protein (FDA, 2015), pea protein (FDA, 2016a, 2016b, 2018b, 2019a, 2020a), and fava bean protein (FDA, 2020b).

Canola protein (Raptein™90) is proposed for use as a plant-based protein that can provide an alternative dietary protein source without exceeding the population's current protein intake.

3.1. Estimated daily intake of canola protein (rapeseed protein)

Canola protein (Raptein™90) can be used in various types of food formulations as a substitute for, and/or in conjunction with, other protein sources in conventional food products. Due to its functional properties, it is also intended for use as an emulsifier, gelling agent, foaming agent, thickener or texturizer. The highest use level (g Raptein™90/100g of food as consumed) is proposed for breakfast cereals (e.g., oatmeal, ready to eat breakfast cereal etc.) and snack foods (e.g., popcorn) – 60 g/100g of food as consumed. Raptein™90 can also constitute up to 100% (as is basis) of protein and nutritional powders.

Canola protein is intended to be used in a variety of categories of food and beverages including: bakery products, breakfast cereals, grain products, pastas, bars, protein and nutritional powders, beverages and beverage bases non-alcoholic, milk products and dairy analogs, coffee and tea, meat product analogs, fat, oils and salad dressings, egg substitutes, soup and soup mixes, sauces, gravies, condiments and dips, nut products, snack foods, fruit and water ices, confections, candies and frostings, sweet sauces, toppings, and syrups, jams, jellies, gelatins, puddings, fillings, processed fruits, vegetables, legumes, batter/breadings, spice and seasoning mixes (Table 17; Table 1 in Appendix 3).

Table 17. Canola protein (Raptein™90) intended uses and use levels

Food Categories	Intended Food Uses	Max. use level (g Raptein™90 / 100g of food as consumed)
Bakery Products	Bakery products (e.g. breads, rolls, pies etc.) and baking mixes	30
Beverages	Beverages and beverage bases non-alcoholic (e.g. fruit and/or vegetable drinks, smoothies, energy drinks etc.)	15
	Coffee and tea (including instant coffee and tea)	10
Cereals and Other Grain Products	Breakfast cereals (e.g. oatmeal, grits, ready to eat breakfast cereal etc.)	60
	Grain products, pastas (e.g. noodles, macaroni etc.)	20
Dairy Products and Substitutes	Milk products and dairy analogs (e.g. cheeses, yoghurts, creams, frozen desserts etc.)	35
Egg and Egg Substitutes	Egg substitutes (e.g. powdered egg analogs etc.) and egg products analogs	20
Fats and Oils	Fat, oils and salad dressings (e.g. mayonnaise-type dressings, margarine-like spreads etc.)	15
Meat or Poultry and Substitutes	Meat product analogs (e.g. sausages, burgers, chops etc.)	35
Fruits and Fruit Juices	Fruit and water ices	20
Miscellaneous	Batter/breadings	10
	Protein and nutritional powders	100*
	Spice and seasoning mixes**	5
	Bars (e.g. nutritional, protein etc.)	40
Nuts and Seeds	Nut products (e.g. nut spreads, nut butters etc.)	40

Food Categories	Intended Food Uses	Max. use level (g Raptein™90 / 100g of food as consumed)
Processed Fruits and Vegetables	Processed fruits, vegetables, legumes (e.g. vegetable spreads)	30
Sauces, Dips, Gravies and Condiments	Sauces, gravies, condiments and dips	15
Snacks	Snack foods (e.g. popcorn, chips etc.)	60
Soups	Soup and soup mixes	20
Sugars and Sweets	Confections, candies and frostings (e.g. baking chocolates, marshmallows, non-chocolate candies etc.)	40
	Jams, jellies, gelatins, puddings, fillings (including mixes)	25
	Sweet sauces, toppings, and syrups	15
* As is basis (content for dry powder), proposed serving – 30 g (one serving a day) ** No NHANES data exists; calculated independently		

The estimated daily intake of canola protein is calculated on the basis of the exposure of individuals to canola protein through consumption of the foods and beverages listed in Table 17 (and Table 1 in Appendix 3). Estimates for the intake of canola protein were based on the food uses and maximum use level in Table 16 (and Table 1 in Appendix 3), in conjunction with food consumption data included in the National Center for Health Statistics’ (NCHS) 2017-2018 National Health and Nutrition Examination Surveys (NHANES) (CDC, 20022; USDA, 2021). A total of 2174 food codes representative of each approved use were chosen from the Food and Nutrition Database for Dietary Studies (FNDDS) for the corresponding biennial NHANES survey. Calculations from NHANES for the mean and 90th percentile intakes were performed for representative food uses of canola protein.

The estimated “all-user” total intakes of canola protein from 2174 proposed food uses listed in NHANES in the U.S. by population group is described in Table 18 (Table 2 in Appendix 3). In summary, approximately 79.74% of the total U.S. population 2+ years was identified

as potential consumers of canola protein from the selected food uses in the 2017-2018 survey.

The mean intakes by all canola protein consumers age 2+ from the selected food uses were estimated to be 33.94 g Raptein™90/person/day or 0.49 g Raptein™90/kg body weight/day. The heavy consumer (90th percentile) intakes were estimated to be 73.50 g Raptein™90/person/day or 1.06 g/kg body weight/day.

Table 18. Estimated “All-user” Daily Intake (EDI) of NapiFeryn's Raptein™90 in Targeted Foods by Population Group (2017-2018 NHANES Data), excluding spices and seasoning

Population Group	N users	N population	% Users	Mean mass [kg]	Mean EDI [g]	90th % EDI [g]	Mean EDI [g/kg]	90th % EDI [g/kg]
ages 1-2	451	642	70.25	13.24	21.05	48.61	1.59	3.67
ages 2-5	365	529	69.00	21.08	24.41	53.05	1.16	2.52
ages 6-12	939	1258	74.64	41.89	29.98	56.87	0.72	1.36
ages 13-19	772	886	87.13	70.32	37.77	83.85	0.54	1.19
ages 20 and up	4621	5493	84.13	81.7	35.20	74.33	0.43	0.91
ages 2 and up	6697	8427	79.47	69.41	33.94	73.50	0.49	1.06

There are no food codes that can be used for stand-alone spice and seasoning mixes in NHANES. Therefore, in order to calculate the estimated daily intake of canola protein from its use in spice and seasoning mix, surrogate products were used to estimate its intake level.

The mean intakes of canola protein for all food uses (including spices and seasonings at 1 g/day - recommended serving), would be estimated to be 34.94 g/person/day or 0.50 g/kg body weight/day and the heavy consumer (90th percentile) EDI of 74.50 g/person/day or 1.06 g/kg body weight/day.

More details can be found in the complete report: Canola Protein (Raptein™90) Estimated Daily Intake Report attached as Appendix 3.

The Estimated Daily Intake (EDI) of canola protein (excluding spices and seasoning mixes) for heavy consumer (90th percentile) ranges from 3.67 g/kg body weight/day for population group: '1-2 ages' to 0.91 g/kg body weight/day for consumers age 20 and up.

The exposure of canola protein for heavy consumers is still much lower (approximately 4-to 12-fold lower) than the no-observed-adverse-effect level (NOAEL) values established for cruciferin-rich protein isolate of 11.24 g/kg body weight/day (male rats) and napin-rich protein isolate of 12.46 g/kg body weight/day (male rats) in 13-week toxicity studies (Mejia et al. 2009a, Mejia et al. 2009b). Therefore, these results support the product safety with the expected exposure.

The canola protein (RapteinTM90) will be added to food products as a protein substitute and therefore will not contribute any additional exposure to protein for consumers. Most of the protein intake in the population is, and will remain, as unprocessed foods, including meat, poultry, fish and legumes. Canola protein (RapteinTM90) is only an alternative source of protein and will not replace all dietary protein sources. Hence overall protein consumption is not expected to increase.

4. Self-limiting levels of use

The use of canola protein as a food ingredient is self-limiting due to its sensory and food-technological properties. Therefore, it is not expected to exceed the amounts proposed in Table 17.

5. Experience based on common use in food before 1958

The statutory basis for the conclusion of GRAS use of canola protein (rapeseed protein) in this document is not based on common use in foods before 1958. The GRAS determination is based on scientific procedures. NapiFeryn BioTech is unaware of any use of canola protein prior to 1958. Before the appearance of low erucic acid varieties in the 1970's, rapeseed was mainly used for the production of animal feed (FDA, 2017a).

6. Safety narrative

Literature review was conducted to assess available safety data on canola/rapeseed with particular reference to the topics of canola/rapeseed protein and canola/rapeseed potential anti-nutritional factors, between 2001 and 2021. Apart from general internet searching, databases (e.g. ScienceDirect and PubMed) and reviews from organizations such as the U.S. Food and Drug Administration, USDA, U.S. Dept. of Health and Human Services, EFSA, European Commission and Food Standards Australia New Zealand, were considered. Because canola has been commonly consumed and studied for many decades, pre-2000 data sources have also been included. The most important and relevant data are summarized in this dossier.

6.1. Summary

This GRAS notification concerns canola protein (RapteinTM90) obtained from the rapeseed (canola) press cake that is a by-product of rapeseed oil production. Rapeseed oil is produced by pressing the seeds of the rape plant from three varieties, *Brassica napus* and/or *Brassica juncea* and/or *Brassica rapa*. The rapeseed press cake is composed of crushed seeds. The canola protein is mainly composed of protein ($\geq 90\%$ dry matter). The intended use of canola protein is a variety of foods and beverages. The use levels may be ranging from 5% to 100%. Canola protein can be incorporated into food products as food ingredient (protein source), formulation aid, nutrient supplement, stabilizer, thickener and texturizer.

Nutrients in canola protein are expected to be absorbed, digested, metabolised and excreted identically to already authorised canola protein isolates. Literature reveals that rapeseed (canola) contains specific anti-nutritional factors, such as phenolic compounds, glucosinolates, erucic acid, phytic acid and protease inhibitors. These anti-nutritional factors are minimized due to the canola protein manufacturing process (which is according to cGMP). Analytical testing for these compounds in the final product revealed that they are either below the level of detection of the analytical method or in negligible levels far below a concentration of concern. Potential risks of food allergy and celiac disease were evaluated using a bioinformatics approach. The search revealed that RapteinTM90 proteins may elicit possible allergenic effects. The results also indicated that the proteins are unlikely to elicit celiac disease.

Based on the nature, source, and production process of canola protein, the product is not expected to be of toxicological concern and it is concluded to be safe for human consumption.

6.2. History of Use and Regulatory Approval

Canola protein isolate (and hydrolyzed canola protein isolate) has been recognized as GRAS by FDA for use as a food ingredient, protein source, thickener, water binder, emulsifier, gelling agent, foaming agent or texturizer. A summary of previous effective GRAS notices related to canola isolates is presented in Table 19 and one of them (FDA, 2011) was also approved as novel food ingredient by EFSA (2013). Other plant proteins have received FDA letters of no objection in recent years. Examples include potato protein isolates (FDA, 2013), pea protein (FDA, 2019b) and pea protein concentrates (FDA, 2016b; FDA, 2018), unhydrolyzed and hydrolyzed pea protein (FDA, 2016a), rice protein (FDA, 2016c), mung bean protein isolate (FDA, 2017b), fava bean protein isolate (FDA, 2020b).

Table 19. GRAS Notices for canola protein isolates

Year	GRAS No.	Title	Intended use	FDA's Letter
2010	327	Cruciferin-rich canola/rapeseed protein isolate and napin-rich canola/rapeseed protein isolate	Ingredient in dairy products, grain products, fruit and vegetable juices and beverages, salad dressings, meal replacements, and nutritional bars	FDA has no questions
2011	386	Canola protein isolate and hydrolyzed canola protein isolate	Ingredients in foods such as bakery products, snack foods, beverages, soups, dairy products, dry instant milkshake mixes and protein drinks, instant powdered nutritional beverages, processed meat and poultry products, vegetarian food products/meat analogues, and meal replacement and nutritional bars	FDA has no questions
2017	683	Canola protein isolate	Intended for use as a protein source, thickener, water binder, emulsifier, gelling agent, foaming agent or texturizer in prepared food (e.g. ready-to-eat meals, soups, pasta, snacks), meat	FDA has no questions

Year	GRAS No.	Title	Intended use	FDA's Letter
			analogues, bakery products (e.g. bread, rolls, doughnut, cookies, cakes, pies, batters, muffins, pasta, and cereal bars, cereals), protein enriched bakery products (e.g. bars, cookies), sports nutrition (e.g. protein drinks, energy bars), weight management (e.g. meal replacement, nutritional bars), beverages (e.g. fruit juices, soft drinks, juice blends), dairy products (e.g. desserts, ice cream, cheese, yogurt), medical nutrition (e.g. protein fortified drinks, ready-to-drink), elderly nutrition (e.g. foods specifically meant for the needs of elderly people) at use levels ranging from 5 to 30 percent.	

6.3. Current safe use

Rapeseed, *Brassica napus* subspecies, is a large winter or spring annual oil crop in the *Brassicaceae* family and is also known as rape and oilseed rape, and for a specific group of cultivars, “canola”. As sources of common vegetables in the diet, *Brassica* species, such as mustard, cabbage, broccoli, cauliflower and turnip, have been consumed for centuries. Many of them are currently recognized as having desirable health benefits.

Species of the *Brassicaceae* family are important agricultural crops world-wide. The seeds of rapeseed are rich in oil and contain considerable amounts of protein (20 to 35% of seed dry weight; Wanasundara, 2011).

Rapeseed has three major protein fractions, namely cruciferin, napin and oleosin. Their primary, secondary and tertiary structures differ significantly, thus they have different properties and functionalities. The dominant storage proteins, cruciferin and napin, are located in protein storage vacuoles of embryonic tissues of the seed (Wanasundara et al. 2011). The ratio of cruciferin to napin is between 0.6 to 2.0 depending on erucic acid and glucosinolate levels (Wanasundara, 2011). Oleosin is a structural protein that is found in the membrane of the organelle called oil body which is the oil storage of the seed (Wanasundara et al. 2016).

Rapeseed is a member of the family *Brassicaceae*. There are three main species namely *B. napus* (cultivated in Europe and Canada, having a black or reddish color), *B. rapa/campestris* (cultivated in Canada, having a black or yellow color), *B. juncea* (cultivated in Canada, having a yellow color). The main difference is in oil content (Daun et al 2011; Wanasundara, 2011). There are two types of rapeseed: industrial and edible (also called canola).

Oilseed rape was first cultivated in India some 4,000 years ago and about 2,000 years later it was introduced to China. For the first time in Europe agro-scale production of rapeseed was recorded in the thirteenth century. Interest in breeding intensified in Canada soon after the crop was introduced from Europe in the 1940s. The first efforts were concentrated on improving the agronomic properties and the oil content. In the late 1970s, the name canola was adopted in North America to distinguish low erucic acid plants from other types of rapeseed (Snowdon, Lühs and Friedt, 2006).

Low in erucic acid canola oil was recognized as GRAS in 1985 by the U.S. FDA (21 CFR §184.1555(c)), which is the edible oil obtained from *Brassica napus* or *Brassica campestris*. Later, this GRAS status was extended to canola oil from *Brassica juncea*.

The *Brassicaceae* family contain the same anti-nutritional factors as rape, namely, phytic acid and glucosinolates.

Therefore, there is long history of use as a human food ingredient source of rapeseeds, from which canola (rapeseed) oil and canola protein (Raptein™90) are obtained.

6.4. NapiFeryn BioTech's canola protein

Raptein™90 (canola/rapeseed protein) is produced according to cGMP by a multistep process starting from rapeseed cake, the by-product of rapeseed oil production. Rapeseed varieties used for the production of human edible vegetable oil are low in the anti-nutritional factors: erucic acid and glucosinolates.

The purified final product is a white to off-white powder, estimated to be stable at room temperature for more than 1 year (stability studies are being continued). See Sections 2.3 through 2.9 of the dossier.

Based on the manufacturing process information presented in Section 2.3, it is highly unlikely the process could adversely impact the safety of the product.

6.5. Contradictory information

NapiFeryn BioTech in consultation with Bioresco Ltd. critically evaluated the available literature (see Section 7) and summarized the findings in this GRAS dossier. Raw materials and canola protein (rapeseed protein) independent (non-consecutive) batches were tested for heavy metals, mycotoxins, pesticides as well as different anti-nutritional substances. All the information supports the safety of RapteinTM90.

6.6. Toxicology

Canola protein (rapeseed protein) is proposed for use as a source of protein in the human diet. Extensive published scientific studies have been conducted to evaluate the toxicity of rapeseed products. Table 20 shows the results of various safety studies on rapeseed cake, rapeseed meals, rapeseed protein concentrates and rapeseed protein isolates.

Table 20. Review of published safety data on rapeseed products

Study	Protein product/Rapeseed product	Conclusions	Reference
Feeding of rats	Rapeseed cake	Acceptable protein source, toxic glucosides were removed	Matet, et al., 1949
Feeding of rats	Mustard and rapeseed meals	Effect comparable to soy flour, toxic agent were removed	Goering, et al. 1960
Toxicological test on hens	Rapeseed meals	Thyrotoxic effect, increase in the weight of thyroid gland	Jackson, 1970
Toxicological test on rats	Lipid-protein rapeseed concentrate	Effect comparable to control, higher frequency of renal calculi	Agren, Eklund, 1972
Reproduction in rats	Detoxified rapeseed protein concentrate	Litter size reduced, after detoxification toxic components were still present	Eklund, 1973
Reproduction in rats	Rapeseed protein concentrate	Loss of appetite, decrease in weight gain	Eklund, 1975
Feeding of rats and dogs	Rapeseed protein flours	No observed changes, no negative effect on thyroid gland	Loew et al., 1976
Reproduction in rats	Rapeseed protein concentrate, zinc supplementation	Zinc supplementation relieves side effect of rapeseed protein concentrate diet such as anorexia, zinc deficiency possibly caused by phytates present in rapeseed protein concentrate	Shah et al., 1979; Jones, 1979
Feeding of rats	Rapeseed meal	Slight enlargement of the liver and kidneys	Thompson et al., 1982
Thyroid gland stimulating tests in rats	Rapeseed meal, purified rapeseed protein isolate (from rapeseed flour), rapeseed extraction residue from rapeseed meal	Serious toxic effect of rapeseed meal on thyroid gland, slight abnormalities in the functioning of the thyroid gland in case of purified rapeseed protein isolate, no toxic effect of rapeseed extraction residue	Kroll and Przybilski, 1991
Feeding of rats	Rapeseed protein isolate and rapeseed extraction residue	Changes in kidneys and liver, no changes indicating a toxic effect	Plass et al., 1992

Study	Protein product/Rapeseed product	Conclusions	Reference
Toxicity studies on rats	Cruciferin-rich canola protein isolate	Slight increase of thyroid weight; NOEL was defined as 10%, NOAEL as 20% (the highest fed level, equivalent to 11,24 g/kg BW/day for males and 14,11 g/kg BW/day for females.)	Mejia et al., 2009a
Toxicity studies on rats	Napin-rich canola protein isolate	Reduction in food consumption and body weight gains linked to low palatability of tested product; NOEL was defined as 5%, NOAEL as 20% (the highest fed level; equivalent to 12,46 g/kg BW/day for males and 14,95 g/kg BW/day for females)	Mejia et al., 2009b
Assessment of the impact on the metabolic syndrome in rats and humans	Rapeseed protein	Insulin resistance prevention, probably due to high cysteine and arginine content of the rapeseed protein	Hermier et al., 2010

Critical evaluation of these safety studies indicates that anti-nutritional substances present in rapeseed preparations may have possible adverse effects, especially glucosinolates and phytic acids or their derivatives. Eklund (1973, 1975) and Jones (1979) reported loss of appetite, apathy and decline in litter numbers in rat studies and linked it to the phytic acid presence in rapeseed protein meal and concentrate. Phytic acids can contribute to zinc chelation and zinc deficiency in animals leading to adverse effects. These adverse effects were not reported in pregnant rats supplemented with zinc (Shah et al. 1979). However, other causes of decreased consumption and weight loss are also possible and may be related to each other. For example, Mejia et al. (2009b) reported that in the case of napin-rich rapeseed isolates with 3.34% content of phytic acid, these effects may be due to low sensory characteristics.

Adverse effects of glucosinolates and their derivatives were reported after dietary feeding of rapeseed protein preparation in animals (Thompson et al. 1982). These compounds may contribute to animal weight loss and negative impact on thyroid gland functioning (Tripathi,

Mishra 2007). Linking such an impact with the presence of glucosinolates was confirmed by the researchers who reported the elimination of the negative effect on the thyroid gland after purification of rapeseed preparations from glucosinolates (Loew et al. 1976, Jones 1979, Kroll and Przybilski 1991).

The safety of canola/rapeseed protein isolates was examined in 13-week dietary feeding studies with rats. Two rapeseed preparations were tested: cruciferin-rich protein isolate - Puratein® (from ADM/Burcon) and napin-rich protein isolate - Supertein® (from ADM/Burcon) described as low in anti-nutritional substances. In both studies, 20 rats per sex per group were treated with protein-free diet enriched with 5%, 10% or 20% rapeseed isolate. The control group diet was enriched with 20% casein without vitamins. The following indicators were reported: body weight, food consumption, clinical symptoms, physical abnormalities, eye abnormalities and mortality. Ten animals per sex per group were subjected to clinical pathology tests and functional observational battery and locomotor activity investigations. Necropsy was performed on all rats after test termination. It was reported that rapeseed protein enriched diet had no impact on functional observation tests, clinical chemistry, urinalysis, hematology and histopathology (Mejia et al. 2009a and 2009b).

No impact on body weight and food consumption up to 20% of Puratein® (cruciferin-rich protein isolate) was reported. No-observed-effect level (NOEL) was determined as 10% w/w. The no-observed-adverse-effect level (NOAEL) was reported as 20% w/w, which is approximately equivalent to 11.24 g/kg body weight/day (male) and 14.11g/kg body weight/day (females) (Mejia et al. 2009a and 2009b).

In the case of Supertein™ (napin-rich protein isolate) supply, loss of body weight and food consumption were observed, but these effects were linked to a low palatability of rapeseed preparations. Since the lower body weight was associated with lower food intake, that is not considered as toxic effect. NOEL for Supertein® was determined as 5% w/w and NOAEL as 20% w/w, which corresponded to 12.46 g/kg body weight/day (males) and 14.95 g/kg body weight/day (females) (Mejia et al. 2009a and 2009b).

These 13-week toxicity studies demonstrate that rapeseed protein isolates are considered safe. NapiFeryn BioTech's canola protein (Raptein™90) is substantially a chemical equivalent of ADM/Burcon products subjected to toxicity tests. Therefore, these studies support the safety of Raptein™90. Raptein™90 composition includes the same main

proteins such as napins and cruciferins. The amino acid profiles are also comparable as shown in Table 2. Further, NapiFeryn BioTech product is characterized as low in anti-nutritional factors, similarly to ADM/Burcon products which is summarized in Table 22. The concentration of glucosinolates in Raptein™90 is below that of previously notified canola protein isolates cruciferin-rich Puratein® and napin-rich Supertein®.

6.7. Potential anti-nutritional factors

Rapeseeds/canola contain anti-nutritional factors, i. e. phenolic compounds, glucosinolates, erucic acid, phytic acid and protease inhibitors. Table 21 presents the levels of these compounds in five lots of canola protein (Raptein™90). Potential negative effects of their consumption are discussed below.

Table 21. Anti-nutritional factors in five lots of Raptein™90

Lot number	Erucic acid [%]	Total phenolics (expressed as sinapic acid) [%DM]	Phytic acid [%DM]	Glucosinolates [mmol/kg DM]	Trypsin Inhibitor Activity [mg/g]
R-03#57	<0.1 (<LOQ)	0.026	1.01	0.14	3.2
R-06#35	<0.1 (<LOQ)	0.001	1.04	<LOQ (<0.05 mmol/kg)	1.0
R-08#57	<0.1 (<LOQ)	0.004	1.25	<LOQ (<0.05 mmol/kg)	1.4
R-12#52	<0.1 (<LOQ)	0.008	0.99	<LOQ (<0.05 mmol/kg)	2.7
R-15#59	<0.1 (<LOQ)	0.002	0.79	<LOQ (<0.05 mmol/kg)	2.5

6.7.1. Erucic acid

Erucic acid (docosenoic acid), a 22-carbon monounsaturated fatty acid, is present in small amounts in the lipid component of cruciferous plants, including rapeseed, rapeseed cake and canola. Studies conducted on laboratory animals in the early 1970s reported that erucic acid appeared to have toxic effects on the heart at high enough doses. However, more recent

studies of erucic acid cast a doubt on the relevance of rat research to human health. Rats are unusual in their inability to process erucic acid. The symptoms in rats caused by a diet with high levels of erucic acid have not been reported in pigs, primates, or any other animals (Grice & Heggveit 1983; Food Standards Australia New Zealand, Australia NZ 2003).

Similar myocardial lipidosis has also been observed in rats exposed to vegetable fatty acids, suggesting that rats are less able to digest vegetable fats (containing erucic acid or not) than other animals (Neat, Thomassen & Osmundsen 1981).

Food Standards Australia New Zealand (2003) set a provisional tolerable daily intake (PTDI) for an average adult of about 500 mg/day of erucic acid (7.5 mg erucic acid/kg bw/day), calculated based on 'the level that is associated with increased myocardial lipidosis in nursing pigs' (Food Standards Australia New Zealand, (Australia NZ 2003)). 'There is a 120-fold safety margin between this level and the level that is associated with increased myocardial lipidosis in nursing pigs. The dietary exposure assessment concluded that the majority of exposure to erucic acid by the general population would come from the consumption of canola oil. The dietary intake of erucic acid by an individual consuming at the average level is well below the PTDI; therefore, there is no cause for concern in terms of public health and safety. However, the individual consuming at a high level has the potential to approach the PTDI. This would be particularly so if the level of erucic acid in colza oil were to exceed 2% of the total fatty acids' (Food Standards Australia New Zealand, (Australia NZ 2003)).

In addition, most animal studies did not show any negative effect despite the high concentrations or unnatural exposure. In one case, neonate piglets (have a limited ability to absorb these fats) had their normal sow's milk replaced solely with rapeseed oil for one hundred percent of their caloric needs (Food Standards Australia New Zealand, Australia NZ 2003).

Animal studies have shown that consumption of oils containing erucic acid over time can lead to a heart condition called myocardial lipidosis but this is temporary and reversible. Other effects reported in animals – including changes in the weight of the kidneys, liver, and skeletal muscle – occur at slightly higher doses (e.g. lowest observed adverse effect level of 0.02 g/kg bw per day was determined for liver toxicity in poultry). Based on this

information, experts on EFSA's Panel on Contaminants in the Food Chain (CONTAM Panel) determined a tolerable daily intake of 7 mg/kg bw per day.

The average consumption of erucic acid ranges from 0.3 to 4.4 mg/kg daily in different age groups. However, infants and other children may be exposed to up to 7.4 mg/kg per day. But experts noted that they likely overestimated this risk to account for the limitations of the available scientific knowledge. For most consumers, and particularly for toddlers (1-2 years old) and other children (3-10 years old), the main exposure to erucic acid in the diet are pastries, cakes and biscuits. For infants (0-12 months), infant formulae are the main contributors (EFSA Panel on Contaminants in the Food Chain (CONTAM)).

Food-grade rapeseed oil (also known as canola oil, low erucic acid rapeseed oil, rapeseed oil, and rapeseed canola-equivalent oil) is regulated to a maximum of 2% erucic acid by weight in the USA (U.S. Dept. of Health and Human Services 2021) and with special regulations for infant food. Until 2018 EU limit was 5% erucic acid in oil for food uses (and significantly lower for infant foodstuffs), but this was set in 1976 (Commission of the European Communities 1980) and is not consistent with other guidelines such as that in the Codex Alimentarius and the US FDA which both set a limit of 2% (21 CFR §184.1555). A new EU level of 2% was introduced in 2019 (Commission Regulation (EU) 2019/1870).

Rapeseed is, by design, low in erucic acid. FDA has defined a maximum level of 2% erucic acid for low erucic acid rapeseed oil to be used in food (21 CFR §184.1555). The fact that the canola protein (RapteinTM90) contains only a low amount of fat (<2%), means that any amount of erucic acid in these proteins would be negligible. Actual analyses of erucic acid in different production lots of the canola protein (RapteinTM90) revealed undetectable levels of this fatty acid (below limit of quantification: <0.1%). In summary, the erucic acid content in canola protein is insignificant and does not represent any toxicological concern. As shown in Table 21, only traces of erucic acid are found in RapteinTM90.

6.7.2. Total phenolics (expressed as sinapic acid)

Phenolic substances are common in plants and they are generally considered safe. Dietary exposure to them is substantial in human diet. Products rich in phenolic acids are: blueberry (1,881-2,112 mg/kg), cherry (290-1,280 mg/kg), pear (44-1,270 mg/kg), apple (2-258 mg/kg), orange (21-182 mg/kg), potato (100-190 mg/kg) and coffee (56 g/kg/dry

weight) (FDA, 2010). Phenolics are in general considered as safe and have beneficial antioxidant effects.

Phenolic acids are present in rapeseed/canola seeds and products (Naczek et al. 1998; Wanasundara et al. 2016; Khattab et al. 2010). The most prominent of these compounds are sinapic acid (3,5-Dimethoxy-4-hydroxycinnamic acid) and its derivative - sinapine (the choline ester of sinapic acid) (Naczek et al. 1998; Wanasundara et al. 2016; Khattab et al. 2010). Seeds are rich in phenolic compounds and most of them are not removed during the process of receiving oil (Khattab et al. 2010). Phenolic acids in various rapeseed products have been reported at levels from 1.1 to 1.8% (Naczek et al., 1998). Naturally occurring phenolics in rapeseed products do not cause toxicity, but have a negative impact on palatability. Phenolic acids are characterized by a bitter or astringent taste and also contribute to undesirable, dark color (Naczek et al. 1998; Wanasundara et al. 2016; Chmielewska et al., 2020).

Technology of production for NapiFeryn's canola protein (Raptein™90) minimizes the presence of these components and thus their unfavorable effect on the organoleptic properties of the products. Total content of phenolic compounds in canola protein (rapeseed protein) was determined using high performance liquid chromatography (HPLC) and analytical results of total phenolics expressed as sinapic acid are presented in Table 21. Concentration is 0.001-0.026 %DM.

This level is lower than the level of phenols in others canola/rapeseed protein isolates presented in GRAS Notifications reviewed by FDA (2010; 2011 and 2017a). In GRAS Notice No. 327 (FDA, 2010) total content of phenolic acids in Puratein® (cruciferin-rich protein isolate) and Supertein® (napin-rich protein isolate) was reported at 0.40% and 0.26%, respectively. Isolexx™ (canola protein isolate) contained 0.14% and Vitalexx™ (hydrolyzed canola protein isolate) possessed 0.39-0.48% of phenolics (FDA 2011). In GRAS Notice No. 683 (FDA, 2017) concentration of total phenolics in RPI (rapeseed protein isolate) was reported with a level of 600-900 ppm (0.06-0.09%). Comparison in Table 22.

6.7.3. Phytic acid

Phytic acid (or phytate when in the form of a salt) is a major storage form of phosphorus in many plant tissues, especially seeds and bran. For example, it accounts for 60 – 80%

of total phosphorus in mature cereal grains (NRC, 1973). It has strong chelating properties for essential minerals, such as iron, zinc and calcium, and therefore it can contribute to mineral deficiencies, by decreasing their bioavailability. It can also chelate vitamin B₃ (niacin), which could lead to vitamin B₃ deficiency (Reddy and Sathe, 2002) and create complexes with protein, which may interfere with protein utilization (Hídvégi and Lásztity, 2002). Some beneficial features of phytic acid including antioxidative, anticalcification, and potentially anticancerogenic properties have been reported (Schlemmer, et al. 2009).

Phytic acid/phytate is present in many commonly consumed plant-based foods. It is present in such cereal products as maize (0.72 – 2.22 %DM), wheat (0.39 – 1.35 %DM), wheat bran (2.1 – 7.3 %DM), rice (0.06 – 1.08 %DM), barley (0.38 – 1.16 %DM), sorghum (0.57 – 3.35 %DM), oat (0.42 – 1.16 %DM), rye (0.54 – 1.46 %DM), millet (0.18 – 1.67 %DM), triticale (0.50 – 1.89 %DM), and wild rice (2.20 %DM). It has also been found in legumes, such as kidney beans (0.61 – 2.38 %DM), broad beans (0.51 – 1.77 %DM), peas (0.22 – 1.22 %DM), dry cowpeas (0.37 – 2.90 %DM), chickpeas (0.28 – 1.60%), and lentils (0.27 – 1.51 %DM). The content of phytic acid/phytate in different types of nuts is reported to be 0.20 – 6.69 %DM in walnuts, 0.23 – 0.92 %DM in hazelnuts, 0.29 – 2.83 %DM in pistachios, 0.35 – 0.42 %DM and in almonds (Schlemmer, 2009). As for oilseeds, it has been presented that whole rapeseed contains 2.0 – 4.0% of phytic acid, defatted meal – 2.0 – 5.0%, protein concentrates – 5.0 – 7.5% and protein isolates – <1.0 – 9.8%, depending on the isolation method (Thompson, 1990). The content of phytic acid in soy protein isolate is reported to be 1.6 – 2.0% (Honig, Wolf and Rackis, 1984), but more recent studies indicate lower values of 0.49 – 0.84% (Hurrell, et al. 1992).

The level of phytic acid in canola protein (RapteinTM90) is not more than 1.5% dry matter, which is consistent with specification of rapeseed protein presented in Commission Implementing Decision of 1 July 2014 authorizing the placing on the market of rapeseed protein as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council (European Commission, 2014). The specific levels of phytic acid in different production batches of canola protein are found to be 0.79-1.25 %DM (Table 21).

Several GRAS Notices regarding canola/rapeseed proteins with reported phytic acid/phytate content have been previously submitted and obtained “no further questions letter” from the

FDA. Puratein® (cruciferin-rich canola protein isolate) and Supertein® (napin-rich canola protein isolate) have an average content of phytic acid of 0.32% and 3.34%, respectively (FDA, 2010). In GRAS Notice No. 386 (FDA, 2011), the level of phytic acid was specified to be <1.25 DM for Isolexx™ (canola protein isolate) and <1.0 %DM for Vitalexx™ (hydrolyzed canola protein isolate), with the average levels reported to be 0.85% for Isolexx™ and 0.5% for Vitalexx™. In GRAS Notice No. 683 (FDA, 2017) the content of phytate in rapeseed protein isolates was reported to be <0.14%.

Specified level (1.5 %DM) of phytic acid content is far below the 5.25% phytate content which caused adverse effects in rats fed rapeseed flours from early rapeseed cultivars (Anderson, et al. 1976). Also, Mejia et al. (2009b) performed 13-week toxicity studies with napin-rich protein isolate (Supertein®) with phytate content of 3.34% and showed that rats administered up to 20% napin-rich protein isolate (Supertein®) in their diet did not affect the plasma concentration of the trace mineral zinc. Accordingly, phytic acid content in canola protein (Raptein™90) is not expected to be of nutritional or toxicological concern.

6.7.4. Glucosinolates

Glucosinolates (GSLs) are sulphur- and nitrogen-containing molecules derived from amino acids. (Nugon-Baudon & Rabot 1994, Liu & Huang et al. 2019). GSLs occurs commonly in the Brassicales (Cruciales), order of flowering plants, which include rapeseed and other edible plants species like mustard, cabbage, capers, cauliflower or broccoli (Nugon-Baudon & Rabot 1994, Liu & Huang et al. 2019).

Glucosinolates concentrations have been reported for cabbage (39-70 mg GSL/100g), broccoli (47-121 mg GSL/100g), turnip (99-230 mg GSL/100g), cauliflower (14-208 mg GSL/100g) and radish (44- -252 mg GSL/100g) (FDA, 2010).

GSLs are innocuous. However, the enzyme myrosinase (thioglucoside glucohydrolase) present in plants, hydrolyzes the glucosinolates in case of injury of plant tissues during processing. Created unstable molecules are spontaneously transformed into potential toxic derivatives including isothiocyanates (e.g. allyl isothiocyanates), thiocyanates, nitriles, 5-vinyloxazolidine-2-thione, epithioalkanes, and oxazolidinethions (Nugon-Baudon and Rabot 1994, Tripathi & Mishra 2007, Von Der Haar et al. 2014, Kaiser et. al. 2021).

Similarly, wide range of GLSs breakdown products can be produced by intestinal microflora, which also produces myrosinase (Nugon-Baudon & Rabot 1994, Tripathi & Mishra 2007).

Glucosinolates and products of their degradation were reported to reduce palatability of products (Tripathi & Mishra 2007, Kaiser et. al. 2021). Deleterious effects of intake GSL and derivatives in animals include reduced feed ingestion, growth inhibition and also impaired thyroid function and damage of liver, kidneys and thyroid (Tripathi & Mishra 2007, Nugon-Baudon & Rabot 1994, Kaiser et. al. 2021).

The raw material used for the production of Raptein™90 is low in glucosinolates. In addition, production of canola protein developed by NapiFeryn BioTech minimizes the presence of these anti-nutritional components in the final product. Total content of glucosinolates in canola protein (Raptein™90) is presented in Table 21 and is at levels less than 0.15 mmol/kg. This level complies with specification presented in EU Commission Implementing Decision of 1 July 2014 authorizing the placing on the market of rapeseed protein as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council (not more than 1 mmol/kg).

The level of glucosinolates in other canola/rapeseed protein isolates presented in GRAS Notifications reviewed by FDA (2010, 2011, 2017a) is similar or higher than the content in the product of NapiFeryn BioTech. Rapeseed protein isolates (RPI) presented in GRAS Notice No. 683 (FDA, 2017) possessed <0.1 µmol/g glucosinolates. In GRAS Notice No. 386 (FDA, 2011) levels of glucosinolates was reported from 0.05 to 0.15 µmol/g for Isolexx™ (canola protein isolate) and from 0.14 to 0.23 µmol/g for Vitalexx™ (hydrolyzed canola protein isolate) respectively. Total content of glucosinolates in Puratein® (cruciferin-rich protein isolate) and Supertein® (napin-rich protein isolate) was reported at a level 1.09-2.53 µmol/g and 0.39-1.02 µmol/g, respectively (FDA, 2010).

6.7.5. Protease inhibitors

Protease inhibitors are present in many plants. Soybean based products have been the primary concern as a source of protease inhibitors (Rackis & Gumbmann, 1981), but other legumes also contain these compounds (Kadam & Smithard, 1987 and Carvalho, 1997). Presence of protease inhibitors in wheat and potatoes was reported by Habib and Fazili (2007). Protease inhibitors at high concentrations can limit nutritional value of a protein

(Rackis and Gumbmann, 1981). Heating proteins is known to inactivate the protein digestion inhibitors (Osborne & Mendel, 1917).

The *Brassica* genus of plants contains protease inhibitors (Ceciliani et al., 1994), therefore Raptein™90 may contain a protease inhibitor. Analysis of five samples of canola protein (Rapein™90) shows an average trypsin inhibitor activity of 2.2 mg/g. See Table 21.

Many of the food products proposed to contain Raptein™90 are heat treated, which will lead to some level of degradation of the protease inhibitor. Therefore, the potential for an excessive intake of the protease inhibitor is very low. But even if no degradation were to occur, if the highest use level, 60 g of Raptein™90/100 g of food as consumed for breakfast cereals and snack foods and 100 g of Raptein™90 for protein and nutritional powders (as is basis), is used as a model for exposure to the protease inhibitor, the average concentration would be 2.2 mg/g of Raptein™90. Converted to the protein content of the Raptein™90, the average concentration is 2.4 mg/g of protein. This concentration is lower than in other consumer goods such as soy milk - approximately 12.6 mg/g protein (Xiao et al., 2012), or tofu - 9,2 mg/g protein and fresh cabbage – 10.5 mg/g protein (Doell et al., 1981).

6.7.6. Comparison of anti-nutritional compounds in Raptein™90 to previously notified rapeseed protein isolates

The levels of anti-nutritional compounds in canola protein (Rapein™90) can be compared to rapeseed protein isolates that were previously notified to the FDA and obtained “no questions letter” and therefore GRAS status. It should be emphasized that the total phenolics content in Raptein™90 is estimated to be from 9 to even 55 times lower than the content in other canola proteins. Phytic acid concentration might be several times higher in the canola protein than in some of other protein products, but at the same time more than 3 times lower than in Supertein®. Total glucosinolates were found to be below LOQ in most of Raptein™90 samples or to be as low as in Isolexx™ and Vitalexx™. According to results from the external laboratory, erucic acid content in all canola protein lots was below LOQ, thus it is difficult to compare results. Protease inhibitors were measured only in RPI90 CanolaPro and reached about 10 times higher values than in Raptein™90. The summary of anti-nutritional factors is presented in Table 22.

Table 22. Anti-nutritional compounds in Raptein™90 and other rapeseed protein isolates

Anti-nutritional compound	Raptein™90	RPI90 CanolaPro (FDA, 2017)	Isolexx™ (FDA, 2011)	Vitalexx™ (FDA, 2011)	Puratein® (FDA, 2010)	Supertein® (FDA, 2010)
Erucic acid [%]	<0.1	< 0.005	0.002	0.003	< 0.0025	< 0.0025
Total phenolics [%]	0.008	0.07	0.14	0.44	0.40	0.26
Phytic acid [%]	0,97	< 0.14	0.85	0.5	0.32	3.34
Total glucosinolates [µmol/g]	<0.05 - 0.14	< 0.1	0.09	0.19	1.22	0.80
Trypsin inhibitor activity [mg/g]	2.2	21.1	not analyzed	not analyzed	not analyzed	not analyzed

6.7.7. Additional considerations

Canola protein batches (Lots Number R-08#57, R-03#57 and R-06#35) were sent for additional safety evaluation (potential risks of food allergy and celiac disease) to VTT Technical Research Centre of Finland. Bioinformatics searches were performed using AllergenOnline database and Celiac Database (CD). The sequence searches (using FARRP allergen protein database) indicated the possible allergenic effects of the Raptein™90 proteins. There was no match using the CD peptide dataset, thus these proteins are unlikely to elicit celiac disease. The complete description of results is provided in Appendix 4.

6.8. GRAS Panel evaluation

The GRAS panel convened at the request of NapiFeryn BioTech, independently and critically evaluated all data and information presented herein, and concluded that Raptein™90 canola protein (rapeseed protein) (containing ≥90% protein) is GRAS for use as an ingredient in human food, based on scientific procedures.

Appendix 7 includes the Consensus Statement Concerning the Generally Recognized as Safe (GRAS) Status of the Proposed Uses of NapiFeryn's Canola Protein (Rapeseed Protein) (Raptein™90).

6.9. Environmental safety

Proteins are built from amino acids. Amino acids are used by all forms of living organisms to build the proteins to their needs. Humans, animals and most microorganisms are capable of breaking down proteins into amino acids. Canola protein (Raptein™90) is composed of the same amino acids that are present in all plant, animal and human proteins.

Rapeseed press cake has been used as an ingredient in animal feed for over several decades in Europe and America or disposed of in landfills without adverse environmental consequences. Further, rapeseeds are used as a source of edible food grade oil. Therefore, the accidental release of rapeseed protein isolate into the environment is not expected to adversely affect the air, soil or water.

NapiFeryn canola protein (rapeseed protein), Raptein™90, is a GRAS substance and per 21 CFR §25.32, foods, food additives and color additives, including GRAS substances, are categorically excluded from the requirement to submit an environmental impact statement or an environmental assessment.

7. Supporting data and information

7.1. References

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**GRAS NOTICE OF
CANOLA PROTEIN (RAPESEED PROTEIN)**

Appendix 1

Reports of analysis for products and raw materials



Eurofins Polska Sp. z o.o.
Aleja Wojska Polskiego 90 A
PL-82 200 Malbork
POLAND
Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
www.eurofins.pl



AB 1334

NapiFeryn BioTech Sp. z o.o.
ul. Dubois 114/116
93-465 Łódź
POLSKA

Issue date 12.03.2021

Analytical report AR-21-ST-032437-01

Sample Code 720-2021-00044267

× Type of sample	Rapeseed cake 005-32419-2779477
× Sample sender	NapiFeryn BioTech Sp. z o.o.
× Prescriber	NapiFeryn BioTech Sp. z o.o.
× Purchase order date	23.02.2021
× Client Purchase order nr.	1
Reception date	26.02.2021
Transport by	Courier
Sample condition	acceptable
× Sampling Person	principal
× Type of sampling	to guarantee its representativeness
× Purpose of the testing	technological sample
Client sample code	A-00#58
× Batch number	1
× Packaging	aluminum bag
Number of tested samples	1
Start analysis	26.02.2021
End Analysis	09.03.2021

Results

J1003 Arsenic (As) (A)

Method §64 LFGB L 00.00-19/3, GF-AAS

Subcontracted to the accredited Eurofins laboratory Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Arsenic (As) <0,1 * mg/kg

JC0F3 Ochratoxin A (feed) (A)

Method DIN EN 14132 (2009-09), mod., IAC-LC-FLD

Subcontracted to the accredited Eurofins laboratory Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Ochratoxin A (OTA) <1 * µg/kg

JCAF3 Aflatoxin B1, B2, G1, G2 (A)

Method DIN EN 14123 (2008-03), mod., IAC-LC-FLD

Subcontracted to the accredited Eurofins laboratory Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Sum of all positive Aflatoxins <4 * µg/kg

Aflatoxin B1 <1 * µg/kg

Aflatoxin B2 <1 * µg/kg

Aflatoxin G1 <1 * µg/kg

Aflatoxin G2 <1 * µg/kg

JCHG2 Mercury (Hg) (A)

Method DIN EN ISO 15763 (2010), ICP-MS

Subcontracted to the accredited Eurofins laboratory Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Mercury [Hg] <0,005 * mg/kg

JCHRU Lead (Pb) (A)

Method DIN EN ISO 15763 (2010), ICP-MS/MS

Subcontracted to the accredited Eurofins laboratory Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Lead (Pb) 8,0 µg/kg ± 2

JCM04 Cadmium (Cd) (A)

Method DIN EN ISO 15763 (2010), ICP-MS

Subcontracted to the accredited Eurofins laboratory Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Cadmium (Cd) 0,072 mg/kg ± 0.015

JJ088 Fumonisin B1, B2, B3 (maize and products derived from maize) (A)

Method metoda własna, LC-MS/MS

Subcontracted to the accredited Eurofins laboratory Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Fumonisin B1 (FB1) <20 * µg/kg

Fumonisin B2 (FB2) <20 * µg/kg

Fumonisin B3 (FB3) <20 * µg/kg

Fumonisin sum (B1+B2) <40 * µg/kg

Fumonisin sum (B1+B2+B3) <60 * µg/kg

JJ0FF Fusarium toxins big (DON, ZON T2, HT2, NIV, ADON, DAS, FX) (A)

Method metoda własna, LC-MS/MS

Subcontracted to the accredited Eurofins laboratory Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Fusarenone X (FX) <20 * µg/kg

HT-2 Toxin <10 * µg/kg

Deoxynivalenol (Vomitoxin) <20 * µg/kg

Diacetoxyscirpenol (DAS) <10 * µg/kg

15-Acetyldeoxynivalenol (15-ADON) <20 * µg/kg

3-Acetyldeoxynivalenol (3-ADON) <20 * µg/kg

Nivalenol (NIV) <20 * µg/kg

sum T-2 HT-2 toxin <20 * µg/kg

T-2 Toxin <10 * µg/kg

Zearalenone (ZON) <10 * µg/kg

ST0DB Oil and fat content after hydrolysis (A)

Method Dz.U.UE L54/1 z dnia 26.2.2009 (WE) nr 152/2009, Gravimetry

oil and crude fat content after hydrolysis 12,56 % ± 6,28

ST0DC Water content (A)

Method Dz.U.UE L54/1 z dnia 26.2.2009 (WE) nr 152/2009, Gravimetry

Moisture 6,56 % ± 0,52

Dry Matter Content (FAA) 93,44 % ± 7,48

ST0DD Raw protein content (Nx6,25) (A)

Method ISO 1871:2009 [Duplic], Calculation

Crude protein (N*6,25) 31,44 % ± 9,43

Nitrogen - Kjeldahl 5,03 % ± 1,51

ST0Y8 Ash total content (A)

Method PN-A-79011-8:1998, Gravimetry

Ash 6,93 % ± 1,46

* = less than the limit of quantification

A = Method accredited

+/- Uncertainty of measurement presented as expanded uncertainty of measurement (95%; k=2). The uncertainty does not include the sampling. The result and its uncertainty refer to the analyzed sample.

x = Data provided by the customer



Authorized by: Monika Miętus
Zastępca Kierownika Pracowni Chemicznej



Approved by: Paulina Polak
Analytical Service Manager

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Eurofins Polska Sp. z o.o.
Aleja Wojska Polskiego 90 A
PL-82 200 Malbork
POLAND
Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
www.eurofins.pl



AB 1334

NapiFeryn BioTech Sp. z o.o.
ul. Dubois 114/116
93-465 Łódź
POLSKA

Issue date 13.05.2021

Analytical report AR-21-ST-061839-01

Sample Code 720-2021-00097067

× Type of sample	rapeseed cake
× Prescriber	005-32419-2791190
× Purchase order date	NapiFeryn BioTech Sp. z o.o.
× Reception date	04.05.2021
× Transport by	05.05.2021
× Sample condition	Courier
× Sampling Person	acceptable
× Type of sampling	principal
× Purpose of the testing	to guarantee its representativeness
× Client sample code	technological sample
× Packaging	A-00#58
× Number of tested samples	plastic container with a plastic lid
× Start analysis	1
× End Analysis	05.05.2021
	12.05.2021

Results

J1003 Arsenic (As) (A)

Method §64 LFGB L 00.00-19/3, GF-AAS

Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Arsenic (As) <0,1 * mg/kg

JCHG2 Mercury (Hg) (A)

Method DIN EN ISO 15763 (2010), ICP-MS

Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Mercury [Hg] <0,005 * mg/kg

JCHRU Lead (Pb) (A)

Method DIN EN ISO 15763 (2010), ICP-MS/MS

Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Lead (Pb) 8 µg/kg ± 2

JCM04 Cadmium (Cd) (A)

Method DIN EN ISO 15763 (2010), ICP-MS

Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Cadmium (Cd) 0,07 mg/kg ± 0.014

JJ0CT Aluminium (Al) (A)

Method EN ISO 17294-2-E29, ICP-MS

Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Aluminium 3,8 mg/kg ± 0.9

ST1MH Crude fiber content (A)

Method Dz.U.UEL54/1 z dn 26.2.2009(WE) nr152/2009 zał.III, Weight method

Crude fiber 11,42 % ± 2,28

* = less than the limit of quantification

A = Method accredited

+/- Uncertainty of measurement presented as expanded uncertainty of measurement (95%; k=2).

x = Data provided by the customer



Authorized by: Monika Miętus
Zastępca Kierownika Pracowni Chemicznej



Paulina Matusiewicz Approved by:
Analytical Service Manager

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Eurofins Polska Sp. z o.o.
 Aleja Wojska Polskiego 90 A
 PL-82 200 Malbork
 POLAND
 Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
 www.eurofins.pl

NapiFeryn BioTech Sp. z o.o.
 ul. Dubois 114/116
 93-465 Łódź
 POLSKA

Issue date 20.05.2021

Analytical report AR-21-ST-068376-01

Sample Code 720-2021-00096059

× Type of sample	DRC rapeseed cake 005-32419-2790756
× Prescriber	NapiFeryn BioTech Sp. z o.o.
× Purchase order date	29.04.2021
× Client Purchase order nr.	5
Reception date	04.05.2021
Transport by	Courier
Sample condition	acceptable
× Sampling Person	principal
× Type of sampling	to guarantee its representativeness
× Purpose of the testing	technological sample
Client sample code	A-00#58
× Batch number	1
× Packaging	foil bag
Number of tested samples	1
Start analysis	10.05.2021
End Analysis	20.05.2021

Results

AA602	Fluoride (A)		
Method	Wewnętrzna, Potentiometry		
	Eurofins Analytics France (Nantes), accreditation nr. 1-0287		
	Fluorine (F)	<20	mg/kg
ID4LQ	Isofetamid (#)		
Method	metoda własna, LC-MS/MS [Rec 80-120% not appl.]		
	Subcontracted to the Eurofins laboratory Eurofins Chemical Control S.r.l. (Cuneo)		
	Isofetamid	< 0,03	mg/kg
SF00S	Phosphane in food/feed (A)		
Method	Internal Method [DE Food], HS-GC-FPD		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Phosphane	<0,005	* mg/kg
SF277	Ethametsulfuron-methyl (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		

Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Ethametsulfuron-methyl	<0,01	* mg/kg
SF3SL Sulfurylfluoride in selected food (A)		
Method Internal Method [DE Food], HS-GC-MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Sulfuryl fluoride	<0,01	* mg/kg
SF3WU Penthiopyrad (A)		
Method § 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Penthiopyrad	<0,01	* mg/kg
SF7BR Saflufenacil (A)		
Method § 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Saflufenacil	<0,01	* mg/kg
SF7C9 Fluopyram (A)		
Method § 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Fluopyram	<0,01	* mg/kg
SF8TD Flumioxazin (A)		
Method § 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Flumioxazin	<0,01	* mg/kg
SF98A Methylbromide (A)		
Method Internal Method [DE Food], HS-GC-MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Methyl bromide	<0,1	* mg/kg
SFAZ3 Penflufen (A)		
Method § 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Penflufen	<0,01	* mg/kg
SFDMZ Benzovindiflupyr (A)		
Method § 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Benzovindiflupyr	<0,01	* mg/kg
SFDN1 Flupyradifurone (A)		
Method § 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Flupyradifurone	<0,01	* mg/kg
SFDN3 Sedaxane (A)		
Method § 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Sedaxane	<0,01	* mg/kg
SFDN4 Sulfoxaflor (A)		
Method § 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Sulfoxaflor	<0,01	* mg/kg
SFFC0 Determination of acidic herbicides in fatty food and organic food (A)		
Method § 64 LFGB L 13.04-5 : 2013-08, mod. [DE Food], LC-MS/MS [LC-MS/MS]		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Screened pesticides	<LOQ	
SFFED Pesticide screening using LC/MS/MS in fatty food (A)		
Method § 64 LFGB L 13.04-5 : 2013-08, mod. [DE Food], LC-MS/MS [LC-MS/MS]		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Screened pesticides	<LOQ	
SFFET Pesticide screening using GC/MS for food with high fat content (A)		

Method § 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], GC-MS [GC-MS]

Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00

Screened pesticides

<LOQ

SFFF0 Paraquat and diquat in food and feed (A)

Method Internal Method [DE Food], LC-MS/MS

Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00

Diquat <0,02 * mg/kg

Paraquat <0,02 * mg/kg

SFFW4 Mefentrifluconazole (A)

Method § 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS

Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00

Mefentrifluconazole <0,01 * mg/kg

SPGG4 Glyphosate, AMPA (Glyphosate metabolite) and Glufosinate (A)

Method Internal Method, SPG-14.158.3, LC-MS/MS

Eurofins Dr. Specht International GmbH, accreditation nr. D-PL-20881-01-00

Aminomethylphosphonic acid (AMPA) < 0,01 mg/kg

Glufosinate < 0,01 mg/kg

Glyphosate 0,081 mg/kg ± 0.0243

ZVPA7 Quantitative multi pesticide screening LC-MSMS (#)

Method Metodyka własna, LC-MS/MS

Subcontracted to the Eurofins laboratory Eurofins Lab Zeeuws-Vlaanderen

Carbendazim 0,010 mg/kg

Zoxamide <LOQ mg/kg

* = less than the limit of quantification

= Not accredited

A = Method accredited

+/- Uncertainty of measurement presented as expanded uncertainty of measurement (95%; k=2).

x = Data provided by the customer

Paulina Matusiewicz Approved by:
Analytical Service Manager

Scope of screened pesticides: SF00S

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Phosphane	7803-51-2	mg / kg	0,005	0,00	3-GC-FPD // LA-GC-109-

Scope of screened pesticides: SF277

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Ethametsulfuronmethyl	97780-06-8	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF7BR

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Saflufenacil	372137-35-4	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF7C9

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluopyram	658066-35-4	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF8TD

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Flumioxazin	103361-09-7	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SFFED

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
! Pesticides screened (all)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
2,4'-Formoxylidid	60397-77-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
3-Hydroxycarbofuran	16655-82-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
6-CHLOR-3-PHENYLPYRIDAZIN-4-OL (Pyridat	40020-01-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Abamectin	71751-41-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Acephate	30560-19-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Acetamiprid	135410-20-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Acetochlor	34256-82-1	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC
Alachlor	15972-60-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aldicarb	116-06-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aldicarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Aldicarb-sulfone	1646-88-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aldicarb-sulfoxide	1646-87-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Ametoctradin	865318-97-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Ametryn	834-12-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Amidosulfuron	120923-37-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aminocarb	2032-59-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Amitraz (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Amitraze	33089-61-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Ancymidol	12771-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Atrazin	1912-24-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Atrazin, desethyl-	6190-65-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Azaconazole	60207-31-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Azamethiphos	35575-96-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aziprotryn	4658-28-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Azoxystrobin	131860-33-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Benalaxyl	71626-11-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bendiocarb	22781-23-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Benfuracarb	82560-54-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Benodanil	15310-01-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Benomyl	17804-35-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bensulfuron methyl	83055-99-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Benthiavalicarb, isopropyl-	177406-68-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bitertanol	55179-31-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Boscalid	188425-85-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bromacil	314-40-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bromuconazole (Sum)		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bupirimate	41483-43-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Buprofezin	69327-76-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim	34681-10-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim-sulfoxide	34681-24-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Butoxycarboxim	34681-23-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC

Scope of screened pesticides: SFFED

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Buturon	3766-60-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cadusafos	95465-99-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Carbaryl	63-25-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Carbendazim	10605-21-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Carbendazim/Benomyl (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Carbofuran	1563-66-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Carbofuran (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Carbosulfan	55285-14-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Carboxin	5234-68-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
CHLORANTRANILIPROLE	500008-45-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorbromuron	13360-45-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorfluazuron	71422-67-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chloridazone	1698-60-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorotoluron	15545-48-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chloroxuron	1982-47-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorpropham	101-21-3	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Chlorsulfuron	64902-72-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cinidon-ethyl	142891-20-1	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Cinosulfuron	94593-91-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clethodim	99129-21-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clodinafop-propargyl	105512-06-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clofentezine	74115-24-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clomazone	81777-89-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clothianidin	210880-92-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyanazine	21725-46-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyazofamid	120116-88-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cymoxanil	57966-95-7	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Cyproconazole	94361-06-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyprodinil	121552-61-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyprofuram	69581-33-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyromazine	66215-27-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Demeton	8065-48-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Demeton-S-methyl	919-86-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Demeton-S-methyl-sulfone	17040-19-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Desmedipham	13684-56-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Desmetryn	1014-69-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diazinon	333-41-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dichlorvos	62-73-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diclobutrazol	75736-33-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diethofencarb	87130-20-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diethyltoluamide	134-62-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Difenoconazole	119446-68-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Difenoxuron	14214-32-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFFED

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Diflubenzuron	35367-38-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diflufenican	83164-33-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimefox	115-26-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimefuron	34205-21-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimethenamid including sum of isomers	87674-68-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimethoate	60-51-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimethomorph	110488-70-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimetilan	644-64-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimoxystrobin	149961-52-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dinotefuran	165252-70-0	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton	298-04-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton-sulfon	2497-06-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton-sulfoxide	2497-07-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diuron	330-54-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Emamectin (Sum)		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Epoxiconazole	133855-98-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb	29973-13-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb-sulfone	53380-23-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb-sulfoxide	53380-22-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethiprole	181587-01-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethofenprox	80844-07-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesat (Sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesat-2-keto		mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesate	26225-79-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethoprophos	13194-48-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Etoxazole	153233-91-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Famoxadone	131807-57-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamidone	161326-34-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos	22224-92-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos-sulfone	31972-44-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos-sulfoxide	31972-43-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenarimol	60168-88-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenazaquin	120928-09-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenbuconazole	114369-43-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenhexamid	126833-17-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenobucarb	3766-81-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenoxaprop-ethyl	66441-23-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenoxycarb	72490-01-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenpiclonil	74738-17-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenpropidin	67306-00-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenpropimorph	67564-91-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFED

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fenpyroximate	134098-61-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion	115-90-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-oxon-sulfone	6132-17-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-oxon-sulfoxide	6552-21-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-sulfone	14255-72-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion	55-38-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon	6552-12-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon-sulfone	14086-35-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon-sulfoxide	6552-13-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-sulfone	3761-42-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-sulfoxide	3761-41-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenuron	101-42-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flazasulfuron	104040-78-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flonicamid	158062-67-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Florasulam	145701-23-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fluazifop-P-butyl	79241-46-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fluazuron	86811-58-7	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Flucycloxuron	113036-88-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fludioxonil	131341-86-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flufenacet	142459-58-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flufenoxuron	101463-69-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fluometuron	2164-17-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flupicolid	239110-15-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flurochloridone	61213-25-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flurprimidol	56425-91-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flusilazole	85509-19-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flutriafol	76674-21-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
FM-6-1		mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Formetanate	22259-30-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fosthiazate	98886-44-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fuberidazole	3878-19-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Furathiocarb	65907-30-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Halofenozide	112226-61-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Haloxifop-Ethoxyethyl	87237-48-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Haloxifop-methyl	69806-40-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexaconazole	79983-71-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexaflumuron	86479-06-3	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Hexazinone	51235-04-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexythiazox	78587-05-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Imazalil (any ratio of constituent isomers)	35554-44-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Imibenconazol	86598-92-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Imidacloprid	138261-41-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFFED

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Indoxacarb (sum, R+S isomers)	144171-61-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Iodosulfuron methyl	185119-76-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Iprovalicarb	140923-17-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Isoprocab	2631-40-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Isoprothiolane	50512-35-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Isoproturon	34123-59-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Isoxaben	82558-50-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Isoxaflutole	141112-29-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Isoxathion	18854-01-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Lenacil	2164-08-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Linuron	330-55-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Lufenuron	103055-07-8	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LC [†]
Malaoxon	1634-78-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Malathion	121-75-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Malathion/Malaoxon (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC [†]
Mandipropamid	374726-62-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Mepanipyrim	110235-47-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metalaxyl	57837-19-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metamitron	41394-05-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metazachlor	67129-08-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metconazole	125116-23-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Methabenzthiazuron	18691-97-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Methacrifos	62610-77-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Methamidophos	10265-92-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Methidathion	950-37-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Methiocarb	2032-65-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Methiocarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC [†]
Methiocarb-sulfone	2179-25-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Methiocarb-sulfoxide	2635-10-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Methomyl	16752-77-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Methoprotrene	841-06-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Methoxyfenozid	161050-58-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metobromuron	3060-89-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metolachlor	51218-45-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metolcarb	1129-41-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metoxuron	19937-59-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metrafenone	220899-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metribuzin	21087-64-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Metsulfuron-methyl	74223-64-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Molinate	2212-67-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Monocrotophos	6923-22-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Monolinuron	1746-81-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Monuron	150-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]

Scope of screened pesticides: SFFED

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
N-2,4-dimethylphenyl-N-methylformamidin	33089-74-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Napropamide	15299-99-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Neburon	555-37-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Nicosulfuron	111991-09-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Novaluron	116714-46-6	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Nuarimol	63284-71-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ofurace	58810-48-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Omethoate	1113-02-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Orbencarb	34622-58-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Oxadixyl	77732-09-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Oxamyl	23135-22-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Oxamyl-oxime	30558-43-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Oxydemeton-methyl	301-12-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Oxydemeton-methyl (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Paclobutrazol	76738-62-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Paraoxon-ethyl	311-45-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Paraoxon-methyl	950-35-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Penconazole	66246-88-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pencycuron	66063-05-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pendimethalin	40487-42-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pentachlor	2307-68-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phenmedipham	13684-63-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phorate	298-02-2	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Phorate (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Phorate-sulfone	2588-04-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phorate-sulfoxide	2588-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phosphamidon	13171-21-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phoxim	14816-18-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Picoxystrobin	117428-22-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Piperonyl butoxide	51-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb	23103-98-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb, desmethyl-	30614-22-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb, desmethyl-formamido-	27218-04-8	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Primisulfuron-methyl	86209-51-0	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Prochloraz	67747-09-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Promecarb	2631-37-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Prometon	1610-18-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Prometryn	7287-19-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Propamocarb (sum)	24579-73-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Propargite	2312-35-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Propazin	139-40-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Propham	122-42-9	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Propiconazole (sum of isomers)	60207-90-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFFED

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Propoxur	114-26-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Propoxycarbazone	145026-81-9	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC [†]
Proquinazid	189278-12-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Prosulfocarb	52888-80-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Prosulfuron	94125-34-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pymetrozine	123312-89-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyraclostrobin	175013-18-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyraflufen-ethyl	129630-19-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrethrins	8003-34-7	mg / kg	0,100	0,00	S [LC-MS/MS] // LA-LC [†]
Pyridate	55512-33-9	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrimethanil	53112-28-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrimidifen	105779-78-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyriproxyfen	95737-68-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Quizalofop ethyl	76578-14-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Rabenzazole	40341-04-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Rimsulfuron	122931-48-0	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LC [†]
Rotenone	83-79-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Sebuthylazine	7286-69-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Sethoxydim	74051-80-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Silafluofen	105024-66-6	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC [†]
Simazine	122-34-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Simazine, desethyl-	1007-28-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Simeconazole	149508-90-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spinosad (Summe)	168316-95-8	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC [†]
Spirodiclofen	148477-71-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spiromesifen	283594-90-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spirotetramat	203313-25-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spiroxamine	118134-30-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Tebuconazol	107534-96-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Tebufenozide	112410-23-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Tebufenpyrad	119168-77-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Teflubenzuron	83121-18-0	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LC [†]
TEPP	107-49-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbacil	5902-51-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos	13071-79-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos-sulfon	56070-16-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos-sulfoxide	10548-10-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbuthylazine	5915-41-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbuthylazine, desethyl-	30125-63-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbutryn	886-50-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Tetraconazole	112281-77-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Thiabendazole	148-79-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Thiabendazole, 5-hydroxy-	948-71-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]

Scope of screened pesticides: SFED

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Thiacloprid	111988-49-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiamethoxam	153719-23-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiazafuron	25366-23-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thifensulfuron methyl	79277-27-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiodicarb	59669-26-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox	39196-18-4	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox-sulfone	39184-59-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox-sulfoxide	39184-27-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thionazin	297-97-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiophanate (-ethyl)	23564-06-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiophanate-methyl	23564-05-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Tiocabazil	36756-79-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triadimefon	43121-43-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triadimenol	55219-65-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triamiphos	1031-47-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triasulfuron	82097-50-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triazamate	112143-82-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triazophos	24017-47-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Tribenuronmethyl	101200-48-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trichlorfon	52-68-6	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Tricyclazol	41814-78-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Tridemorph	81412-43-3	mg / kg	0,100	0,00	S [LC-MS/MS] // LA-LCN
Trietazine	1912-26-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trifloxystrobin	141517-21-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trifloxysulfuron	145099-21-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflumizol/FM-6-1 (Sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Triflumizole	99387-89-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflumuron	64628-44-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflusulfuronmethyl	126535-15-7	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Triforine	26644-46-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trimethacarb, 3,4,5-	2686-99-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triticonazole	131983-72-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Uniconazole	83657-22-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion	2275-23-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion-sulfone	70898-34-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion-sulfoxide	20300-00-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Zoxamid	156052-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
! Pesticides screened (other)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFFET

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
! Pesticides screened (all)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹
2,4,5-T-Methylester	1928-37-6	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
2,4-D-Methylester	1928-38-7	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Acetochlor	34256-82-1	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Aclonifen	74070-46-5	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Acrinathrin	101007-06-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Alachlor	15972-60-8	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Aldrin	309-00-2	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Aldrin/ Dieldrin (Sum)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹
Allethrin	584-79-2	mg / kg	0,030	0,00	S [GC-MS] // LA-GCMS- ¹
Amidithion	919-76-6	mg / kg	0,030	0,00	S [GC-MS] // LA-GCMS- ¹
Atrazin	1912-24-9	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Azaconazole	60207-31-0	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Azinphos-ethyl	2642-71-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Azinphos-methyl	86-50-0	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Azoxystrobin	131860-33-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Benfluralin	1861-40-1	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Benoxacor	98730-04-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Benzoylprop-ethyl	22212-55-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Bifenox	42576-02-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Binapacryl	485-31-4	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Biphenrin	82657-04-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Bitertanol	55179-31-2	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Boscalid	188425-85-6	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Bromfenvinphos	33399-00-7	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Bromocyclene	1715-40-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Bromophos	2104-96-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Bromophos-ethyl	4824-78-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Bromopropylate	18181-80-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Buprofezin	69327-76-0	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Butachlor	23184-66-9	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Butamifos	36335-67-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Butralin	33629-47-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Cadusafos	95465-99-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Captan	133-06-2	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Carbophenothion	786-19-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Carbophenothion-methyl	953-17-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Carfentrazone-ethyl	128639-02-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Chinomethionate	2439-01-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorbenside	103-17-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chlordane (total)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹
Chlordane, cis-	5103-71-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Chlordane, oxy-	27304-13-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹

Scope of screened pesticides: SFFET

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Chlordane, trans-	5103-74-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
CHLORETHOXYFOS	54593-83-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorfenapyr	122453-73-0	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorfenprop-methyl	14437-17-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorfenson	80-33-1	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorfenvinphos	470-90-6	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Chloridazone	1698-60-8	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Chlormephos	24934-91-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chloroneb	2675-77-6	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Chloropropylate	5836-10-2	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorothalonil	1897-45-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorpyrifos (-ethyl)	2921-88-2	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorpyrifos-methyl	5598-13-0	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorthal-dimethyl	1861-32-1	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorthion	500-28-7	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Chlorthiophos	21923-23-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Chlozolinate	84332-86-5	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Cinidon-ethyl	142891-20-1	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Clodinafop-propargyl	105512-06-9	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Coumaphos	56-72-4	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Crotoxyphos	7700-17-6	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Cyanofenphos	13067-93-1	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Cyanophos	2636-26-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Cyfluthrin	68359-37-5	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Cyhalothrin, lambda- (includes Cyhalothrin, gamma	91465-08-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Cypermethrin	52315-07-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Cyphenothrine	39515-40-7	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Cyproconazole	94361-06-5	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
DDD, o,p-	53-19-0	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
DDE, o,p-	3424-82-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
DDT (sum p,p'-DDT+o,p'-DDT+p,p'-DDE+p,p		mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Deltamethrin	52918-63-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dialifos	10311-84-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Diallate	2303-16-4	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Diazinon	333-41-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dibrombenzophenon, p,p-	3988-03-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dicapthon	2463-84-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dichlobenil	1194-65-6	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Dichlofenthion	97-17-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Dichlofluanid	1085-98-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dichloran	99-30-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Diclofop-methyl	51338-27-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dicofol (sum)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹

Scope of screened pesticides: SFET

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Dicofol, o,p-	10606-46-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dicofol, p,p-	115-32-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dicrotophos	141-66-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dieltin	60-57-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Difenoconazole	119446-68-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Diffenican	83164-33-4	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dimethachlor	50563-36-5	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Dimethipin	55290-64-7	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Dimethoate	60-51-5	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Dimethomorph	110488-70-5	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Diniconazole	83657-24-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Dinitramine	29091-05-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Disulfoton	298-04-4	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Disulfoton-sulfon	2497-06-5	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Disulfoton-sulfoxide	2497-07-6	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Ditalimfos	5131-24-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Edifenphos	17109-49-8	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Endosulfan (total)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹
Endosulfan alpha	959-98-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Endosulfan sulfate	1031-07-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Endosulfan, beta-	33213-65-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Endrin	72-20-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
EPN	2104-64-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Epoxiconazole	133855-98-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Etaconazole	60207-93-4	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Ethalfuralin	55283-68-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Ethion	563-12-2	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Ethofumesate	26225-79-6	mg / kg	0,200	0,00	S [GC-MS] // LA-GCMS- ¹
Ethoprophos	13194-48-4	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Etridiazole	2593-15-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Etrimfos	38260-54-7	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Famophos	52-85-7	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Famoxadone	131807-57-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Fenamidone	161326-34-7	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Fenamiphos	22224-92-6	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Fenarimol	60168-88-9	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Fenbuconazole	114369-43-6	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Fenchlorazole-ethyl	103112-35-2	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Fenchlorphos	299-84-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fenhexamid	126833-17-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Fenitrothion	122-14-5	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fenoxaprop-ethyl	66441-23-4	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Fenpiclonil	74738-17-3	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹

Scope of screened pesticides: SFFET

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fenpropathrin	39515-41-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fenpropimorph	67564-91-4	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Fenson	80-38-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fensulfothion	115-90-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Fenvalerate (all isomers including esfenvalerate)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹
Fenvalerate (RR-/SS-Isomers)		mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fenvalerate (RS-/SR-Isomers)		mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fipronil	120068-37-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fipronil, desulfinyl-	111246-15-2	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fipronil+Sulfonmetab. MB46136 (Sum)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹
Fipronil-sulfide	120067-83-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fipronil-sulfone	120068-36-2	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Flamprop-isopropyl	52756-22-6	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Flamprop-methyl	52756-25-9	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Flonicamid	158062-67-0	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Fluazifop-butyl	69806-50-4	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Fluchloralin	33245-39-5	mg / kg	0,025	0,00	S [GC-MS] // LA-GCMS- ¹
Flucythrinate	70124-77-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Flufenoxuron	101463-69-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Flumetralin	62924-70-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fluopicolid	239110-15-7	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Fluorodifen	15457-05-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Fluotrimazole	31251-03-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Fluquinconazole	136426-54-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Flurenol-butyl	2314-09-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Flurochloridone	61213-25-0	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Flurtamone	96525-23-4	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Flusilazole	85509-19-9	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Fluvalinate (sum of isomers)	69409-94-5	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Folpet	133-07-3	mg / kg	0,025	0,00	S [GC-MS] // LA-GCMS- ¹
Fonofos	944-22-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Formothion	2540-82-1	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Genite	97-16-5	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Halfenprox	111872-58-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Haloxifop-Ethoxyethyl	87237-48-7	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Haloxifop-methyl	69806-40-2	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
HCH, alpha-	319-84-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
HCH, beta-	319-85-7	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
HCH, delta-	319-86-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
HCH, epsilon-	6108-10-7	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
HCH, gamma - Lindane	58-89-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Heptachlor	76-44-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Heptachlor (sum)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹

Scope of screened pesticides: SFET

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Heptachlor epoxide, cis-	1024-57-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Heptachlor epoxide, trans-	28044-83-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Heptenophos	23560-59-0	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Hexachlorobenzene (HCB)	118-74-1	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Hexaconazole	79983-71-4	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
INDANOFAN	133220-30-1	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Indoxacarb (sum, R+S isomers)	144171-61-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Iodofenphos	18181-70-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Ioxynil-Octanoat	3861-47-0	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Iprobenfos	26087-47-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Iprodione	36734-19-7	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Isazofos	42509-80-8	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Isobenzan	297-78-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Isocarbofos	24353-61-5	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Isodrin	465-73-6	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Isofenphos	25311-71-1	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Isofenphos-Methyl	99675-03-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Isomethiozin	57052-04-7	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Isopropalin	33820-53-0	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Isoxadifen-ethyl	163520-33-0	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Kresoxim-methyl	143390-89-0	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Lactofen	77501-63-4	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Leptophos	21609-90-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Lufenuron	103055-07-8	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Malaoxon	1634-78-2	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Malathion	121-75-5	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Malathion/Malaoxon (sum)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹
Mecarbam	2595-54-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Mephosfolan	950-10-7	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Merphos	150-50-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Metazachlor	67129-08-2	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Methacrifos	62610-77-9	mg / kg	0,025	0,00	S [GC-MS] // LA-GCMS- ¹
Methidathion	950-37-8	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Methoxychlor	72-43-5	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Metolachlor	51218-45-2	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Metrafenone	220899-03-6	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Metribuzin	21087-64-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Mirex	2385-85-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Molinate	2212-67-1	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Myclobutanil	88671-89-0	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Nitralin	4726-14-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Nitrapyrin	1929-82-4	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Nitrofen	1836-75-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹

Scope of screened pesticides: SFFET

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Nitrothal-isopropyl	10552-74-6	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Norflurazon	27314-13-2	mg / kg	0,025	0,00	S [GC-MS] // LA-GCMS- ¹
Nuarimol	63284-71-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Omethoate	1113-02-6	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Oxadiazon	19666-30-9	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Oxydemeton-methyl	301-12-2	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Oxyfluorfen	42874-03-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Paclobutrazol	76738-62-0	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Paraoxon-ethyl	311-45-5	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Paraoxon-methyl	950-35-6	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Parathion	56-38-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Parathion-methyl	298-00-0	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Parathion-methyl/Paraoxon-methyl (sum)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹
PCB 101	37680-73-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
PCB 138	35065-28-2	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
PCB 153	35065-27-1	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
PCB 180	35065-29-3	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
PCB 28	7012-37-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
PCB 52	35693-99-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Penconazole	66246-88-6	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Pendimethalin	40487-42-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Pentachloranisole	1825-21-4	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Pentachloroaniline	527-20-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Pentachlorobenzene	608-93-5	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Permethrin	52645-53-1	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Perthane	72-56-0	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Phenkapton	2275-14-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Phenothrin	26002-80-2	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Phenthoate	2597-03-7	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Phosalone	2310-17-0	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Phosfolan	947-02-4	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Phosmet	732-11-6	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Picolinafen	137641-05-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Picoxystrobin	117428-22-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Piperophos	24151-93-7	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Pirimiphos-ethyl	23505-41-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Pirimiphos-methyl	29232-93-7	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Plifenate	21757-82-4	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Prallethrin	23031-36-9	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Procymidone	32809-16-8	mg / kg	0,040	0,00	S [GC-MS] // LA-GCMS- ¹
Profenofos	41198-08-7	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Profluralin	26399-36-0	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Propachlor	1918-16-7	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹

Scope of screened pesticides: SFFET

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Propanil	709-98-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Propazin	139-40-2	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Propetamphos	31218-83-4	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Propiconazole (sum of isomers)	60207-90-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Propyzamid	23950-58-5	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Prothiofos	34643-46-4	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Prothoate	2275-18-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Pyraflufen-ethyl	129630-19-9	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Pyrazophos	13457-18-6	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Pyrethrins	8003-34-7	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Pyridaben	96489-71-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Pyridaphenthion	119-12-0	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Pyrifeno	88283-41-4	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Quinalphos	13593-03-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Quinoxifen	124495-18-7	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Quintozene	82-68-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Quintozene (sum)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹
Quizalofop ethyl	76578-14-8	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Resmethrin	10453-86-8	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
S 421	127-90-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Spiromesifen	283594-90-1	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Sulfotep	3689-24-5	mg / kg	0,025	0,00	S [GC-MS] // LA-GCMS- ¹
Sulprofos	35400-43-2	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Swep	1918-18-9	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Tebupirimfos	96182-53-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Tecnazene	117-18-0	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Tefluthrin	79538-32-2	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Temephos	3383-96-8	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Terbufos	13071-79-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Tetrachlorvinphos	22248-79-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Tetraconazole	112281-77-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Tetradifon	116-29-0	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Tetramethrin	7696-12-0	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Tetrasul	2227-13-6	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Tolclofos-methyl	57018-04-9	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Tolylfluanid	731-27-1	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Transfluthrin	118712-89-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Triadimefon	43121-43-3	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Triadimenol	55219-65-3	mg / kg	0,100	0,00	S [GC-MS] // LA-GCMS- ¹
Triallate	2303-17-5	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Triamiphos	1031-47-6	mg / kg	0,025	0,00	S [GC-MS] // LA-GCMS- ¹
Triazophos	24017-47-8	mg / kg	0,020	0,00	S [GC-MS] // LA-GCMS- ¹
Tribufos	78-48-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹

Scope of screened pesticides: SFFET

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Trichloronat	327-98-0	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Tridiphane	58138-08-2	mg / kg	0,050	0,00	S [GC-MS] // LA-GCMS- ¹
Trifloxystrobin	141517-21-7	mg / kg	0,010	0,00	S [GC-MS] // LA-GCMS- ¹
Trifluralin	1582-09-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
Vamidothion	2275-23-2	mg / kg	0,025	0,00	S [GC-MS] // LA-GCMS- ¹
Vinclozolin	50471-44-8	mg / kg	0,005	0,00	S [GC-MS] // LA-GCMS- ¹
! Pesticides screened (other)		mg / kg	-	0,00	S [GC-MS] // LA-GCMS- ¹

Scope of screened pesticides: SPGG4

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Aminomethylphosphonic acid (AMPA)	1066-51-9	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158
Glufosinate	51276-47-2	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158
Glyphosate	1071-83-6	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158

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Eurofins Polska Sp. z o.o.
 Aleja Wojska Polskiego 90 A
 PL-82 200 Malbork
 POLAND
 Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
 www.eurofins.pl

NapiFeryn BioTech Sp. z o.o.
 ul. Dubois 114/116
 93-465 Łódź
 POLSKA

Issue date 19.05.2021

Analytical report AR-21-ST-067702-01

Sample Code 720-2021-00100300

* Type of sample	rapeseed cake
* Prescriber	005-32419-2792210
* Purchase order date	NapiFeryn BioTech Sp. z o.o.
Reception date	10.05.2021
Transport by	11.05.2021
Sample condition	Customer
* Sampling Person	acceptable
* Type of sampling	principal
* Purpose of the testing	to guarantee its representativeness
Client sample code	technological sample
* Packaging	A-00#58
Number of tested samples	foil bag
Start analysis	1
End Analysis	12.05.2021
	14.05.2021

Results

LP130 Multimethod for pesticides in cereals (A)

Method NMKL 195 mod., LC-MS/MS
 Eurofins Food & Feed Testing Sweden (Lidköping), accreditation nr. 1977

Mecoprop	<0,010	mg/kg
2,4-DB	<0,010	mg/kg
2,4-Dimethylphenylformamide	<0,010	mg/kg
Abamectin	<0,050	mg/kg
Acephate	<0,010	mg/kg
Acetamiprid	<0,010	mg/kg
Acrinathrin	<0,010	mg/kg
Aldicarb	<0,010	mg/kg
Aldicarb-sulfone	<0,010	mg/kg
Aldicarb-sulfoxide	<0,010	mg/kg
Aldrin	<0,010	mg/kg
Ametoctradin	<0,010	mg/kg

Amitraz	<0,010	mg/kg
AMTT	<0,050	mg/kg
Azinphos-ethyl	<0,010	mg/kg
Azinphos-methyl	<0,010	mg/kg
Azoxystrobin	<0,010	mg/kg
Benalaxyl	<0,010	mg/kg
Benfuracarb	<0,010	mg/kg
Bentazone	<0,010	mg/kg
Benzovindiflupyr	<0,010	mg/kg
Bifenthrin	<0,010	mg/kg
Biphenyl	<0,010	mg/kg
Bitertanol	<0,010	mg/kg
Bixafen	<0,010	mg/kg
Boscalid	<0,010	mg/kg
Bromophos-ethyl	<0,010	mg/kg
Bromophos-methyl	<0,010	mg/kg
Bromopropylate	<0,010	mg/kg
Bromoxynil	<0,010	mg/kg
Bromuconazole	<0,010	mg/kg
Bupirimate	<0,010	mg/kg
Buprofezin	<0,010	mg/kg
BYI08330 enol-glucoside	<0,050	mg/kg
BYI08330-enol	<0,050	mg/kg
BYI08330-ketohydroxy	<0,050	mg/kg
BYI08330-monohydroxy	<0,050	mg/kg
Cadusafos	<0,010	mg/kg
Captan	<0,050	mg/kg
Carbaryl	<0,010	mg/kg
Carbendazim	<0,010	mg/kg
Carbofuran	<0,010	mg/kg
Carbofuran 3-OH	<0,010	mg/kg
Carbosulfan	<0,010	mg/kg
Carboxin	<0,010	mg/kg
Carfentrazone-ethyl	<0,010	mg/kg
Carpropamid	<0,010	mg/kg
Chlorantraniliprole	<0,010	mg/kg
Chlordane-alpha	<0,010	mg/kg
Chlordane-gamma	<0,010	mg/kg
Chlorfenapyr	<0,050	mg/kg
Chlorfenvinphos	<0,010	mg/kg
Chlorfluazuron	<0,010	mg/kg
Chlorobenzilate	<0,010	mg/kg
Chlorothalonil	<0,050	mg/kg
Chlorpropham (CIPC)	<0,050	mg/kg
Chlorpyrifos-ethyl	<0,010	mg/kg
Chlorpyrifos-methyl	<0,010	mg/kg
Cinmethylin	<0,010	mg/kg
Clofentezine	<0,010	mg/kg
Clomazone	<0,010	mg/kg
Clothianidin	<0,010	mg/kg
Cyanazine	<0,010	mg/kg

Cyazofamid	<0,010	mg/kg
Cyflufenamid	<0,010	mg/kg
Cyfluthrin	<0,010	mg/kg
Cyfluthrin beta	<0,010	mg/kg
Cyhalofop-butyl	<0,010	mg/kg
Cyhalothrin, lambda-	<0,010	mg/kg
Cymoxanil	<0,010	mg/kg
Cypermethrin	<0,010	mg/kg
Cypermethrin, alpha-	<0,010	mg/kg
Cyproconazole	<0,010	mg/kg
Cyprodinil	<0,010	mg/kg
D -2,4	<0,010	mg/kg
D, 2,4-Methylester	<0,010	mg/kg
DDD, p,p'-	<0,010	mg/kg
DDE, p,p'-	<0,010	mg/kg
DDT, o,p'-	<0,010	mg/kg
DDT, p,p'-	<0,010	mg/kg
Deltamethrin	<0,010	mg/kg
Demeton-S-methyl	<0,010	mg/kg
Demeton-S-methyl-sulfone	<0,010	mg/kg
Demeton-S-methyl-sulfoxide	<0,010	mg/kg
Diazinon	<0,010	mg/kg
Dicamba	<0,050	mg/kg
Dichlofluanid	<0,050	mg/kg
Dichloranilin-3,5	<0,010	mg/kg
Dichlorvos	<0,010	mg/kg
Dicloran	<0,010	mg/kg
Diclorprop	<0,010	mg/kg
Dicofol, p,p'-	<0,050	mg/kg
Dicrotophos	<0,010	mg/kg
Dieldrin	<0,010	mg/kg
Diethofencarb	<0,010	mg/kg
Difenoconazole	<0,010	mg/kg
Diffubenzuron	<0,010	mg/kg
Disulfenican	<0,010	mg/kg
Dimethoate	<0,010	mg/kg
Dimethomorph	<0,010	mg/kg
Diniconazole	<0,010	mg/kg
Dinocap	<0,010	mg/kg
Diphenylamine	<0,010	mg/kg
Disulfoton	<0,010	mg/kg
Disulfoton sulfone	<0,010	mg/kg
Disulfoton sulfoxide	<0,010	mg/kg
DMSA	<0,010	mg/kg
DMST	<0,010	mg/kg
Dodine	<0,050	mg/kg
Emamectin	<0,010	mg/kg
Endosulfan-alpha	<0,010	mg/kg
Endosulfan-beta	<0,010	mg/kg
Endosulfan-sulfate	<0,010	mg/kg
Endrin	<0,050	mg/kg

EPN	<0,010	mg/kg
Epoxiconazole	<0,010	mg/kg
Esfenvalerate	<0,010	mg/kg
Ethion	<0,010	mg/kg
Ethirimol	<0,010	mg/kg
Ethoprophos	<0,010	mg/kg
Etofenprox	<0,010	mg/kg
Etoxazole	<0,010	mg/kg
Etrimfos	<0,010	mg/kg
Famoxadone	<0,010	mg/kg
Fenamidone	<0,010	mg/kg
Fenamiphos	<0,010	mg/kg
Fenamiphos-sulfone	<0,010	mg/kg
Fenamiphos-sulfoxide	<0,010	mg/kg
Fenarimol	<0,010	mg/kg
Fenazaquin	<0,010	mg/kg
Fenbuconazole	<0,010	mg/kg
Fenchlorphos-oxon	<0,010	mg/kg
Fenhexamid	<0,010	mg/kg
Fenitrothion	<0,010	mg/kg
Fenoxaprop-P	<0,050	mg/kg
Fenoxycarb	<0,010	mg/kg
Fenpicoxamid	<0,010	mg/kg
Fenpropathrin	<0,010	mg/kg
Fenpropidin	<0,010	mg/kg
Fenpropimorph	<0,010	mg/kg
Fenpyrazamine	<0,010	mg/kg
Fenpyroximate	<0,010	mg/kg
Fenthion	<0,010	mg/kg
Fenthion sulfone	<0,010	mg/kg
Fenthion-oxon	<0,010	mg/kg
Fenthion-oxon-sulfoxide	<0,010	mg/kg
Fenthion-sulfoxide	<0,010	mg/kg
Fenthion-oxon-sulphone	<0,010	mg/kg
Fenvalerate	<0,010	mg/kg
Fipronil	<0,010	mg/kg
Fipronil-sulfone	<0,010	mg/kg
Flamprop	<0,010	mg/kg
Flonicamid	<0,010	mg/kg
Flonicamid (Sum)	<0,010	mg/kg
Florasulam	<0,010	mg/kg
Florpyrauxifen-benzyl	<0,010	mg/kg
Fluazifop	<0,010	mg/kg
Fluazifop-P-butyl	<0,010	mg/kg
Flubendiamide	<0,010	mg/kg
Fludioxonil	<0,010	mg/kg
Flufenacet	<0,010	mg/kg
Flufenoxuron	<0,010	mg/kg
Fluopicolid	<0,010	mg/kg
Fluopyram	<0,010	mg/kg
Fluoxastrobin	<0,010	mg/kg

Flupyradifurone	<0,010	mg/kg
Fluquinconazole	<0,010	mg/kg
Fluroxypyr	<0,010	mg/kg
Flusilazole	<0,010	mg/kg
Flutolanil	<0,010	mg/kg
Flutriafol	<0,010	mg/kg
Fluvalinate (sum of isomers)	<0,010	mg/kg
Fluxapyroxad	<0,010	mg/kg
Folpet	<0,050	mg/kg
Formothion	<0,050	mg/kg
Fosthiazate	<0,010	mg/kg
Fuberidazole	<0,010	mg/kg
Halauxifen	<0,010	mg/kg
Halauxifen-methyl	<0,010	mg/kg
Haloxypop	<0,010	mg/kg
Haloxypop-2-ethoxyethyl	<0,010	mg/kg
Haloxypop-R-methyl	<0,010	mg/kg
HCH, alpha-	<0,010	mg/kg
HCH, beta-	<0,010	mg/kg
HCH, delta-	<0,010	mg/kg
HCH, gamma- (Lindane)	<0,010	mg/kg
Heptachlor	<0,010	mg/kg
Heptachlorepoxyde, cis-	<0,050	mg/kg
Heptachlorepoxyde, trans-	<0,050	mg/kg
Hexachlorobenzene (HCB)	<0,010	mg/kg
Hexaconazole	<0,010	mg/kg
Hexythiazox	<0,010	mg/kg
Imazalil	<0,010	mg/kg
Imidacloprid	<0,010	mg/kg
Indoxacarb (sum, R+S isomers)	<0,010	mg/kg
Ioxynil	<0,010	mg/kg
Iprodione	<0,010	mg/kg
Iprovalicarb	<0,010	mg/kg
Isocarbofos	<0,050	mg/kg
Isofenphos	<0,010	mg/kg
Isofenphos-methyl	<0,010	mg/kg
Isoprocarb	<0,010	mg/kg
Isoprothiolane	<0,010	mg/kg
Isoproturon	<0,010	mg/kg
Isopyrazam	<0,010	mg/kg
Isotianil	<0,010	mg/kg
Isoxaben	<0,010	mg/kg
Isoxaflutole	<0,010	mg/kg
Kresoxim-methyl	<0,010	mg/kg
Linuron	<0,010	mg/kg
Lufenuron	<0,010	mg/kg
Malathion	<0,010	mg/kg
Malathion-O-analogue	<0,010	mg/kg
Mandestrobin	<0,010	mg/kg
Mandipropamid	<0,010	mg/kg
MCPA	<0,010	mg/kg

MCPA-metylester	<0,010	mg/kg
MCPB	<0,050	mg/kg
Mepanipyrim	<0,010	mg/kg
Metalaxyl	<0,010	mg/kg
Metalaxyl-M	<0,010	mg/kg
Metconazole	<0,010	mg/kg
Methacrifos	<0,010	mg/kg
Methamidophos	<0,010	mg/kg
Methidathion	<0,010	mg/kg
Methiocarb	<0,010	mg/kg
Methiocarb sulfoxide	<0,010	mg/kg
Methiocarb-sulfone	<0,010	mg/kg
Methomyl	<0,010	mg/kg
Methoprene	<0,050	mg/kg
Methoxychlor	<0,010	mg/kg
Methoxyfenozide	<0,010	mg/kg
Metobromuron	<0,010	mg/kg
Metolachlor	<0,010	mg/kg
Metominostrobin	<0,010	mg/kg
Metrafenone	<0,010	mg/kg
Metribuzin	<0,010	mg/kg
Milbemectin A3	<0,050	mg/kg
Milbemectin A4	<0,050	mg/kg
Molinate	<0,010	mg/kg
Monocrotophos	<0,010	mg/kg
Myclobutanil	<0,010	mg/kg
N-2,4-dimethylphenyl-N-methylformamidine	<0,010	mg/kg
Nitrofen	<0,010	mg/kg
Novaluron	<0,010	mg/kg
Omethoate	<0,010	mg/kg
Orthophenylphenol	<0,010	mg/kg
Orthosulfamuron	<0,010	mg/kg
Orysastrobin	<0,010	mg/kg
Oxadiazyl	<0,010	mg/kg
Oxadixyl	<0,010	mg/kg
Oxamyl	<0,010	mg/kg
Oxasulfuron	<0,010	mg/kg
Oxpoconazole	<0,010	mg/kg
Oxychlordan	<0,010	mg/kg
Oxyfluorfen	<0,010	mg/kg
Paclobutrazol	<0,010	mg/kg
Paraoxon-methyl	<0,010	mg/kg
Parathion	<0,010	mg/kg
Parathion-methyl	<0,010	mg/kg
Pefurazoate	<0,010	mg/kg
Penconazole	<0,010	mg/kg
Pencycuron	<0,010	mg/kg
Pendimethalin	<0,010	mg/kg
Penflufen	<0,010	mg/kg
Pentachloroaniline	<0,010	mg/kg
Penthiopyrad	<0,010	mg/kg

Permethrin	<0,010	mg/kg
Phenthoate	<0,010	mg/kg
Phosalone	<0,010	mg/kg
Phosmet	<0,010	mg/kg
Phosmet-oxon	<0,050	mg/kg
Phosphamidon	<0,010	mg/kg
Phoxim	<0,010	mg/kg
Picolinafen	<0,010	mg/kg
Pirimicarb	<0,010	mg/kg
Pirimicarb-desmethyl	<0,010	mg/kg
Pirimicarb-Desmethylformamido	<0,010	mg/kg
Pirimiphos-methyl	<0,010	mg/kg
Probenazole	<0,010	mg/kg
Prochloraz	<0,010	mg/kg
Procymidone	<0,010	mg/kg
Profenofos	<0,010	mg/kg
Propaquizafop	<0,010	mg/kg
Propargite	<0,010	mg/kg
Propiconazole	<0,010	mg/kg
Propoxur	<0,010	mg/kg
Propyzamide	<0,010	mg/kg
Proquinazid	<0,010	mg/kg
Prosulfocarb	<0,010	mg/kg
Prothioconazole	<0,050	mg/kg
Prothioconazole-desthio	<0,010	mg/kg
Prothiofos	<0,050	mg/kg
Pydiflumetofen	<0,010	mg/kg
Pyraclostrobin	<0,010	mg/kg
Pyrazophos	<0,010	mg/kg
Pyrethrins (total)	<0,050	mg/kg
Pyridaben	<0,010	mg/kg
Pyridalyl	<0,010	mg/kg
Pyridate	<0,010	mg/kg
Pyrimethanil	<0,010	mg/kg
Pyriofenone	<0,010	mg/kg
Pyriproxyfen	<0,010	mg/kg
Pyroxsulam	<0,010	mg/kg
Quinclorac	<0,050	mg/kg
Quinoclamine	<0,010	mg/kg
Quinoxifen	<0,010	mg/kg
Quintozene	<0,010	mg/kg
Quizalofop	<0,010	mg/kg
Quizalofop ethyl	<0,010	mg/kg
Resmethrins (I+II)	<0,010	mg/kg
Rotenone	<0,010	mg/kg
Sedaxane	<0,010	mg/kg
Spinetoram	<0,050	mg/kg
Spinosad (Spinosyn A+D)	<0,010	mg/kg
Spirodiclofen	<0,010	mg/kg
Spiromesifen	<0,010	mg/kg
Spirotetramat	<0,010	mg/kg

Spiroxamine	<0,010	mg/kg
Sulfoxaflor	<0,010	mg/kg
T -2,4,5	<0,010	mg/kg
Tebuconazole	<0,010	mg/kg
Tebufenozide	<0,010	mg/kg
Tebufenpyrad	<0,010	mg/kg
Techazene	<0,010	mg/kg
Teflubenzuron	<0,010	mg/kg
Tefluthrin	<0,010	mg/kg
Terbuthylazine	<0,010	mg/kg
Tetraconazole	<0,010	mg/kg
Tetradifon	<0,010	mg/kg
Tetramethrin	<0,010	mg/kg
TFNA	<0,010	mg/kg
TFNG	<0,010	mg/kg
Thiabendazole	<0,010	mg/kg
Thiacloprid	<0,010	mg/kg
Thiamethoxam	<0,010	mg/kg
Thiodicarb	<0,050	mg/kg
Thiometon	<0,010	mg/kg
Thiometon-sulfone	<0,010	mg/kg
Thiophanate-methyl	<0,010	mg/kg
Tiadinil	<0,010	mg/kg
Tolclofos-methyl	<0,010	mg/kg
Tolpyralate	<0,010	mg/kg
Tolyfluanid	<0,010	mg/kg
Triadimefon	<0,010	mg/kg
Triadimenol	<0,010	mg/kg
Tri-allate	<0,010	mg/kg
Triazophos	<0,010	mg/kg
Triazoxide	<0,010	mg/kg
Tribenuron methyl	<0,010	mg/kg
Tribromophenole 2,4,6	<0,010	mg/kg
Trichlorfon	<0,010	mg/kg
Trichlorophenole 2,4,6	<0,010	mg/kg
Triclopyr	<0,010	mg/kg
Tricyclazole	<0,010	mg/kg
Trifloxystrobin	<0,010	mg/kg
Triflumezopyrim	<0,010	mg/kg
Triflumuron	<0,010	mg/kg
Trifluralin	<0,010	mg/kg
Trinexapac (free acid)	<0,010	mg/kg
Trinexapac-ethyl	<0,010	mg/kg
Triticonazole	<0,010	mg/kg
Tritosulfuron	<0,010	mg/kg
Vinclozolin	<0,010	mg/kg
Zeta-Cypermethrin	<0,010	mg/kg
Zoxamide	<0,010	mg/kg

A = Method accredited

x = Data provided by the customer



Paulina Matusiewicz Approved by:
Analytical Service Manager

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REPORT OF ANALYSIS No. 109036/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) A-00#58 Rapeseed cake
Sample received:	2021-02-26	Lot No. - Expiration date: - Sample without any visible damages
Analysis completed (the date of performance of the laboratory activity):	2021-03-11	Order of 2021-02-25 The samples were delivered by Client
Report dated:	2021-03-11	

Test	Method	Unit	Result
* Enumeration of sulphate (IV)-reducing anaerobic bacteria	PN-ISO 15213:2005	cfu/g	<1,0x10 ¹
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	2,7x10 ³ [1,6x10 ³ ; 4,4x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
Detection of Clostridium perfringens	PN-EN ISO 7937:2005		not detected in 1 g
* Detection of Listeria monocytogenes in 25g	PN-EN ISO 11290-1:2017-07		not detected in 25 g
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Ewelina Kłosowska, Senior Specialist Analyst, Microbiology Laboratory Gdynia

Paulina Połosak, Expert Analyst, Microbiology Laboratory Gdynia

Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwasczyńska 180

The results relate to the analysed samples only. Unless otherwise specified given expanded measurement uncertainty was estimated for the coverage factor k=2 at 95% confidence level. Sampling uncertainty has not been taken into consideration. Unless otherwise specified when conformity is stated J.S. Hamilton Poland Sp. z o.o. applies the simple acceptance decision rule in accordance with ILAC-G8:09/2019. This Report cannot be reproduced partially without a prior written consent of J.S. Hamilton Poland Sp. z o.o. Responsibility of J.S. Hamilton Poland Sp. z o.o. is restricted exclusively to the results and statements presented in original copy of the Report. The service confirmed by this Report is subject to the General Terms and Conditions of Services of J.S. Hamilton Poland Sp. z o.o. published on www.hamilton.com.pl

* Test method accredited; # Test performed by external provider

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Form PO-10/02a of 20.01.2020

J.S. HAMILTON POLAND Sp. z o.o.
TESTING LABORATORY

ul. Chwasczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00



REPORT OF ANALYSIS No. 257340/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) A-00#58 rapeseed cake
Sample received:	2021-05-06	Sample without any visible damages Order of 2021-05-05 The samples were delivered by Client
Analysis completed (the date of performance of the laboratory activity):	2021-05-12	
Report dated:	2021-05-12	

Test	Method	Unit	Result
* Ash insoluble in 4N HCl	PN-A-88022:1959	%	0,22 ± 0,01
* Polycyclic aromatic hydrocarbons (PAHs) ¹⁾	PB-117/HPLC ed. VI of 20.01.2019		
Benzo(a)pyrene		µg/kg	< 0,2
Σ PAHs (Benzo(a)pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene)		µg/kg	below quantification limit

¹⁾ Limit of quantification for benzo(a)pyrene: 0,2 µg/kg, benz(a)anthracene: 0,5 µg/kg, chrysene: 0,8 µg/kg, benzo(b)fluoranthene: 0,5 µg/kg.

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
Żaneta Nowińska-Słowik, Expert Analyst, Liquid Chromatography Laboratory
Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

The results relate to the analysed samples only. Unless otherwise specified given expanded measurement uncertainty was estimated for the coverage factor k=2 at 95% confidence level. Sampling uncertainty has not been taken into consideration. Unless otherwise specified when conformity is stated J.S. Hamilton Poland Sp. z o.o. applies the simple acceptance decision rule in accordance with ILAC-G8:09/2019. This Report cannot be reproduced partially without a prior written consent of J.S. Hamilton Poland Sp. z o.o. Responsibility of J.S. Hamilton Poland Sp. z o.o. is restricted exclusively to the results and statements presented in original copy of the Report. The service confirmed by this Report is subject to the General Terms and Conditions of Services of J.S. Hamilton Poland Sp. z o.o. published on www.hamilton.com.pl

* Test method accredited; # Test performed by external provider

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Form PO-10/02a of 20.01.2020

J.S. HAMILTON POLAND Sp. z o.o.
TESTING LABORATORY

ul. Chwaszczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00



• ROTTERDAM • LIMA •

Analytical Report

Teutoburger Ölmühle GmbH

Attn: Frau Malwitz
Gutenbergstr. 16a
49479 Ibbenbüren
Germany

Reportnr.	: 1135482 version 1	Sampling Date	*: 28-Oct-2020
Sample Arrival Date	: 17-Nov-2020 09:39	Samplesize (kg)	: 0,634
ReportDate Version	: 10-Dec-2020 08:47		
Packing	: Plastic, ambient		

Sample information *

Disponent Number	: 12216	Product specification	: Raps-Kernkuchenfutter HP extrudiert
Sealed / Seal Code	: Yes / 4743076	Reference	: C-34554
Disp. Remark	: 27/16. F00002153 / 4260014350003		

* Information supplied by customer (TLR takes no responsibility for this information).

Composition Determination

Metal and other elements

Parameter	Result (as received)		
Nitrite (NO ₂)	< 10,0	mg/kg	R

Microscopic Determination

Common

Parameter	Result (as received)		
Bonefractions/Feathers (2009)	As far as microscopic can be determined, no parts found of landanimals or fish		Q R

Microbiological Determination

Common

Parameter	Result (as received)		
Salmonella	Not detected / 25g		Q R

Other Analysis

Common

Parameter	Result (as received)		
VTO (Vinyl-Thio-oxazolydone)	5,00	g/kg	O

Contaminations

EFS/TEF- calculation with moisture content 12%

Parameter	Result (as received)		
WHO (PCDD/PCDF) TEQ 88%dm.	0,130 ± 0,039 ng/kg		Q R
WHO (PCDD/F/PCB) TEQ 88%dm	0,256 ± 0,077 ng/kg		Q R
WHO (PCB)-TEQ 88%dm	0,126 ± 0,038 ng/kg		Q R
Sum ndl-PCB's (ICES-6) Up.bound	3,0 ± 0,9 µg/kg		Q R
Moisture tbv Dioxines	7,32 %		R

EFS/TEF- calculation wet weight

Parameter	Result (as received)		
WHO-PCDD/PCDF-TEQ Up.bound	0,137 ± 0,041 ng/kg		Q R
WHO-PCB- TEQ Up.bound	0,132 ± 0,040 ng/kg		Q R
WHO-PCDD/F-PCB-TEQ Up.boun	0,269 ± 0,081 ng/kg		Q R

Dioxins, dl PCBs, ndl PCBs

Parameter	Result (as received)		
PCB-77	< 1,0	ng/kg	Q R

Requested 17-Nov-2020 by Teutoburger Ölmühle GmbH
Analyses according to annex
Drs. ing. H. Janssens Director TLR International Laboratories

Page 1 of 5

• ROTTERDAM • LIMA •

Analytical Report

Reportnr. : **1135482 version 1**
Sample Arrival Date : 17-Nov-2020 09:39
ReportDate Version : **10-Dec-2020 08:47**
Packing : Plastic, ambient

Sampling Date : 28-Oct-2020
Samplesize (kg) : 0,634

PCB-81	< 1,0	ng/kg	Q	R
PCB-126	< 1,0	ng/kg	Q	R
PCB-169	< 1,0	ng/kg	Q	R
PCB-105	< 5	ng/kg	Q	R
PCB-114	< 10	ng/kg	Q	R
PCB-118	< 20	ng/kg	Q	R
PCB-123	< 5	ng/kg	Q	R
PCB-156	< 5	ng/kg	Q	R
PCB-157	< 5	ng/kg	Q	R
PCB-167	< 5	ng/kg	Q	R
PCB-189	< 5	ng/kg	Q	R
WHO (PCB-TEQ) Medium bound	0,07	± 0,02 ng/kg	Q	R
WHO (PCB-TEQ) Lower bound	< 0,00	ng/kg	Q	R

Dioxins

Parameter	Result (as received)			
2,3,7,8-TCDD	< 0,04	ng/kg	Q	R
1,2,3,7,8-PeCDD	< 0,04	ng/kg	Q	R
1,2,3,4,7,8-HxCDD	< 0,05	ng/kg	Q	R
1,2,3,6,7,8-HxCDD	< 0,05	ng/kg	Q	R
1,2,3,7,8,9-HxCDD	< 0,05	ng/kg	Q	R
1,2,3,4,6,7,8-HpCDD	< 0,05	ng/kg	Q	R
OCDD	< 2,0	ng/kg	Q	R
2,3,7,8-TCDF	< 0,04	ng/kg	Q	R
1,2,3,7,8-PeCDF	< 0,04	ng/kg	Q	R
2,3,4,7,8-PeCDF	< 0,04	ng/kg	Q	R
1,2,3,4,7,8-HxCDF	< 0,05	ng/kg	Q	R
1,2,3,6,7,8-HxCDF	< 0,05	ng/kg	Q	R
1,2,3,7,8,9-HxCDF	< 0,05	ng/kg	Q	R
2,3,4,6,7,8-HxCDF	< 0,05	ng/kg	Q	R
1,2,3,4,6,7,8-HpCDF	< 0,15	ng/kg	Q	R
1,2,3,4,7,8,9-HpCDF	< 0,15	ng/kg	Q	R
OCDF	< 2,0	ng/kg	Q	R
WHO-PCDD/PCDF-TEQ Med.boun	< 0,07	ng/kg	Q	R
WHO-PCDD/PCDF-TEQ Low.boun	< 0,001	ng/kg	Q	R
WHO-PCDD/F-PCB-TEQ Med.bou	0,135	± 0,040 ng/kg	Q	R
WHO-PCDD/F-PCB-TEQ Low.bou	< 0,001	ng/kg		R

Requested 17-Nov-2020 by Teutoburger Ölmühle GmbH
Analyses according to annex
Drs. ing. H. Janssens Director TLR International Laboratories

Page 2 of 5

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Analytical Report

Reportnr. : **1135482 version 1**
Sample Arrival Date : 17-Nov-2020 09:39
ReportDate Version : **10-Dec-2020 08:47**
Packing : Plastic, ambient

Sampling Date *: 28-Oct-2020
Samplesize (kg) : 0,634

Poly Chlorinated Biphenyls

Parameter	Result (as received)
PCB 28	< 0,50 µg/kg
PCB 52	< 0,50 µg/kg
PCB 101	< 0,50 µg/kg
PCB 138	< 0,50 µg/kg
PCB 153	< 0,50 µg/kg
PCB 180	< 0,50 µg/kg

Q R
Q R
Q R
Q R
Q R
Q R

Q - Analyses ISO 17025 accredited by RvA (ILAC)
R - Carried out by TLR International Laboratories, location Rotterdam
O - Outsourced

Requested 17-Nov-2020 by Teutoburger Ölmühle GmbH
Analyses according to annex
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Analytical Report

Reportnr.	: 1135482 version 1	Sampling Date	*: 28-Oct-2020
Sample Arrival Date	: 17-Nov-2020 09:39	Sample size (kg)	: 0,634
ReportDate Version	: 10-Dec-2020 08:47		
Packing	: Plastic, ambient		

ANNEX

Analyses

Salmonella standaard /25 g PCR

Start date

17-11-2020

Method Descriptions

Composition Determination

Metal and other elements

Method Description

Determination of nitrite (NO₂); Ion-exchange chromatography (IC)

Method Code

own method

Microscopic Determination

Common

Method Description

Determination of animalmeal; microscopic method *** in case of feed : According to EG 2009/152/EC

Method Code

Own method***

Microbiological Determination

Common

Method Description

Detection of Salmonella (GDS); [AFNOR TRA 02/12 - 01/09]

Method Code

Eq EN-ISO 6579-1

Contaminations

EFSA/TEF- calculation with moisture content 1

Method Description

Calculation feed of Toxic Equivalency Factors for dioxins and dioxinlike PCB's [WHO-2005]

Method Code

.

EFSA/TEF- calculation wet weight

Method Description

Calculation food of Toxic Equivalency Factors for dioxins and dioxinlike PCB's [WHO-2005]

Method Code

.

Determination of dioxines and dioxinlike PCB's in food and animal feedings stuff According to NEN-EN 16215 - EC 709/2014

--

Dioxins

Method Description

Determination of dioxines and dioxinlike PCB's in food and animal feedings stuff According to NEN-EN 16215 - EC 709/2014

Method Code

--

The mediumbound conc: For the calculation of the total TEQ, the values lower than LOQ, were regarded as the value of half of LOQ

.-

The lowerbound conc: For the calculation of the TEQ, the values lower than LOQ, were regarded as zero.

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Page 4 of 5

Analytical Report

Reportnr.	: 1135482 version 1	Sampling Date	*: 28-Oct-2020
Sample Arrival Date	: 17-Nov-2020 09:39	Samplesize (kg)	: 0,634
ReportDate Version	: 10-Dec-2020 08:47		
Packing	: Plastic, ambient		

Poly Chlorinated Biphenyls

Method Description

Determination of the content of PCBs; GPC-LC-GCMS method

Method Code

Own method

Abbreviations:

acc: in accordance with
eq: Equivalent to

Requested 17-Nov-2020 by Teutoburger Ölmühle GmbH
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Aleja Wojska Polskiego 90 A
PL-82 200 Malbork
POLAND
Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
www.eurofins.pl



AB 1334

NapiFeryn BioTech Sp. z o.o.
ul. Dubois 114/116
93-465 Łódź
POLSKA

Issue date 26.04.2021

Analytical report AR-21-ST-052210-01

Sample Code 720-2021-00079149

* Type of sample	rapeseed cake
* Prescriber	005-32419-2786211
* Purchase order date	NapiFeryn BioTech Sp. z o.o.
Reception date	08.04.2021
Transport by	12.04.2021
Sample condition	Courier
* Sampling Person	acceptable
* Type of sampling	principal
* Purpose of the testing	to guarantee its representativeness
Client sample code	technological sample
Number of tested samples	A-00#59
Start analysis	1
End Analysis	12.04.2021
	24.04.2021

Results

J1003	Arsenic (As) (A)			
Method	§64 LFGB L 00.00-19/3, GF-AAS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Arsenic (As)		0,2	mg/kg	± 0.09
JCHG2	Mercury (Hg) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Mercury [Hg]		<0,005	* mg/kg	
JCHRU	Lead (Pb) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS/MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Lead (Pb)		14	µg/kg	± 3
JCM04	Cadmium (Cd) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Cadmium (Cd)		0,11	mg/kg	± 0.021
JJ0CT	Aluminium (Al) (A)			

Method	EN ISO 17294-2-E29, ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Aluminium	19	mg/kg	± 3,7
ST0DB	Oil and fat content after hydrolysis (A)		
Method	Dz.U.UE L54/1 z dnia 26.2.2009 (WE) nr 152/2009, Gravimetry		
oil and crude fat content after hydrolysis	12,59	%	± 0,63
ST0DC	Water content (A)		
Method	Dz.U.UE L54/1 z dnia 26.2.2009 (WE) nr 152/2009, Gravimetry		
Dry Matter Content (FAA)	91,84	%	± 7,35
Moisture	8,16	%	± 0,65
ST0DD	Raw protein content (Nx6,25) (A)		
Method	ISO 1871:2009, Calculation		
Crude protein (N*6,25)	39,94	%	± 1,20
Nitrogen - Kjeldahl	6,39	%	± 0,19
ST0DE	Ash content, raw (A)		
Method	Dz.U.UE L54/1 z dnia 26.2.2009 (WE) nr 152/2009, Gravimetry		
Crude ash	6,64	%	± 0,93
ST1MH	Crude fiber content (A)		
Method	Dz.U.UEL54/1 z dn 26.2.2009(WE) nr152/2009 zał.III, Weight method		
Crude fiber	5,14	%	± 1,03

* = less than the limit of quantification

A = Method accredited

+/- Uncertainty of measurement presented as expanded uncertainty of measurement (95%; k=2). The uncertainty does not include the sampling. The result and its uncertainty refer to the analyzed sample.

x = Data provided by the customer

Authorized by: Monika Miętus
Zastępca Kierownika Pracowni Chemicznej

Paulina Matusiewicz Approved by:
Analytical Service Manager

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Eurofins Polska Sp. z o.o.
 Aleja Wojska Polskiego 90 A
 PL-82 200 Malbork
 POLAND
 Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
 www.eurofins.pl

NapiFeryn BioTech Sp. z o.o.
 ul. Dubois 114/116
 93-465 Łódź
 POLSKA

Issue date 20.05.2021

Analytical report AR-21-ST-068203-01

Sample Code 720-2021-00100301

× Type of sample	rapeseed cake
× Prescriber	005-32419-2791942
× Purchase order date	NapiFeryn BioTech Sp. z o.o.
Reception date	07.05.2021
Transport by	11.05.2021
Sample condition	Courier
× Sampling Person	acceptable
× Type of sampling	principal
× Purpose of the testing	to guarantee its representativeness
Client sample code	technological sample
× Packaging	A-00#59
Number of tested samples	foil bag
Start analysis	1
End Analysis	14.05.2021
	17.05.2021

Results

JC0F3 Ochratoxin A (feed) (A)

Method DIN EN 14132 (2009-09), mod., IAC-LC-FLD
 Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00
 Ochratoxin A (OTA) <1 * µg/kg

JCAF3 Aflatoxin B1, B2, G1, G2 (A)

Method DIN EN 14123 (2008-03), mod., IAC-LC-FLD
 Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00
 Aflatoxin B1 <1 * µg/kg
 Aflatoxin B2 <1 * µg/kg
 Aflatoxin G1 <1 * µg/kg
 Aflatoxin G2 <1 * µg/kg
 Sum of all positive Aflatoxins <4 * µg/kg

JJ088 Fumonisin B1, B2, B3 (maize and products derived from maize) (A)

Method metoda własna, LC-MS/MS
 Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Fumonisin B1 (FB1)	<20	* µg/kg
Fumonisin B2 (FB2)	<20	* µg/kg
Fumonisin B3 (FB3)	<20	* µg/kg
Fumonisin sum (B1+B2)	<40	* µg/kg
Fumonisin sum (B1+B2+B3)	<60	* µg/kg
JJ0FF Fusarium toxins big (DON, ZON T2, HT2, NIV, ADON, DAS, FX) (A)		
Method metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00		
15-Acetyldeoxynivalenol (15-ADON)	<20	* µg/kg
3-Acetyldeoxynivalenol (3-ADON)	<20	* µg/kg
Deoxynivalenol (Vomitoxin)	<20	* µg/kg
Diacetoxyscirpenol (DAS)	<10	* µg/kg
Fusarenone X (FX)	<20	* µg/kg
HT-2 Toxin	<10	* µg/kg
Nivalenol (NIV)	<20	* µg/kg
sum T-2 HT-2 toxin	<20	* µg/kg
T-2 Toxin	<10	* µg/kg
Zearalenone (ZON)	<10	* µg/kg
* = less than the limit of quantification		
A = Method accredited		
x = Data provided by the customer		

Paulina Matusiewicz Approved by:
Analytical Service Manager

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Eurofins Polska Sp. z o.o.
 Aleja Wojska Polskiego 90 A
 PL-82 200 Malbork
 POLAND
 Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
 www.eurofins.pl

NapiFeryn BioTech Sp. z o.o.
 ul. Dubois 114/116
 93-465 Łódź
 POLSKA

Issue date 31.05.2021

Analytical report AR-21-ST-074108-01

Sample Code 720-2021-00100297

* Type of sample	rapeseed cake
	005-32419-2792207
* Sample sender	NapiFeryn BioTech Sp. z o.o.
* Prescriber	NapiFeryn BioTech Sp. z o.o.
* Purchase order date	10.05.2021
Reception date	11.05.2021
Transport by	Customer
Sample condition	acceptable
* Sampling Person	principal
* Type of sampling	to guarantee its representativeness
* Purpose of the testing	technological sample
Client sample code	A-00#59
* Packaging	foil bag
Number of tested samples	1
Start analysis	12.05.2021
End Analysis	17.05.2021

Results

AA602	Fluoride (A)
Method	Wewnętrzna, Extraction with HCl 1N during 20 minutes and quantification by ionometry (specific fluoride electrode, Potentiometry)
Subcontracted to the accredited Eurofins laboratory Eurofins Analytics France (Nantes), accreditation nr. 1-0287	
Fluorine (F)	<20 mg/kg
ID4LQ	Isofetamid (A)
Method	metoda własna, LC-MS/MS [Rec 80-120% not appl.]
Subcontracted to the accredited Eurofins laboratory Eurofins Chemical Control S.r.l. (Cuneo), accreditation nr. 0490L	
Isofetamid	< 0,03 mg/kg
LP130	Multimethod for pesticides in cereals (A)
Method	NMKL 195 mod., The pesticides included in the multimethod are detected by GC-MSMS, GC-ECD and LC-MSMS, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins Food & Feed Testing Sweden (Lidköping), accreditation nr. 1977	
Fluoxastrobin	<0,010 mg/kg
Fluopyram	<0,010 mg/kg
Sulfoxaflor	<0,010 mg/kg
Fluopicolid	<0,010 mg/kg
Disulfoton	<0,010 mg/kg
Disulfoton sulfone	<0,010 mg/kg
Disulfoton sulfoxide	<0,010 mg/kg

DMSA	<0,010	mg/kg
DMST	<0,010	mg/kg
Dodine	<0,050	mg/kg
Enamectin	<0,010	mg/kg
Endosulfan-alpha	<0,010	mg/kg
Endosulfan-beta	<0,010	mg/kg
Endosulfan-sulfate	<0,010	mg/kg
Endrin	<0,050	mg/kg
EPN	<0,010	mg/kg
Epoxiconazole	<0,010	mg/kg
Esfenvalerate	<0,010	mg/kg
Halauxifen	<0,010	mg/kg
Halauxifen-methyl	<0,010	mg/kg
Haloxypop	<0,010	mg/kg
Haloxypop-2-ethoxyethyl	<0,010	mg/kg
Haloxypop-R-methyl	<0,010	mg/kg
HCH, alpha-	<0,010	mg/kg
HCH, beta-	<0,010	mg/kg
HCH, delta-	<0,010	mg/kg
HCH, gamma- (Lindane)	<0,010	mg/kg
Heptachlor	<0,010	mg/kg
Heptachlorepoxyde, cis-	<0,050	mg/kg
Heptachlorepoxyde, trans-	<0,050	mg/kg
Hexachlorobenzene (HCB)	<0,010	mg/kg
Hexaconazole	<0,010	mg/kg
Hexythiazox	<0,010	mg/kg
Imazalil	<0,010	mg/kg
Mecoprop	<0,010	mg/kg
2,4-DB	<0,010	mg/kg
2,4-Dimethylphenylformamide	<0,010	mg/kg
Abamectin	<0,050	mg/kg
Acephate	<0,010	mg/kg
Acetamiprid	<0,010	mg/kg
Acrinathrin	<0,010	mg/kg
Aldicarb	<0,010	mg/kg
Aldicarb-sulfone	<0,010	mg/kg
Aldicarb-sulfoxide	<0,010	mg/kg
Aldrin	<0,010	mg/kg
Ametoctradin	<0,010	mg/kg
Sedaxane	<0,010	mg/kg
Spinetoram	<0,050	mg/kg
Spinosad (Spinosyn A+D)	<0,010	mg/kg
Spirodiclofen	<0,010	mg/kg
Spiromesifen	<0,010	mg/kg
Spirotetramat	<0,010	mg/kg
Spiroxamine	<0,010	mg/kg
Ethion	<0,010	mg/kg
Ethirimol	<0,010	mg/kg
Ethoprophos	<0,010	mg/kg
Etofenprox	<0,010	mg/kg
Etoxazole	<0,010	mg/kg
Etrimfos	<0,010	mg/kg
Famoxadone	<0,010	mg/kg

Fenamidone	<0,010	mg/kg
Fenamiphos	<0,010	mg/kg
Fenamiphos-sulfone	<0,010	mg/kg
Fenamiphos-sulfoxide	<0,010	mg/kg
Fenarimol	<0,010	mg/kg
Fenazaquin	<0,010	mg/kg
Fenbuconazole	<0,010	mg/kg
Fipronil	<0,010	mg/kg
Fipronil-sulfone	<0,010	mg/kg
Flamprop	<0,010	mg/kg
Flonicamid	<0,010	mg/kg
Flonicamid (Sum)	<0,010	mg/kg
Florasulam	<0,010	mg/kg
Florpyrauxifen-benzyl	<0,010	mg/kg
Fluazifop	<0,010	mg/kg
Fluazifop-P-butyl	<0,010	mg/kg
Flubendiamide	<0,010	mg/kg
Fludioxonil	<0,010	mg/kg
Flufenacet	<0,010	mg/kg
Flufenoxuron	<0,010	mg/kg
Flupyradifurone	<0,010	mg/kg
Fluquinconazole	<0,010	mg/kg
Fluroxypyr	<0,010	mg/kg
Flusilazole	<0,010	mg/kg
Flutolanil	<0,010	mg/kg
Flutriafol	<0,010	mg/kg
Fluvalinate (sum of isomers)	<0,010	mg/kg
Fluxapyroxad	<0,010	mg/kg
Folpet	<0,050	mg/kg
Formothion	<0,050	mg/kg
Fosthiazate	<0,010	mg/kg
Fuberidazole	<0,010	mg/kg
Amitraz	<0,010	mg/kg
AMTT	<0,050	mg/kg
Azinphos-ethyl	<0,010	mg/kg
Azinphos-methyl	<0,010	mg/kg
Fenchlorphos-oxon	<0,010	mg/kg
Fenhexamid	<0,010	mg/kg
Fenitrothion	<0,010	mg/kg
Fenoxaprop-P	<0,050	mg/kg
Fenoxycarb	<0,010	mg/kg
Fenpicoxamid	<0,010	mg/kg
Fenpropathrin	<0,010	mg/kg
Fenpropidin	<0,010	mg/kg
Fenpropimorph	<0,010	mg/kg
Fenpyrazamine	<0,010	mg/kg
Fenpyroximate	<0,010	mg/kg
Fenthion	<0,010	mg/kg
Fenthion sulfone	<0,010	mg/kg
Fenthion-oxon	<0,010	mg/kg
Fenthion-oxon-sulfoxide	<0,010	mg/kg
Fenthion-sulfoxide	<0,010	mg/kg
Fenthion-oxon-sulphone	<0,010	mg/kg

Fenvalerate	<0,010	mg/kg
Azoxystrobin	<0,010	mg/kg
Benalaxyl	<0,010	mg/kg
Benfuracarb	<0,010	mg/kg
Bentazone	<0,010	mg/kg
Benzovindiflupyr	<0,010	mg/kg
Bifenthrin	<0,010	mg/kg
Biphenyl	<0,010	mg/kg
Bitertanol	<0,010	mg/kg
Bixafen	<0,010	mg/kg
Boscalid	<0,010	mg/kg
Bromophos-ethyl	<0,010	mg/kg
Bromophos-methyl	<0,010	mg/kg
Bromopropylate	<0,010	mg/kg
Bromoxynil	<0,010	mg/kg
Bromuconazole	<0,010	mg/kg
Bupirimate	<0,010	mg/kg
Buprofezin	<0,010	mg/kg
BYI08330 enol-glucoside	<0,050	mg/kg
BYI08330-enol	<0,050	mg/kg
T -2,4,5	<0,010	mg/kg
Tebuconazole	<0,010	mg/kg
Tebufenozide	<0,010	mg/kg
Tebufenpyrad	<0,010	mg/kg
Tecnazene	<0,010	mg/kg
Teflubenzuron	<0,010	mg/kg
Tefluthrin	<0,010	mg/kg
BYI08330-ketohydroxy	<0,050	mg/kg
BYI08330-monohydroxy	<0,050	mg/kg
Cadusafos	<0,010	mg/kg
Captan	<0,050	mg/kg
Carbaryl	<0,010	mg/kg
Carbendazim	<0,010	mg/kg
Carbofuran	<0,010	mg/kg
Carbofuran 3-OH	<0,010	mg/kg
Carbosulfan	<0,010	mg/kg
Carboxin	<0,010	mg/kg
Carfentrazone-ethyl	<0,010	mg/kg
Carpropamid	<0,010	mg/kg
Chlorantraniliprole	<0,010	mg/kg
Chlordane-alpha	<0,010	mg/kg
Chlordane-gamma	<0,010	mg/kg
Chlorfenapyr	<0,050	mg/kg
Chlorfenvinphos	<0,010	mg/kg
Chlorfluazuron	<0,010	mg/kg
Terbuthylazine	<0,010	mg/kg
Tetraconazole	<0,010	mg/kg
Tetradifon	<0,010	mg/kg
Tetramethrin	<0,010	mg/kg
TFNA	<0,010	mg/kg
TFNG	<0,010	mg/kg
Thiabendazole	<0,010	mg/kg
Thiacloprid	<0,010	mg/kg

Thiamethoxam	<0,010	mg/kg
Thiodicarb	<0,050	mg/kg
Thiometon	<0,010	mg/kg
Thiometon-sulfone	<0,010	mg/kg
Thiophanate-methyl	<0,010	mg/kg
Tiadinil	<0,010	mg/kg
Tolclofos-methyl	<0,010	mg/kg
Tolpyralate	<0,010	mg/kg
Tolyfluanid	<0,010	mg/kg
Triadimefon	<0,010	mg/kg
Triadimenol	<0,010	mg/kg
Tri-allate	<0,010	mg/kg
Triazophos	<0,010	mg/kg
Triazoxide	<0,010	mg/kg
Chlorobenzilate	<0,010	mg/kg
Chlorothalonil	<0,050	mg/kg
Chlorpropham (CIPC)	<0,050	mg/kg
Chlorpyrifos-ethyl	<0,010	mg/kg
Chlorpyrifos-methyl	<0,010	mg/kg
Cinmethylin	<0,010	mg/kg
Clofentezine	<0,010	mg/kg
Clomazone	<0,010	mg/kg
Clothianidin	<0,010	mg/kg
Cyanazine	<0,010	mg/kg
Cyazofamid	<0,010	mg/kg
Cyflufenamid	<0,010	mg/kg
Cyfluthrin	<0,010	mg/kg
Cyfluthrin beta	<0,010	mg/kg
Cyhalofop-butyl	<0,010	mg/kg
Cyhalothrin, lambda-	<0,010	mg/kg
Cymoxanil	<0,010	mg/kg
Cypermethrin	<0,010	mg/kg
Tribenuron methyl	<0,010	mg/kg
Tribromophenole 2,4,6	<0,010	mg/kg
Trichlorfon	<0,010	mg/kg
Trichlorophenole 2,4,6	<0,010	mg/kg
Triclopyr	<0,010	mg/kg
Tricyclazole	<0,010	mg/kg
Trifloxystrobin	<0,010	mg/kg
Triflumezopyrim	<0,010	mg/kg
Triflumuron	<0,010	mg/kg
Trifluralin	<0,010	mg/kg
Trinexapac (free acid)	<0,010	mg/kg
Trinexapac-ethyl	<0,010	mg/kg
Triticonazole	<0,010	mg/kg
Tritosulfuron	<0,010	mg/kg
Vinclozolin	<0,010	mg/kg
Zeta-Cypermethrin	<0,010	mg/kg
Cypermethrin, alpha-	<0,010	mg/kg
Cyproconazole	<0,010	mg/kg
Cyprodinil	<0,010	mg/kg
D -2,4	<0,010	mg/kg
D, 2,4-Methylester	<0,010	mg/kg

DDD, p,p'-	<0,010	mg/kg
DDE, p,p'-	<0,010	mg/kg
DDT, o,p'-	<0,010	mg/kg
DDT, p,p'-	<0,010	mg/kg
Deltamethrin	<0,010	mg/kg
Demeton-S-methyl	<0,010	mg/kg
Demeton-S-methyl-sulfone	<0,010	mg/kg
Demeton-S-methyl-sulfoxide	<0,010	mg/kg
Diazinon	<0,010	mg/kg
Dicamba	<0,050	mg/kg
Dichlofluanid	<0,050	mg/kg
Dichloranilin-3,5	<0,010	mg/kg
Dichlorvos	<0,010	mg/kg
Dicloran	<0,010	mg/kg
Zoxamide	<0,010	mg/kg
Diclorprop	<0,010	mg/kg
Dicofol, p,p'-	<0,050	mg/kg
Dicrotophos	<0,010	mg/kg
Dieldrin	<0,010	mg/kg
Diethofencarb	<0,010	mg/kg
Difenoconazole	<0,010	mg/kg
Diffubenzuron	<0,010	mg/kg
Diffufenican	<0,010	mg/kg
Dimethoate	<0,010	mg/kg
Dimethomorph	<0,010	mg/kg
Diniconazole	<0,010	mg/kg
Dinocap	<0,010	mg/kg
Diphenylamine	<0,010	mg/kg
Isoprocarb	<0,010	mg/kg
Isoprothiolane	<0,010	mg/kg
Isoproturon	<0,010	mg/kg
Isopyrazam	<0,010	mg/kg
Isotianil	<0,010	mg/kg
Isoxaben	<0,010	mg/kg
Isoxaflutole	<0,010	mg/kg
Kresoxim-methyl	<0,010	mg/kg
Linuron	<0,010	mg/kg
Lufenuron	<0,010	mg/kg
Malathion	<0,010	mg/kg
Malathion-O-analogue	<0,010	mg/kg
Mandestrobin	<0,010	mg/kg
Mandipropamid	<0,010	mg/kg
MCPA	<0,010	mg/kg
MCPA-metylester	<0,010	mg/kg
MCPB	<0,050	mg/kg
Imidacloprid	<0,010	mg/kg
Indoxacarb (sum, R+S isomers)	<0,010	mg/kg
Ioxynil	<0,010	mg/kg
Iprodione	<0,010	mg/kg
Iprovalicarb	<0,010	mg/kg
Isocarbofos	<0,050	mg/kg
Isufenphos	<0,010	mg/kg
Isufenphos-methyl	<0,010	mg/kg

Mepanipyrim	<0,010	mg/kg
Metalaxyl	<0,010	mg/kg
Metalaxyl-M	<0,010	mg/kg
Metconazole	<0,010	mg/kg
Methacrifos	<0,010	mg/kg
Methamidophos	<0,010	mg/kg
Methidathion	<0,010	mg/kg
Methiocarb	<0,010	mg/kg
Methiocarb sulfoxide	<0,010	mg/kg
Methiocarb-sulfone	<0,010	mg/kg
Methomyl	<0,010	mg/kg
Methoprene	<0,050	mg/kg
Methoxychlor	<0,010	mg/kg
Methoxyfenozide	<0,010	mg/kg
Metobromuron	<0,010	mg/kg
Metolachlor	<0,010	mg/kg
Metominostrobin	<0,010	mg/kg
Metrafenone	<0,010	mg/kg
Metribuzin	<0,010	mg/kg
Milbemectin A3	<0,050	mg/kg
Milbemectin A4	<0,050	mg/kg
Molinate	<0,010	mg/kg
Monocrotophos	<0,010	mg/kg
Myclobutanil	<0,010	mg/kg
N-2,4-dimethylphenyl-N-methylformamidine	<0,010	mg/kg
Nitrofen	<0,010	mg/kg
Novaluron	<0,010	mg/kg
Omethoate	<0,010	mg/kg
Orthophenylphenol	<0,010	mg/kg
Orthosulfamuron	<0,010	mg/kg
Orysastobin	<0,010	mg/kg
Oxadiargyl	<0,010	mg/kg
Oxadixyl	<0,010	mg/kg
Oxamyl	<0,010	mg/kg
Oxasulfuron	<0,010	mg/kg
Oxpoconazole	<0,010	mg/kg
Oxychlorane	<0,010	mg/kg
Oxyfluorfen	<0,010	mg/kg
Paclobutrazol	<0,010	mg/kg
Paraoxon-methyl	<0,010	mg/kg
Penthiopyrad	<0,010	mg/kg
Permethrin	<0,010	mg/kg
Phenthoate	<0,010	mg/kg
Phosalone	<0,010	mg/kg
Phosmet	<0,010	mg/kg
Phosmet-oxon	<0,050	mg/kg
Phosphamidon	<0,010	mg/kg
Phoxim	<0,010	mg/kg
Picolinafen	<0,010	mg/kg
Pirimicarb	<0,010	mg/kg
Pirimicarb-desmethyl	<0,010	mg/kg
Pirimicarb-Desmethylformamido	<0,010	mg/kg
Pirimiphos-methyl	<0,010	mg/kg

Probenazole	<0,010	mg/kg
Prochloraz	<0,010	mg/kg
Procymidone	<0,010	mg/kg
Profenofos	<0,010	mg/kg
Propaquizafop	<0,010	mg/kg
Propargite	<0,010	mg/kg
Propiconazole	<0,010	mg/kg
Propoxur	<0,010	mg/kg
Propyzamide	<0,010	mg/kg
Proquinazid	<0,010	mg/kg
Prosulfocarb	<0,010	mg/kg
Prothioconazole	<0,050	mg/kg
Prothioconazole-desthio	<0,010	mg/kg
Prothiofos	<0,050	mg/kg
Pydiflumetofen	<0,010	mg/kg
Pyraclostrobin	<0,010	mg/kg
Pyrazophos	<0,010	mg/kg
Pyrethrins (total)	<0,050	mg/kg
Pyridaben	<0,010	mg/kg
Pyridalyl	<0,010	mg/kg
Pyridate	<0,010	mg/kg
Pyrimethanil	<0,010	mg/kg
Pyriofenone	<0,010	mg/kg
Pyriproxyfen	<0,010	mg/kg
Pyroxsulam	<0,010	mg/kg
Quinclorac	<0,050	mg/kg
Quinoclamine	<0,010	mg/kg
Quinoxifen	<0,010	mg/kg
Quintozene	<0,010	mg/kg
Quizalofop	<0,010	mg/kg
Quizalofop ethyl	<0,010	mg/kg
Resmethrins (I+II)	<0,010	mg/kg
Rotenone	<0,010	mg/kg
Parathion	<0,010	mg/kg
Parathion-methyl	<0,010	mg/kg
Pefurazoate	<0,010	mg/kg
Penconazole	<0,010	mg/kg
Pencycuron	<0,010	mg/kg
Pendimethalin	<0,010	mg/kg
Penflufen	<0,010	mg/kg
Pentachloroaniline	<0,010	mg/kg
SF00S	Phosphane in food/feed (A)	
Method	Internal Method [DE Food], HS-GC-FPD	
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Phosphane	<0,005	* mg/kg
SF277	Ethametsulfuron-methyl (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS	
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Ethametsulfuron-methyl	<0,01	* mg/kg
SF3SL	Sulfurylfluoride in selected food (A)	
Method	Internal Method [DE Food], HS-GC-MS	
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Sulfuryl fluoride	<0,01	* mg/kg
SF3WU	Penthiopyrad (A)	

Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Penthiopyrad	<0,01 * mg/kg
SF7BR Saflufenacil (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Saflufenacil	<0,01 * mg/kg
SF7C9 Fluopyram (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Fluopyram	<0,01 * mg/kg
SF8TD Flumioxazin (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Flumioxazin	<0,01 * mg/kg
SF98A Methylbromide (A)	
Method	Internal Method [DE Food], HS-GC-MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Methyl bromide	<0,1 * mg/kg
SFAZ3 Penflufen (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Penflufen	<0,01 * mg/kg
SFDMZ Benzovindiflupyr (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Benzovindiflupyr	<0,01 * mg/kg
SFDN1 Flupyradifurone (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Flupyradifurone	<0,01 * mg/kg
SFDN3 Sedaxane (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Sedaxane	<0,01 * mg/kg
SFDN4 Sulfoxaflor (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Sulfoxaflor	<0,01 * mg/kg
SFFF0 Paraquat and diquat in food and feed (A)	
Method	Internal Method [DE Food], LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Diquat	<0,02 * mg/kg
Paraquat	<0,02 * mg/kg
SFFW4 Mefentrifluconazole (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	
Mefentrifluconazole	<0,01 * mg/kg
SFLA0 Pesticide Screening GC/MS in food with low water content (A)	
Method	§ 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], Method deviation: module E9; sample weight, extracting agent and temperature; fractionation; appl, GC-MS [GC-MS]
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00	

Screened pesticides	< LOQ	* mg/kg
SFLC0	Determination of acidic herbicides in dry and water rich food (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS [LC-MS/MS]	
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Screened pesticides	<LOQ	* mg/kg
SFLD0	Pesticide screening using LC/MS/MS in food (A)	
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], Method deviation: sample weight, miniaturization clean up, application also on feed, LC-MS/MS [LC-MS/MS]	
Subcontracted to the accredited Eurofins laboratory Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
Screened pesticides	<LOQ	* mg/kg
Other screened pesticides	<LOQ	
SPGG4	Glyphosate, AMPA (Glyphosate metabolite) and Glufosinate (A)	
Method	Internal Method, SPG-14.158.3, LC-MS/MS	
Subcontracted to the accredited Eurofins laboratory Eurofins Dr. Specht International GmbH, accreditation nr. D-PL-20881-01-00		
Aminomethylphosphonic acid (AMPA)	< 0,01	mg/kg
Glufosinate	< 0,01	mg/kg
Glyphosate	< 0,01	mg/kg
ZVPA7	Quantitative multi pesticide screening LC-MSMS (#)	
Method	Metodyka własna, LC-MS/MS	
Subcontracted to the Eurofins laboratory Eurofins Lab Zeeuws-Vlaanderen		
Thiophanate-methyl	0,15	mg/kg

* = less than the limit of quantification
= Not accredited
A = Method accredited
x = Data provided by the customer

Approved by: Paulina Matusiewicz
Analytical Service Manager

Scope of screened pesticides: SF00S

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Phosphane	7803-51-2	mg / kg	0,005	0,00	3-GC-FPD // LA-GC-109-

Scope of screened pesticides: SF277

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Ethametsulfuronmethyl	97780-06-8	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF7BR

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Saflufenacil	372137-35-4	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF7C9

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluopyram	658066-35-4	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF8TD

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Flumioxazin	103361-09-7	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
! Pesticides screened (all)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
2,4,5-T-Methylester	1928-37-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
2,4-D-Methylester	1928-38-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Acetochlor	34256-82-1	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Aclonifen	74070-46-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Acrinathrin	101007-06-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Alachlor	15972-60-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Aldrin	309-00-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Aldrin/ Dieldrin (Sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Allethrin	584-79-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Amidithion	919-76-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Atrazin	1912-24-9	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Azaconazole	60207-31-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Azinphos-ethyl	2642-71-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Azinphos-methyl	86-50-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Azoxystrobin	131860-33-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Benfluralin	1861-40-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Benoxacor	98730-04-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Benzoylprop-ethyl	22212-55-1	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Bifenox	42576-02-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Binapacryl	485-31-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Biphenrin	82657-04-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bitertanol	55179-31-2	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Boscalid	188425-85-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Bromfenvinphos	33399-00-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Bromocyclene	1715-40-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Bromophos	2104-96-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bromophos-ethyl	4824-78-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bromopropylate	18181-80-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Buprofezin	69327-76-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Butachlor	23184-66-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Butamifos	36335-67-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Butralin	33629-47-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cadusafos	95465-99-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Captan	133-06-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Carbophenothion	786-19-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Carbophenothion-methyl	953-17-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Carfentrazone-ethyl	128639-02-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chinomethionate	2439-01-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorbenside	103-17-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlordane (total)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Chlordane, cis-	5103-71-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlordane, oxy-	27304-13-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlordane, trans-	5103-74-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
CHLORETHOXYFOS	54593-83-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenapyr	122453-73-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenprop-methyl	14437-17-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorfenson	80-33-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenvinphos	470-90-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chloridazone	1698-60-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Chlormephos	24934-91-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorobenzilate	510-15-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chloroneb	2675-77-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Chloropropylate	5836-10-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorothalonil	1897-45-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorpyrifos (-ethyl)	2921-88-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorpyrifos-methyl	5598-13-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorthal-dimethyl	1861-32-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorthion	500-28-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorthiophos	21923-23-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlozolinate	84332-86-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cinidon-ethyl	142891-20-1	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Clodinafop-propargyl	105512-06-9	mg / kg	0,030	0,00	MS [GC-MS] // LA-GC-00
Coumaphos	56-72-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Crotoxyphos	7700-17-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyanofenphos	13067-93-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyanophos	2636-26-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyfluthrin	68359-37-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyhalothrin, lambda- (includes Cyhalothrin, gamma	91465-08-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cypermethrin	52315-07-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Cyphenothrine	39515-40-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyproconazole	94361-06-5	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
DDD, o,p-	53-19-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
DDE, o,p-	3424-82-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
DDT (sum p,p'-DDT+o,p'-DDT+p,p'-DDE+p,p		mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Deltamethrin	52918-63-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dialifos	10311-84-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diallate	2303-16-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diazinon	333-41-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dibrombenzophenon, p,p-	3988-03-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dicaphon	2463-84-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dichlobenil	1194-65-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Dichlofenthion	97-17-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dichlofluanid	1085-98-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dichloran	99-30-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dichlorvos	62-73-7	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Diclofop-methyl	51338-27-3	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Dicofol (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Dicofol, o,p-	10606-46-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dicofol, p,p-	115-32-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dicrotophos	141-66-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diieldrin	60-57-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Difenoconazole	119446-68-3	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Diflufenican	83164-33-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dimethachlor	50563-36-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dimethipin	55290-64-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dimethoate	60-51-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Dimethomorph	110488-70-5	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Diniconazole	83657-24-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dinitramine	29091-05-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Dinobuton	973-21-7	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Disulfoton	298-04-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Disulfoton-sulfon	2497-06-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Ditalimfos	5131-24-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Edifenphos	17109-49-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Endosulfan (total)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Endosulfan alpha	959-98-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endosulfan sulfate	1031-07-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endosulfan, beta-	33213-65-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endrin	72-20-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endrin ketone	53494-70-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
EPN	2104-64-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Epoxiconazole	133855-98-8	mg / kg	0,040	0,00	MS [GC-MS] // LA-GC-00
Etaconazole	60207-93-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Ethalfuralin	55283-68-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Ethion	563-12-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Ethofumesate	26225-79-6	mg / kg	0,200	0,00	MS [GC-MS] // LA-GC-00
Ethoprophos	13194-48-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Etridiazole	2593-15-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Etrimfos	38260-54-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Famophos	52-85-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Famoxadone	131807-57-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fenamidone	161326-34-7	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Fenamiphos	22224-92-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Fenarimol	60168-88-9	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenbuconazole	114369-43-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fenchlorazole-ethyl	103112-35-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fenchlorphos	299-84-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenhexamid	126833-17-8	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenitrothion	122-14-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenoxaprop-ethyl	66441-23-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenpiclonil	74738-17-3	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenpropathrin	39515-41-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenpropimorph	67564-91-4	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fenson	80-38-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fensulfothion	115-90-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (all isomers including esfenvalerate)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (RR-/SS-Isomers)		mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (RS-/SR-Isomers)		mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fipronil	120068-37-3	mg / kg	0,004	0,00	MS [GC-MS] // LA-GC-00
Fipronil, desulfinyl-	111246-15-2	mg / kg	0,004	0,00	MS [GC-MS] // LA-GC-00
Fipronil+Sulfonmetab. MB46136 (Sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Fipronil-sulfide	120067-83-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fipronil-sulfone	120068-36-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Flamprop-isopropyl	52756-22-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flamprop-methyl	52756-25-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flonicamid	158062-67-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fluazifop-butyl	69806-50-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fluchloralin	33245-39-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Flucythrinate	70124-77-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Flufenoxuron	101463-69-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flumetralin	62924-70-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fluopicolid	239110-15-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fluorodifen	15457-05-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fluotrimazole	31251-03-3	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fluquinconazole	136426-54-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flurenol-butyl	2314-09-2	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Flurochloridone	61213-25-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Flurtamone	96525-23-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flusilazole	85509-19-9	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fluvalinate (sum of isomers)	69409-94-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Folpet	133-07-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fonofos	944-22-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Formothion	2540-82-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Genite	97-16-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Halfenprox	111872-58-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Haloxypop-Ethoxyethyl	87237-48-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Haloxypop-methyl	69806-40-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
HCH, alpha-	319-84-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, beta-	319-85-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, delta-	319-86-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, epsilon-	6108-10-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, gamma - Lindane	58-89-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor	76-44-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Heptachlor epoxide, cis-	1024-57-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor epoxide, trans-	28044-83-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptenophos	23560-59-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Hexachlorobenzene (HCB)	118-74-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Hexaconazole	79983-71-4	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
INDANOFAN	133220-30-1	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Indoxacarb (sum, R+S isomers)	144171-61-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Iodofenphos	18181-70-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Ioxynil-Octanoat	3861-47-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Iprobenfos	26087-47-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Iprodione	36734-19-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isazofos	42509-80-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isobenzan	297-78-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isocarbofos	24353-61-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isodrin	465-73-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isofenphos	25311-71-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isofenphos-Methyl	99675-03-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isomethiozin	57052-04-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isopropalin	33820-53-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isoxadifen-ethyl	163520-33-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Kresoxim-methyl	143390-89-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Lactofen	77501-63-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Leptophos	21609-90-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Lufenuron	103055-07-8	mg / kg	0,012	0,00	MS [GC-MS] // LA-GC-00
Malaoxon	1634-78-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Malathion	121-75-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Malathion/Malaoxon (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Mecarbam	2595-54-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mephosfolan	950-10-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Merphos	150-50-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Metazachlor	67129-08-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Methacrifos	62610-77-9	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Methidathion	950-37-8	mg / kg	0,012	0,00	MS [GC-MS] // LA-GC-00
Methoxychlor	72-43-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Metolachlor	51218-45-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Metrafenone	220899-03-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Metribuzin	21087-64-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mevinphos	7786-34-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mirex	2385-85-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Molinate	2212-67-1	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Myclobutanil	88671-89-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Nitralin	4726-14-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Nitrapyrin	1929-82-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Nitrofen	1836-75-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Nitrothal-isopropyl	10552-74-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Norflurazon	27314-13-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Nuarimol	63284-71-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Omethoate	1113-02-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Oxadiazon	19666-30-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Oxydemeton-methyl	301-12-2	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Oxyfluorfen	42874-03-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Paclobutrazol	76738-62-0	mg / kg	0,040	0,00	MS [GC-MS] // LA-GC-00
Paraoxon-ethyl	311-45-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Paraoxon-methyl	950-35-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Parathion	56-38-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Parathion-methyl	298-00-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Parathion-methyl/Paraoxon-methyl (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Penconazole	66246-88-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pendimethalin	40487-42-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloranisole	1825-21-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloroaniline	527-20-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pentachlorobenzene	608-93-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachlorothioanisole	1825-19-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Permethrin	52645-53-1	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Perthane	72-56-0	mg / kg	0,200	0,00	MS [GC-MS] // LA-GC-00
Phenkapton	2275-14-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phenothrin	26002-80-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phenthoate	2597-03-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosalone	2310-17-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosfolan	947-02-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosmet	732-11-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Picolinafen	137641-05-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Picoxystrobin	117428-22-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Piperophos	24151-93-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pirimiphos-ethyl	23505-41-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Pirimiphos-methyl	29232-93-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Plifenate	21757-82-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Prallethrin	23031-36-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Procymidone	32809-16-8	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
Profenofos	41198-08-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Profluralin	26399-36-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Propachlor	1918-16-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Propanil	709-98-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Propazin	139-40-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Propetamphos	31218-83-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Propiconazole (sum of isomers)	60207-90-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Propyzamid	23950-58-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Prothiofos	34643-46-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Prothoate	2275-18-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyraclufos	89784-60-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyraflufen-ethyl	129630-19-9	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pyrazophos	13457-18-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyrethrins	8003-34-7	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pyridaben	96489-71-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pyridaphenthion	119-12-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyrifeno	88283-41-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Quinalphos	13593-03-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Quinoxifen	124495-18-7	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
Quintozene	82-68-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Quintozene (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Quizalofop ethyl	76578-14-8	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Resmethrin	10453-86-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
S 421	127-90-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Spiromesifen	283594-90-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Sulfotep	3689-24-5	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Sulprofos	35400-43-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Swep	1918-18-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tebupirimfos	96182-53-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tecnazene	117-18-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tefluthrin	79538-32-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Temephos	3383-96-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Terbufos	13071-79-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetrachlorvinphos	22248-79-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetraconazole	112281-77-3	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Tetradifon	116-29-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetramethrin	7696-12-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tetrasul	2227-13-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tolclofos-methyl	57018-04-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tolylfluanid	731-27-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Transfluthrin	118712-89-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triadimefon	43121-43-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triadimenol	55219-65-3	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Triallate	2303-17-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triamiphos	1031-47-6	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Triazophos	24017-47-8	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Tribufos	78-48-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Trichloronat	327-98-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tridiphane	58138-08-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Trifloxystrobin	141517-21-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Trifluralin	1582-09-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Vamidothion	2275-23-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Vinclozolin	50471-44-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
! Pesticides screened (other)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
! Pesticides screened (all)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
2,4'-Formoxylidid	60397-77-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
3-Hydroxycarbofuran	16655-82-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
6-CHLOR-3-PHENYLPYRIDAZIN-4-OL (Pyridat	40020-01-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Abamectin	71751-41-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Acephate	30560-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Acetamiprid	135410-20-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Acetochlor	34256-82-1	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Alachlor	15972-60-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Aldicarb	116-06-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Aldicarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Aldicarb-sulfone	1646-88-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Aldicarb-sulfoxide	1646-87-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ametoctradin	865318-97-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ametryn	834-12-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Amidosulfuron	120923-37-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Aminocarb	2032-59-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Amitraz (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Amitraze	33089-61-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ancymidol	12771-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Atrazin	1912-24-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Atrazin, desethyl-	6190-65-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Azaconazole	60207-31-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Azamethiphos	35575-96-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Aziprotryn	4658-28-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Azoxystrobin	131860-33-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Benalaxyl	71626-11-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Bendiocarb	22781-23-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Benfuracarb	82560-54-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Benodanil	15310-01-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Benomyl	17804-35-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Bensulfuron methyl	83055-99-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Benthiavalicarb, isopropyl-	177406-68-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Bitertanol	55179-31-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Boscalid	188425-85-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Bromacil	314-40-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Bromuconazole (Sum)		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Bupirimate	41483-43-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Buprofezin	69327-76-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Butachlor	23184-66-9	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Butocarboxim	34681-10-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Butocarboxim (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Butocarboxim-sulfoxide	34681-24-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Butoxycarboxim	34681-23-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Buturon	3766-60-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cadusafos	95465-99-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Carbaryl	63-25-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbendazim	10605-21-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbendazim/Benomyl (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Carbofuran	1563-66-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Carbofuran (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Carbosulfan	55285-14-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carboxin	5234-68-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
CHLORANTRANILIPROLE	500008-45-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorbromuron	13360-45-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chlorfluazuron	71422-67-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chloridazone	1698-60-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chlorotoluron	15545-48-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chloroxuron	1982-47-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorpropham	101-21-3	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Chlorsulfuron	64902-72-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cinidon-ethyl	142891-20-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cinosulfuron	94593-91-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clethodim	99129-21-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clodinafop-propargyl	105512-06-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clofentezine	74115-24-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clomazone	81777-89-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clothianidin	210880-92-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyanazine	21725-46-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyazofamid	120116-88-3	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Cymoxanil	57966-95-7	mg / kg	0,100	0,00	S [LC-MS/MS] // LA-LCN
Cyproconazole	94361-06-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cyprodinil	121552-61-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyprofuram	69581-33-5	mg / kg	0,030	0,00	S [LC-MS/MS] // LA-LCN
Cyromazine	66215-27-8	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Demeton	8065-48-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Demeton-S-methyl	919-86-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Demeton-S-methyl-sulfone	17040-19-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Desmedipham	13684-56-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Desmetryn	1014-69-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diazinon	333-41-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dichlorvos	62-73-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diclobutazol	75736-33-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diethofencarb	87130-20-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diethyltoluamide	134-62-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Difenoconazole	119446-68-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Difenoxuron	14214-32-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diflubenzuron	35367-38-5	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Diflufenican	83164-33-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimefox	115-26-4	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Dimefuron	34205-21-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimethenamid including sum of isomers	87674-68-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimethoate	60-51-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimethomorph	110488-70-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimetilan	644-64-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimoxystrobin	149961-52-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dinotefuran	165252-70-0	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton	298-04-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton-sulfon	2497-06-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton-sulfoxide	2497-07-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Diuron	330-54-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Emamectin (Sum)		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Epoxiconazole	133855-98-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb	29973-13-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb-sulfone	53380-23-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb-sulfoxide	53380-22-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiprole	181587-01-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethofenprox	80844-07-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesat (Sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesat-2-keto		mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesate	26225-79-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethoprophos	13194-48-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Etoxazole	153233-91-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Famoxadone	131807-57-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamidone	161326-34-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos	22224-92-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos-sulfone	31972-44-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos-sulfoxide	31972-43-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenarimol	60168-88-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenazaquin	120928-09-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenbuconazole	114369-43-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenhexamid	126833-17-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenobucarb	3766-81-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenoxaprop-ethyl	66441-23-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenoxycarb	72490-01-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenpiclonil	74738-17-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenpropidin	67306-00-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenpropimorph	67564-91-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenpyroximate	134098-61-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion	115-90-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-oxon-sulfone	6132-17-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-oxon-sulfoxide	6552-21-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-sulfone	14255-72-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion	55-38-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon	6552-12-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon-sulfone	14086-35-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon-sulfoxide	6552-13-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-sulfone	3761-42-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-sulfoxide	3761-41-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenuron	101-42-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flazasulfuron	104040-78-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flonicamid	158062-67-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Florasulam	145701-23-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fluazifop-P-butyl	79241-46-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fluazuron	86811-58-7	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Flucycloxuron	113036-88-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fludioxonil	131341-86-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Flufenacet	142459-58-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flufenoxuron	101463-69-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fluometuron	2164-17-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fluopicolid	239110-15-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flurochloridone	61213-25-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flurprimidol	56425-91-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flusilazole	85509-19-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flutriafol	76674-21-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
FM-6-1		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Formetanate	22259-30-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fosthiazate	98886-44-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fuberidazole	3878-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Furathiocarb	65907-30-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Halofenozide	112226-61-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Haloxypop-Ethoxyethyl	87237-48-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Haloxypop-methyl	69806-40-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Hexaconazole	79983-71-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexaflumuron	86479-06-3	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Hexazinone	51235-04-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexythiazox	78587-05-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Imazalil (any ratio of constituent isomers)	35554-44-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Imibenconazol	86598-92-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Imidacloprid	138261-41-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Indoxacarb (sum, R+S isomers)	144171-61-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Iodosulfuron methyl	185119-76-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Iprovalicarb	140923-17-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoprocab	2631-40-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoprothiolane	50512-35-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoproturon	34123-59-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoxaben	82558-50-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoxaflutole	141112-29-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoxathion	18854-01-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Lenacil	2164-08-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Linuron	330-55-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Lufenuron	103055-07-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malaoxon	1634-78-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malathion	121-75-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malathion/Malaoxon (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Mandipropamid	374726-62-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Mepanipyrim	110235-47-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metalaxyl	57837-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metamitron	41394-05-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metazachlor	67129-08-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metconazole	125116-23-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methabenzthiazuron	18691-97-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methacrifos	62610-77-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methamidophos	10265-92-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methidathion	950-37-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb	2032-65-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Methiocarb-sulfone	2179-25-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb-sulfoxide	2635-10-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methomyl	16752-77-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methoprotrene	841-06-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methoxyfenozid	161050-58-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metobromuron	3060-89-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metolachlor	51218-45-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metolcarb	1129-41-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metoxuron	19937-59-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metrafenone	220899-03-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metribuzin	21087-64-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metsulfuron-methyl	74223-64-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Molinate	2212-67-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Monocrotophos	6923-22-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Monolinuron	1746-81-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Monuron	150-68-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
N-2,4-dimethylphenyl-N-methylformamidin	33089-74-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Napropamide	15299-99-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Neburon	555-37-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Nicosulfuron	111991-09-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Novaluron	116714-46-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Nuarimol	63284-71-9	mg / kg	0,025	0,00	S [LC-MS/MS] // LA-LCN
Ofurace	58810-48-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Omethoate	1113-02-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Orbencarb	34622-58-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxadixyl	77732-09-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxamyl	23135-22-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxamyl-oxime	30558-43-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Oxydemeton-methyl	301-12-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxydemeton-methyl (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Paclobutrazol	76738-62-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Paraoxon-ethyl	311-45-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Paraoxon-methyl	950-35-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Penconazole	66246-88-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pencycuron	66063-05-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pendimethalin	40487-42-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pentachlor	2307-68-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phenmedipham	13684-63-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Phorate	298-02-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phorate (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Phorate-sulfone	2588-04-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phorate-sulfoxide	2588-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phosmet	732-11-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phosphamidon	13171-21-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phoxim	14816-18-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Picoxystrobin	117428-22-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Piperonyl butoxide	51-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb	23103-98-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb, desmethyl-	30614-22-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb, desmethyl-formamido-	27218-04-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Primisulfuron-methyl	86209-51-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prochloraz	67747-09-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Promecarb	2631-37-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prometon	1610-18-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prometryn	7287-19-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Propamocarb (sum)	24579-73-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Propargite	2312-35-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Propazin	139-40-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Propham	122-42-9	mg / kg	0,030	0,00	S [LC-MS/MS] // LA-LCN
Propiconazole (sum of isomers)	60207-90-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Propoxur	114-26-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Propoxycarbazone	145026-81-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Proquinazid	189278-12-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prosulfocarb	52888-80-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Prosulfuron	94125-34-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pymetrozine	123312-89-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pyraclostrobin	175013-18-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pyraflufen-ethyl	129630-19-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pyrethrins	8003-34-7	mg / kg	0,500	0,00	S [LC-MS/MS] // LA-LCN
Pyridate	55512-33-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pyrimethanil	53112-28-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pyrimidifen	105779-78-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pyriproxyfen	95737-68-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Quizalofop ethyl	76578-14-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Rabenzazole	40341-04-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Rimsulfuron	122931-48-0	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Rotenone	83-79-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Sebuthylazine	7286-69-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Sethoxydim	74051-80-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Silafluofen	105024-66-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Simazine	122-34-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Simazine, desethyl-	1007-28-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Simeconazole	149508-90-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Spinosad (Summe)	168316-95-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Spirodiclofen	148477-71-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Spiromesifen	283594-90-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Spirotetramat	203313-25-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Spiroxamine	118134-30-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tebuconazol	107534-96-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tebufenozide	112410-23-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tebufenpyrad	119168-77-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Teflubenzuron	83121-18-0	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
TEPP	107-49-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Terbacil	5902-51-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Terbufos	13071-79-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Terbufos-sulfon	56070-16-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Terbufos-sulfoxide	10548-10-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Terbuthylazine	5915-41-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Terbuthylazine, desethyl-	30125-63-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Terbutryn	886-50-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Tetraconazole	112281-77-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiabendazole	148-79-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiabendazole, 5-hydroxy-	948-71-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiacloprid	111988-49-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiamethoxam	153719-23-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiazafurion	25366-23-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thifensulfuron methyl	79277-27-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiodicarb	59669-26-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox	39196-18-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox-sulfone	39184-59-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox-sulfoxide	39184-27-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiometon	640-15-3	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Thionazin	297-97-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiophanate (-ethyl)	23564-06-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiophanate-methyl	23564-05-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tiocabazil	36756-79-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triadimefon	43121-43-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triadimenol	55219-65-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triamiphos	1031-47-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triasulfuron	82097-50-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triazamate	112143-82-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triazophos	24017-47-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tribenuronmethyl	101200-48-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trichlorfon	52-68-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Tricyclazol	41814-78-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Tridemorph	81412-43-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trietazine	1912-26-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trifloxystrobin	141517-21-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trifloxysulfuron	145099-21-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflumizol/FM-6-1 (Sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Triflumizole	99387-89-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triflururon	64628-44-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflursulfuronmethyl	126535-15-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triforine	26644-46-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trimethacarb, 3,4,5-	2686-99-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triticonazole	131983-72-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Uniconazole	83657-22-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion	2275-23-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion-sulfone	70898-34-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion-sulfoxide	20300-00-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Zoxamid	156052-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
! Pesticides screened (other)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SPGG4

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Aminomethylphosphonic acid (AMPA)	1066-51-9	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158
Glufosinate	51276-47-2	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158
Glyphosate	1071-83-6	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158

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REPORT OF ANALYSIS No. 197574/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) A-00#59 rapeseed cake
Sample received:	2021-04-12	Sample without any visible damages Order of 2021-04-07 The samples were delivered by Client
Analysis completed (the date of performance of the laboratory activity):	2021-04-19	
Report dated:	2021-04-19	

Test	Method	Unit	Result
* Enumeration of sulphate (IV)-reducing anaerobic bacteria	PN-ISO 15213:2005	cfu/g	<1,0x10 ¹
* Enumeration of Clostridium perfringens	PN-EN ISO 7937:2005	cfu/g	<1,0x10 ¹
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	2,8x10 ⁴ [1,8x10 ⁴ ;4,2x10 ⁴]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most propable number of Coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Escherichia coli in 10g	PN-ISO 7251:2006		not detected in 10 g
* Detection of Listeria monocytogenes in 25g	PN-EN ISO 11290-1:2017-07		not detected in 25 g
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Agnieszka Duda, Senior Specialist Analyst, Microbiology Laboratory Gdynia
 Katarzyna Duczek, Specialist Analyst, Microbiology Laboratory Gdynia
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwasczyńska 180

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TESTING LABORATORY

ul. Chwasczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00



REPORT OF ANALYSIS No. 264428/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) A-00#59 rapeseed cake
Sample received:	2021-05-11	Sample without any visible damages Order of 2021-05-07 The samples were delivered by Client
Analysis completed (the date of performance of the laboratory activity):	2021-05-26	
Report dated:	2021-05-26	

Test	Method	Unit	Result
* Polycyclic aromatic hydrocarbons (PAHs)	PB-117/HPLC ed. VI of 20.01.2019		
Benzo(a)pyrene		µg/kg	< 0,2
Σ PAHs (Benzo(a)pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene)		µg/kg	0,8 ± 0,2
# * Dioxins / Furans / Dioxin-like PCBs / PCB indicator ¹⁾	NL/22a, NL/22b (EU 2017/644)		
WHO-PCDD/F-TEQ		pg/g	0,020 ± 0,003
WHO-PCB-TEQ		pg/g	0,005 ± 0,001
WHO-PCDD/F-PCB-TEQ		pg/g	0,025 ± 0,004
Sum of PCBs (ICES - 6)		ng/g	0,004 ± 0,001

¹⁾ Details of the measurement are available upon request.

Test: Dioxins / Furans / Dioxin-like PCBs / PCB indicator was performed by external provider with an accreditation number L 440

THE END OF THE REPORT

Authorized by: Beata Zajkowska, Specialist Analyst, Laboratory Cooperation Section
Żaneta Nowińska-Słowik, Expert Analyst, Liquid Chromatography Laboratory
Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwasczyńska 180

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ul. Chwasczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00





Eurofins Polska Sp. z o.o.
Aleja Wojska Polskiego 90 A
PL-82 200 Malbork
POLAND
Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
www.eurofins.pl



AB 1334

NapiFeryn BioTech Sp. z o.o.
ul. Dubois 114/116
93-465 Łódź
POLSKA

Issue date 02.06.2021

Analytical report AR-21-ST-070141-01

Sample Code 720-2021-00104471

× Type of sample	rapeseed cake
× Prescriber	005-32419-2792899
× Purchase order date	NapiFeryn BioTech Sp. z o.o.
Reception date	13.05.2021
Transport by	14.05.2021
Sample condition	Courier
× Sampling Person	acceptable
× Type of sampling	principal
× Purpose of the testing	to guarantee its representativeness
Client sample code	technological sample
× Packaging	P-00#16
Number of tested samples	plastic container with a plastic lid
Start analysis	1
End Analysis	14.05.2021
	02.06.2021

Results

J1003 Arsenic (As) (A)

Method §64 LFGB L 00.00-19/3, GF-AAS

Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Arsenic (As) <0,1 * mg/kg

JC0F3 Ochratoxin A (feed) (A)

Method DIN EN 14132 (2009-09), mod., IAC-LC-FLD

Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Ochratoxin A (OTA) <1 * µg/kg

JCAF3 Aflatoxin B1, B2, G1, G2 (A)

Method DIN EN 14123 (2008-03), mod., IAC-LC-FLD

Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00

Aflatoxin B1 <1 * µg/kg

Aflatoxin B2 <1 * µg/kg

Aflatoxin G1 <1 * µg/kg

Aflatoxin G2 <1 * µg/kg

Sum of all positive Aflatoxins	<4	*	µg/kg	
JCHG2 Mercury (Hg) (A)				
Method DIN EN ISO 15763 (2010), ICP-MS				
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Mercury [Hg]	<0,005	*	mg/kg	
JCHRU Lead (Pb) (A)				
Method DIN EN ISO 15763 (2010), ICP-MS/MS				
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Lead (Pb)	36		µg/kg	± 7
JCM04 Cadmium (Cd) (A)				
Method DIN EN ISO 15763 (2010), ICP-MS				
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Cadmium (Cd)	0,057		mg/kg	± 0.012
JJ088 Fumonisin B1, B2, B3 (maize and products derived from maize) (A)				
Method metoda własna, LC-MS/MS				
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Fumonisin B1 (FB1)	<20	*	µg/kg	
Fumonisin B2 (FB2)	<20	*	µg/kg	
Fumonisin B3 (FB3)	<20	*	µg/kg	
Fumonisin sum (B1+B2)	<40	*	µg/kg	
Fumonisin sum (B1+B2+B3)	<60	*	µg/kg	
JJ0CT Aluminium (Al) (A)				
Method EN ISO 17294-2-E29, ICP-MS				
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Aluminium	19		mg/kg	± 3.8
JJ0FF Fusarium toxins big (DON, ZON T2, HT2, NIV, ADON, DAS, FX) (A)				
Method metoda własna, LC-MS/MS				
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
15-Acetyldeoxynivalenol (15-ADON)	<20		µg/kg	
3-Acetyldeoxynivalenol (3-ADON)	<20		µg/kg	
Deoxynivalenol (Vomitoxin)	<20		µg/kg	
Diacetoxyscirpenol (DAS)	<10		µg/kg	
Fusarenone X (FX)	<20		µg/kg	
HT-2 Toxin	<10		µg/kg	
Nivalenol (NIV)	<20		µg/kg	
sum T-2 HT-2 toxin	<20		µg/kg	
T-2 Toxin	<10		µg/kg	
Zearalenone (ZON)	<10		µg/kg	
ST0DB Oil and fat content after hydrolysis (A)				
Method Dz.U.UE L54/1 z dnia 26.2.2009 (WE) nr 152/2009, Gravimetry				
oil and crude fat content after hydrolysis	15,40		%	± 0,77
ST0DC Water content (A)				
Method Dz.U.UE L54/1 z dnia 26.2.2009 (WE) nr 152/2009, Gravimetry				
Dry Matter Content (FAA)	91,06		%	± 7,28
Moisture	8,94		%	± 0,72
ST0DD Raw protein content (Nx6,25) (A)				
Method ISO 1871:2009, Calculation				
Crude protein (N*6,25)	29,50		%	± 0,89
Nitrogen - Kjeldahl	4,72		%	± 0,14
ST0DE Ash content, raw (A)				
Method Dz.U.UE L54/1 z dnia 26.2.2009 (WE) nr 152/2009, Gravimetry				
Crude ash	6,18		%	± 0,87
ST1MH Crude fiber content (A)				
Method Dz.U.UEL54/1 z dn 26.2.2009(WE) nr152/2009 zał.III, Weight method				

Crude fiber 10,99 % ± 2,20

* = less than the limit of quantification

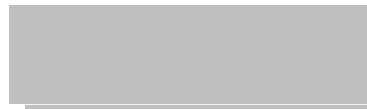
A = Method accredited

+/- Uncertainty of measurement presented as expanded uncertainty of measurement (95%; k=2).

x = Data provided by the customer



Authorized by: Monika Miętus
Zastępca Kierownika Pracowni Chemicznej



Paulina Matusiewicz Approved by:
Analytical Service Manager

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REPORT OF ANALYSIS No. 275982/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ	Sample description (according to declaration of Client) P-00#16 rapeseed cake Sample without any visible damages
Sample received:	2021-05-17
Analysis completed (the date of performance of the laboratory activity):	2021-06-04
Report dated:	2021-06-04
Order of 2021-05-12 The samples were delivered by Client	

Test	Method	Unit	Result
* Ash insoluble in 4N HCl	PN-A-88022:1959	%	0,38 ± 0,02
* Enumeration of sulphate (IV)-reducing anaerobic bacteria	PN-ISO 15213:2005	cfu/g	<1,0x10 ¹
* Enumeration of Clostridium perfringens	PN-EN ISO 7937:2005	cfu/g	<1,0x10 ¹
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	<1,0x10 ¹
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of Coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Escherichia coli in 10g	PN-ISO 7251:2006		not detected in 10 g
* Detection of Listeria monocytogenes in 25g	PN-EN ISO 11290-1:2017-07		not detected in 25 g
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g
* Polycyclic aromatic hydrocarbons (PAHs)	PB-117/HPLC ed. VI of 20.01.2019		
Benzo(a)pyrene		µg/kg	< 0,2
Σ PAHs (Benzo(a)pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene)		µg/kg	1,2 ± 0,4
# * Dioxins / Furans / Dioxin-like PCBs / PCB indicator ¹⁾	NL/22a, NL/22b (EU 2017/644)		
WHO-PCDD/F-TEQ		pg/g	0,158 ± 0,024
WHO-PCB-TEQ		pg/g	0,112 ± 0,022
WHO-PCDD/F-PCB-TEQ		pg/g	0,270 ± 0,046
Sum of PCBs (ICES - 6)		ng/g	<0,600

¹⁾ Details of the measurement are available upon request.

Test: Dioxins / Furans / Dioxin-like PCBs / PCB indicator was performed by external provider with an accreditation number L 440

THE END OF THE REPORT

Authorized by: Agnieszka Duda, Senior Specialist Analyst, Microbiology Laboratory Gdynia
 Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
 Beata Zajkowska, Specialist Analyst, Laboratory Cooperation Section
 Paulina Połosak, Expert Analyst, Microbiology Laboratory Gdynia
 Żaneta Nowińska-Słowik, Expert Analyst, Liquid Chromatography Laboratory
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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ul. Chwaszczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00





Eurofins Polska Sp. z o.o.
Aleja Wojska Polskiego 90 A
PL-82 200 Malbork
POLAND
Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
www.eurofins.pl



AB 1334

NapiFeryn BioTech Sp. z o.o.
ul. Dubois 114/116
93-465 Łódź
POLSKA

Issue date 18.05.2021

Analytical report AR-21-ST-060861-02

Supplement of report No.: AR-21-ST-060861-01

Sample Code 720-2021-00093035

× Type of sample	Protein isolate
× Prescriber	005-32419-2790081
× Purchase order date	NapiFeryn BioTech Sp. z o.o.
× Client Purchase order nr.	27.04.2021
Reception date	3
Transport by	28.04.2021
Transport condition	Courier
× Sampling Person	at ambient temp.
× Type of sampling	principal
× Purpose of the testing	to guarantee its representativeness
Client sample code	technological sample
× Packaging	R-03#57
Number of tested samples	Worek foliowy, pojemnik plastikowy, butelka plastikowa
Start analysis	1
End Analysis	28.04.2021
	14.05.2021

Results

A7126 Ochratoxin A (food) (A)

Method DIN EN 14132 (2009-09), mod., IAC-LC-FLD
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00
Ochratoxin A (OTA)

<0,5 * µg/kg

AA602 Fluoride (A)

Method Wewnętrzna, Potentiometry
Eurofins Analytics France (Nantes), accreditation nr. 1-0287
Fluorine (F)

<20 mg/kg

DI004 Amino acids (acid hydrolysis) (A)

Method AMSUR, IC-UV
Eurofins Vitamin Testing Denmark, accreditation nr. 581

Alanine	4,08	g/100 g	± 0.571
Arginine	5,91	g/100 g	± 0.827
Aspartic acid	7,53	g/100 g	± 1.054

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Glutamic acid	19,3	g/100 g	± 2.702
Glycine	4,74	g/100 g	± 0.664
Histidine	2,56	g/100 g	± 0.358
Hydroxyproline	0,430	g/100 g	± 0.086
Isoleucine	3,41	g/100 g	± 0.477
Leucine	7,26	g/100 g	± 1.016
Lysine	4,97	g/100 g	± 0.696
Ornithine	<0,05 (LOQ)	g/100 g	
Phenylalanine	3,71	g/100 g	± 0.519
Proline	5,71	g/100 g	± 0.799
Serine	3,76	g/100 g	± 0.526
Threonine	3,81	g/100 g	± 0.533
Tyrosine	2,12	g/100 g	± 0.297
Valine	4,52	g/100 g	± 0.633
DJ009 Tryptophane (A)			
Method EU 152/2009, LC-FLD			
Eurofins Vitamin Testing Denmark, accreditation nr. 581			
Tryptophan (Total)	1,30	g/100 g	± 0.130
DJ011 Cysteine+Cystine & methionine (ox-amino acid) (A)			
Method IC-UV			
Eurofins Vitamin Testing Denmark, accreditation nr. 581			
Cystein +Cystine	2,21	g/100 g	± 0.309
Methionine	1,65	g/100 g	± 0.231
EF12C Cyantraniliprole (A)			
Method DIN EN 15662:2009-02, mod., LC-MS/MS			
Eurofins CLF (Friedrichsdorf), accreditation nr. D-PL-14076-01-00			
Cyantraniliprole	<0,005	* mg/kg	
EF18Y Isofetamid (A)			
Method DIN EN 15662:2009-02, mod., LC-MS/MS			
Eurofins CLF (Friedrichsdorf), accreditation nr. D-PL-14076-01-00			
Isofetamid	<0,005	* mg/kg	
J1003 Arsenic (As) (A)			
Method §64 LFGB L 00.00-19/3, GF-AAS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Arsenic (As)	<0,1	* mg/kg	
J1040 Cobalt (Co) (A)			
Method EN ISO 11885 (2009-09), mod., ICP-OES			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Cobalt (Co)	<0,2	* mg/kg	
JCAA1 Acrylamide in Food (A)			
Method metoda własna, LC-MS/MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Acrylamide	<30	* µg/kg	
JCHG2 Mercury (Hg) (A)			
Method DIN EN ISO 15763 (2010), ICP-MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Mercury [Hg]	<0,005	* mg/kg	
JCHRU Lead (Pb) (A)			
Method DIN EN ISO 15763 (2010), ICP-MS/MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Lead (Pb)	220	µg/kg	± 43
JCM04 Cadmium (Cd) (A)			
Method DIN EN ISO 15763 (2010), ICP-MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			

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Cadmium (Cd)	0,097	mg/kg	± 0.02
JJ006 Aflatoxins B1, B2, G1, G2 (food) (A)			
Method DIN EN 14123 (2008-03), mod., IAC-LC-FLD			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Aflatoxin B1	<0,1	* µg/kg	
Aflatoxin B2	<0,1	* µg/kg	
Aflatoxin G1	<0,1	* µg/kg	
Aflatoxin G2	<0,1	* µg/kg	
Sum of all positive Aflatoxins	<0,4	* µg/kg	
JJ088 Fumonisin B1, B2, B3 (maize and products derived from maize) (A)			
Method metoda własna, LC-MS/MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Fumonisin B1 (FB1)	<20	* µg/kg	
Fumonisin B2 (FB2)	<20	* µg/kg	
Fumonisin B3 (FB3)	<20	* µg/kg	
Fumonisin sum (B1+B2)	<40	* µg/kg	
Fumonisin sum (B1+B2+B3)	<60	* µg/kg	
JJ0CT Aluminium (Al) (A)			
Method EN ISO 17294-2-E29, ICP-MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Aluminium	5,6	mg/kg	± 1.2
JJ0FF Fusarium toxins big (DON, ZON T2, HT2, NIV, ADON, DAS, FX) (A)			
Method metoda własna, LC-MS/MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
15-Acetyldeoxynivalenol (15-ADON)	<20	* µg/kg	
3-Acetyldeoxynivalenol (3-ADON)	<20	* µg/kg	
Deoxynivalenol (Vomitoxin)	<20	* µg/kg	
Diacetoxyscirpenol (DAS)	<10	* µg/kg	
Fusarenone X (FX)	<20	* µg/kg	
HT-2 Toxin	<10	* µg/kg	
Nivalenol (NIV)	<20	* µg/kg	
sum T-2 HT-2 toxin	<20	* µg/kg	
T-2 Toxin	<10	* µg/kg	
Zearalenone (ZON)	<10	* µg/kg	
QD08G Glucosinolate in Canola Products (A)			
Method LC-UV/VIS			
Eurofins Scientific Inc. (Des Moines), accreditation nr. 2927.01			
4-Hydroxyglucobrassicin	<0,05	µmol/g	
Epiprogoitrin	<0,05	µmol/g	
Glucoalyssin	<0,05	µmol/g	
Glucobrassicinapin	<0,05	µmol/g	
Glucobrassicin	<0,05	µmol/g	
Glucoerucin	<0,05	µmol/g	
Gluconapin	0,06	µmol/g	
Gluconapoleiferin	<0,05	µmol/g	
Gluconasturtiin	<0,05	µmol/g	
Glucoraphanin	<0,05	µmol/g	
Glucosinolates (sum)	0,13	µmol/g	
Glucotropaeolin	<0,05	µmol/g	
Neoglucobrassicin	<0,05	µmol/g	
Progoitrin	0,07	µmol/g	
Sinalbin	<0,05	µmol/g	
QD495 Phytic Acid (#)			

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Method	Analytical Biochemistry Vol. 77:536-539 (1977), ICP-OES		
	Subcontracted to the Eurofins laboratory Eurofins Scientific Inc. (Des Moines)		
	Kwas fitynowy/Phytic acid	0,97	%
SF00S	Phosphane in food/feed (A)		
Method	Internal Method [DE Food], HS-GC-FPD		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Phosphane	<0,005	* mg/kg
SF277	Ethametsulfuron-methyl (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Ethametsulfuron-methyl	<0,01	* mg/kg
SF3SL	Sulfurylfluoride in selected food (A)		
Method	Internal Method [DE Food], HS-GC-MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Sulfurylfluorek	<0,01	* mg/kg
SF3WU	Penthiopyrad (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Penthiopyrad	<0,01	* mg/kg
SF55N	Fluxapyroxad (A)		
Method	§ 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], GC-MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Fluxapyroxad	<0,1	* mg/kg
SF7BR	Saflufenacil (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Saflufenacil	<0,01	* mg/kg
SF7C9	Fluopyram (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Fluopyram	<0,01	* mg/kg
SF8TD	Flumioxazin (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Flumioxazin	<0,01	* mg/kg
SF91A	Fluoxastrobin (A)		
Method	§ 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], GC-MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Fluoxastrobin	<0,1	* mg/kg
SF98A	Methylbromide (A)		
Method	Internal Method [DE Food], HS-GC-MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Methyl bromide	<0,1	* mg/kg
SFAZ3	Penflufen (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Penflufen	<0,01	* mg/kg
SFCFC	Prothioconazole (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Prothioconazole	<0,01	* mg/kg
SFDMZ	Benzovindiflupyr (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
	Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00		
	Benzovindiflupyr	<0,01	* mg/kg

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SFDN1	Flupyradifurone (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Flupyradifurone	<0,01	*	mg/kg	
SFDN3	Sedaxane (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Sedaxane	<0,01	*	mg/kg	
SFDN4	Sulfoxaflor (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Sulfoxaflor	<0,01	*	mg/kg	
SFFF0	Paraquat and diquat in food and feed (A)			
Method	Internal Method [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Diquat	<0,02	*	mg/kg	
Paraquat	<0,02	*	mg/kg	
SFFW4	Mefentrifluconazole (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Mefentrifluconazole	<0,01	*	mg/kg	
SFLA0	Pesticide Screening GC/MS in food with low water content (A)			
Method	§ 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], GC-MS [GC-MS]			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Screened pesticides	<LOQ			
SFLC0	Determination of acidic herbicides in dry and water rich food (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS [LC-MS/MS]			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Screened pesticides	<LOQ			
SFLD0	Pesticide screening using LC/MS/MS in food (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS [LC-MS/MS]			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Screened pesticides	<LOQ			
SPGG4	Glyphosate, AMPA (Glyphosate metabolite) and Glufosinate (A)			
Method	Internal Method SPG-14.158-3, LC-MS/MS			
Eurofins Dr. Specht International GmbH, accreditation nr. D-PL-20881-01-00				
Aminomethylphosphonic acid (AMPA)	< 0,01		mg/kg	
Glufosinate	< 0,01		mg/kg	
Glyphosate	0,030		mg/kg	± 0.009
ST05Z	Protein content (Nx6,25) (A)			
Method	ISO 1871:2009, Titrimetry			
Nitrogen - Kjeldahl	14,38		%	± 2,30
Protein (Nx6,25)	89,88		%	± 14,38
ST0LH	Content of fat after hydrolisis (A)			
Method	PB/CH/16 wydanie 3 z dnia 09.11.2018, Gravimetry			
Content of fat after hydrolisis	0,81		%	± 0,08
ST0SI	Fatty acid composition (A)			
Method	PN EN ISO 12966-1:2015-01 + AC:2015-06, Method gas chromatography with flame ionization detection , GC-FID			
C 10:0 (Capric acid)	<0,1	*	%	
C 11:0 (Undecanoic acid)	<0,1	*	%	
C 12:0 (Lauric acid)	<0,1	*	%	
C 13:0 (Tridecanoic acid)	<0,1	*	%	
C 14:0 (Myristic acid)	0,39		%	
C 14:1 (Myristoleic acid)	<0,1	*	%	

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C 15:0 (Anteisopentdecenoic acid)	<0,1	* %	
C 15:1 (Pentadecenoic acid) + Isomers	<0,1	* %	
C 16:0 (Palmitic acid)	7,16	%	
C 16:1 (Palmitoleic acid)	0,50	%	
C 17:0 (Margaric acid)	<0,1	* %	
C 17:1 (Heptadecenoic acid)	<0,1	* %	
C 18:0 (Stearic acid)	2,35	%	
C 18:1 c others	<0,1	* %	
C 18:1 C11	4,70	%	
C 18:1 n9 Octadecan acid	55,47	%	
C 18:1t (Elaidic Acid)	<0,1	* %	
C 18:2 (Linoleic acid)	20,48	%	
C 18:2 (trans/trans)	<0,1	* %	
C 18:3 (alpha-linolenic acid)	6,65	%	
C 18:3 (gamma-linolenic acid)	<0,1	* %	
C 18:3 trans	<0,1	* %	
C 18:4 (Octadecatetraenoic acid)	<0,1	* %	
C 20:0 (Arachidic acid)	0,62	%	
C 20:1 (Eicosenoic acid)	1,09	%	
C 20:2 Eicosadienoic acid n-6	<0,1	* %	
C 20:3 (Eicosatrienoic acid)	<0,1	* %	
C 20:4 Eicosatetraenoic/Arachidonic acid	<0,1	* %	
C 20:5 Eicosapentaenoic acid	<0,1	* %	
C 20:3 Eicosatrienoic acid n-6	<0,1	* %	
C 21:0 Henikanozanian metylu	<0,1	* %	
C 22:0 (Behenic acid)	0,40	%	
C 22:1 Docosenoic acid	<0,1	* %	
C 22:1 isomers	<0,1	* %	
C 22:2 (Docosadienoic acid)	<0,1	* %	
C 22:4 Docosatetraenoic acid	<0,1	* %	
C 22:5 Docosapentaenoic acid (Omega 3)	<0,1	* %	
C 22:6 omega 3	<0,1	* %	
C 23:0 (Tricosanoic acid)	<0,1	* %	
C 24:0 (Lignoceric acid)	<0,1	* %	
C 24:1 (Nervonic acid)	0,19	%	
C 4:0 Butanoic acid	<0,1	* %	
C 6:0 (Caproic acid)	<0,1	* %	
C 8:0 Octanoic acid	<0,1	* %	
Mono unsaturated fatty acids	0,50	g/100 g	± 0,14
Omega-3 fatty acids	<0,1	* g/100 g	
Omega-6 fatty acids	0,17	g/100 g	± 0,05
Omega-9 fatty acids	0,46	g/100 g	± 0,14
Poly unsaturated fatty acids	0,22	g/100 g	± 0,07
Saturated fatty acids	<0,1	* g/100 g	
Trans fatty acids	<0,1	* g/100 g	
ST0Y8 Ash total content (A)			
Method PN-A-79011-8:1998, Gravimetry			
Ash	2,67	%	± 0,56
ST0YE Water, dry mass content (A)			
Method PN-A-79011-3:1998, weight			
Dry matter	96,1	%	± 7,7
Moisture (103 °C)	3,9	%	± 0,3

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ST1MH Crude fiber content (A)

Method Dz.U.UEL54/1 z dn 26.2.2009(WE) nr152/2009 zał.III, Weight method

Crude fiber <0,30

%

* = less than the limit of quantification

= Not accredited

A = Method accredited

+/- Uncertainty of measurement presented as expanded uncertainty of measurement (95%; k=2).

x = Data provided by the customer

JUDGEMENT

The results for the content of individual fatty acids and the sum of the trans isomers of fatty acids refer to fat [g / 100 g fat]; the content of other groups of fatty acids refer to the sample [g / 100 g of sample]

Reason for issuing the second version of the report (supplements): at the client's request, the report was supplemented with the value of the total glucosinolates.


Authorized by: Monika Miętus
Zastępca Kierownika Pracowni Chemicznej
Paulina Matusiewicz Approved by:
Analytical Service Manager

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Scope of screened pesticides: SF00S

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Phosphane	7803-51-2	mg / kg	0,005	0,00	3-GC-FPD // LA-GC-109-

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Scope of screened pesticides: SF277

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Ethametsulfuronmethyl	97780-06-8	mg / kg	0,010	0,00	MS // acc. to Screening or

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Scope of screened pesticides: SF55N

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluxapyroxad	907204-31-3	mg / kg	0,100	0,00	S // acc. to Screening or Pi

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Scope of screened pesticides: SF7BR

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Saflufenacil	372137-35-4	mg / kg	0,010	0,00	MS // acc. to Screening or

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Scope of screened pesticides: SF7C9

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluopyram	658066-35-4	mg / kg	0,010	0,00	MS // acc. to Screening or

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Scope of screened pesticides: SF8TD

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Flumioxazin	103361-09-7	mg / kg	0,010	0,00	MS // acc. to Screening or

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Scope of screened pesticides: SF91A

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluoxastrobin	361377-29-9	mg / kg	-	0,00	S // acc. to Screening or Pi

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Scope of screened pesticides: SFCFC

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Prothioconazole	178928-70-6	mg / kg	0,010	0,00	-MS/MS // LA-LCMS-042

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Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
! Pesticides screened (all)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
2,4,5-T-Methylester	1928-37-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
2,4-D-Methylester	1928-38-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Acetochlor	34256-82-1	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Aclonifen	74070-46-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Acrinathrin	101007-06-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Alachlor	15972-60-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Aldrin	309-00-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Aldrin/ Dieldrin (Sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Allethrin	584-79-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Amidithion	919-76-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Atrazin	1912-24-9	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Azaconazole	60207-31-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Azinphos-ethyl	2642-71-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Azinphos-methyl	86-50-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Azoxystrobin	131860-33-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Benfluralin	1861-40-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Benoxacor	98730-04-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Benzoylprop-ethyl	22212-55-1	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Bifenox	42576-02-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Binapacryl	485-31-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Biphenethrin	82657-04-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bitertanol	55179-31-2	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Boscalid	188425-85-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Bromfenvinphos	33399-00-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Bromocyclene	1715-40-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Bromophos	2104-96-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bromophos-ethyl	4824-78-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bromopropylate	18181-80-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Buprofezin	69327-76-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Butachlor	23184-66-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Butamifos	36335-67-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Butralin	33629-47-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cadusafos	95465-99-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Captan	133-06-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Carbophenothion	786-19-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Carbophenothion-methyl	953-17-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Carfentrazone-ethyl	128639-02-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chinomethionate	2439-01-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorbenside	103-17-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlordane (total)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Chlordane, cis-	5103-71-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlordane, oxy-	27304-13-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Chlordane, trans-	5103-74-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
CHLORETHOXYFOS	54593-83-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenapyr	122453-73-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenprop-methyl	14437-17-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorfenson	80-33-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenvinphos	470-90-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chloridazone	1698-60-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Chlormephos	24934-91-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorobenzilate	510-15-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chloroneb	2675-77-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Chloropropylate	5836-10-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorothalonil	1897-45-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorpyrifos (-ethyl)	2921-88-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorpyrifos-methyl	5598-13-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorthal-dimethyl	1861-32-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorthion	500-28-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorthiophos	21923-23-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlozolinate	84332-86-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cinidon-ethyl	142891-20-1	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Clodinafop-propargyl	105512-06-9	mg / kg	0,030	0,00	MS [GC-MS] // LA-GC-00
Coumaphos	56-72-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Crotoxyphos	7700-17-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyanofenphos	13067-93-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyanophos	2636-26-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyfluthrin	68359-37-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyhalothrin, lambda- (includes Cyhalothrin, gamma	91465-08-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cypermethrin	52315-07-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Cyphenothrine	39515-40-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyproconazole	94361-06-5	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
DDD, o,p-	53-19-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
DDE, o,p-	3424-82-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
DDT (sum p,p'-DDT+o,p'-DDT+p,p'-DDE+p,p		mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Deltamethrin	52918-63-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dialifos	10311-84-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diallate	2303-16-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diazinon	333-41-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dibrombenzophenon, p,p-	3988-03-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dicapthon	2463-84-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dichlobenil	1194-65-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Dichlofenthion	97-17-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dichlofluanid	1085-98-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dichloran	99-30-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dichlorvos	62-73-7	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Diclofop-methyl	51338-27-3	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Dicofol (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Dicofol, o,p-	10606-46-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dicofol, p,p-	115-32-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dicrotophos	141-66-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diieldrin	60-57-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Difenoconazole	119446-68-3	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Diiflufenican	83164-33-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dimethachlor	50563-36-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dimethipin	55290-64-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dimethoate	60-51-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Dimethomorph	110488-70-5	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Diniconazole	83657-24-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dinitramine	29091-05-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dinobuton	973-21-7	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Disulfoton	298-04-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Disulfoton-sulfon	2497-06-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Ditalimfos	5131-24-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Edifenphos	17109-49-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Endosulfan (total)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Endosulfan alpha	959-98-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endosulfan sulfate	1031-07-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endosulfan, beta-	33213-65-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endrin	72-20-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endrin ketone	53494-70-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
EPN	2104-64-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Epoxiconazole	133855-98-8	mg / kg	0,040	0,00	MS [GC-MS] // LA-GC-00
Etaconazole	60207-93-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Ethalfuralin	55283-68-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Ethion	563-12-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Ethofumesate	26225-79-6	mg / kg	0,200	0,00	MS [GC-MS] // LA-GC-00
Ethoprophos	13194-48-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Etridiazole	2593-15-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Etrimfos	38260-54-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Famophos	52-85-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Famoxadone	131807-57-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fenamidone	161326-34-7	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Fenamiphos	22224-92-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Fenarimol	60168-88-9	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenbuconazole	114369-43-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fenchlorazole-ethyl	103112-35-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fenchlorphos	299-84-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenhexamid	126833-17-8	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fenitrothion	122-14-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenoxaprop-ethyl	66441-23-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenpiclonil	74738-17-3	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenpropathrin	39515-41-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenpropimorph	67564-91-4	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fenson	80-38-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fensulfothion	115-90-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (all isomers including esfenvalerate)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (RR-/SS-Isomers)		mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (RS-/SR-Isomers)		mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fipronil	120068-37-3	mg / kg	0,004	0,00	MS [GC-MS] // LA-GC-00
Fipronil, desulfinyl-	111246-15-2	mg / kg	0,004	0,00	MS [GC-MS] // LA-GC-00
Fipronil+Sulfonmetab. MB46136 (Sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Fipronil-sulfide	120067-83-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fipronil-sulfone	120068-36-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Flamprop-isopropyl	52756-22-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flamprop-methyl	52756-25-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flonicamid	158062-67-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fluazifop-butyl	69806-50-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fluchloralin	33245-39-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Flucythrinate	70124-77-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flufenoxuron	101463-69-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flumetralin	62924-70-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fluopicolid	239110-15-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fluorodifen	15457-05-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fluotrimazole	31251-03-3	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fluquinconazole	136426-54-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flurenol-butyl	2314-09-2	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Flurochloridone	61213-25-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Flurtamone	96525-23-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flusilazole	85509-19-9	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fluvalinate (sum of isomers)	69409-94-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Folpet	133-07-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fonofos	944-22-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Formothion	2540-82-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Genite	97-16-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Halfenprox	111872-58-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Haloxifop-Ethoxyethyl	87237-48-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Haloxifop-methyl	69806-40-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
HCH, alpha-	319-84-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, beta-	319-85-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, delta-	319-86-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, epsilon-	6108-10-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00

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HCH, gamma - Lindane	58-89-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor	76-44-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Heptachlor epoxide, cis-	1024-57-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor epoxide, trans-	28044-83-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptenophos	23560-59-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Hexachlorobenzene (HCB)	118-74-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Hexaconazole	79983-71-4	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
INDANOFAN	133220-30-1	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Indoxacarb (sum, R+S isomers)	144171-61-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Iodofenphos	18181-70-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Ioxynil-Octanoat	3861-47-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Iprobenfos	26087-47-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Iprodione	36734-19-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isazofos	42509-80-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isobenzan	297-78-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isocarbofos	24353-61-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isodrin	465-73-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isofenphos	25311-71-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isofenphos-Methyl	99675-03-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isomethiozin	57052-04-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isopropalin	33820-53-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isoxadifen-ethyl	163520-33-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Kresoxim-methyl	143390-89-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Lactofen	77501-63-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Leptophos	21609-90-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Lufenuron	103055-07-8	mg / kg	0,012	0,00	MS [GC-MS] // LA-GC-00
Malaoxon	1634-78-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Malathion	121-75-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Malathion/Malaoxon (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Mecarbam	2595-54-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mephosfolan	950-10-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Merphos	150-50-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Metazachlor	67129-08-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Methacrifos	62610-77-9	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Methidathion	950-37-8	mg / kg	0,012	0,00	MS [GC-MS] // LA-GC-00
Methoxychlor	72-43-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Metolachlor	51218-45-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Metrafenone	220899-03-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Metribuzin	21087-64-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mevinphos	7786-34-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mirex	2385-85-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Molinate	2212-67-1	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Myclobutanil	88671-89-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Nitralin	4726-14-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Nitrapyrin	1929-82-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Nitrofen	1836-75-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Nitrothal-isopropyl	10552-74-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Norflurazon	27314-13-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Nuarimol	63284-71-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Omethoate	1113-02-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Oxadiazon	19666-30-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Oxydemeton-methyl	301-12-2	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Oxyfluorfen	42874-03-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Paclobutrazol	76738-62-0	mg / kg	0,040	0,00	MS [GC-MS] // LA-GC-00
Paraoxon-ethyl	311-45-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Paraoxon-methyl	950-35-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Parathion	56-38-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Parathion-methyl	298-00-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Parathion-methyl/Paraoxon-methyl (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Penconazole	66246-88-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pendimethalin	40487-42-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloranisole	1825-21-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloroaniline	527-20-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pentachlorobenzene	608-93-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloroethoxyanisole	1825-19-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Permethrin	52645-53-1	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Perthane	72-56-0	mg / kg	0,200	0,00	MS [GC-MS] // LA-GC-00
Phenkapton	2275-14-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phenothrin	26002-80-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phenthoate	2597-03-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosalone	2310-17-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosfolan	947-02-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosmet	732-11-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Picolinafen	137641-05-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Picoxystrobin	117428-22-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Piperophos	24151-93-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pirimiphos-ethyl	23505-41-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pirimiphos-methyl	29232-93-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Plifenate	21757-82-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Prallethrin	23031-36-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Procymidone	32809-16-8	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
Profenofos	41198-08-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Profluralin	26399-36-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Propachlor	1918-16-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Propanil	709-98-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Propazin	139-40-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Propetamphos	31218-83-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Propiconazole (sum of isomers)	60207-90-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Propyzamid	23950-58-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Prothiofos	34643-46-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Prothoate	2275-18-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyraclufos	89784-60-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyraflufen-ethyl	129630-19-9	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pyrazophos	13457-18-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyrethrins	8003-34-7	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pyridaben	96489-71-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pyridaphenthion	119-12-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyrifenoxy	88283-41-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Quinalphos	13593-03-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Quinoxifen	124495-18-7	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
Quintozone	82-68-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Quintozone (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Quizalofop ethyl	76578-14-8	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Resmethrin	10453-86-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
S 421	127-90-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Spiromesifen	283594-90-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Sulfotep	3689-24-5	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Sulprofos	35400-43-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Swep	1918-18-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tebupirimfos	96182-53-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tecnazene	117-18-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tefluthrin	79538-32-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Temephos	3383-96-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Terbufos	13071-79-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetrachlorvinphos	22248-79-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetraconazole	112281-77-3	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Tetradifon	116-29-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetramethrin	7696-12-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tetrasul	2227-13-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tolclofos-methyl	57018-04-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tolylfluanid	731-27-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Transfluthrin	118712-89-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triadimefon	43121-43-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triadimenol	55219-65-3	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Triallate	2303-17-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triamiphos	1031-47-6	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Triazophos	24017-47-8	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Tribufos	78-48-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Trichloronat	327-98-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tridiphane	58138-08-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Trifloxystrobin	141517-21-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Trifluralin	1582-09-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Vamidothion	2275-23-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Vinclozolin	50471-44-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
! Pesticides screened (other)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
! Pesticides screened (all)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
2,4'-Formoxylidid	60397-77-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
3-Hydroxycarbofuran	16655-82-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
6-CHLOR-3-PHENYLPYRIDAZIN-4-OL (Pyridat	40020-01-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Abamectin	71751-41-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Acephate	30560-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Acetamiprid	135410-20-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Acetochlor	34256-82-1	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC
Alachlor	15972-60-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aldicarb	116-06-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Aldicarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Aldicarb-sulfone	1646-88-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aldicarb-sulfoxide	1646-87-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Ametoctradin	865318-97-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Ametryn	834-12-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Amidosulfuron	120923-37-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aminocarb	2032-59-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Amitraz (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Amitraze	33089-61-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Ancymidol	12771-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Atrazin	1912-24-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Atrazin, desethyl-	6190-65-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Azaconazole	60207-31-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Azamethiphos	35575-96-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aziprotryn	4658-28-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Azoxystrobin	131860-33-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benalaxyl	71626-11-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bendiocarb	22781-23-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benfuracarb	82560-54-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benodanil	15310-01-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benomyl	17804-35-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Bensulfuron methyl	83055-99-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benthiavalicarb, isopropyl-	177406-68-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Bitertanol	55179-31-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Boscalid	188425-85-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Bromacil	314-40-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bromuconazole (Sum)		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bupirimate	41483-43-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Buprofezin	69327-76-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Butachlor	23184-66-9	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim	34681-10-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim-sulfoxide	34681-24-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Butoxycarboxim	34681-23-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Buturon	3766-60-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cadusafos	95465-99-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Carbaryl	63-25-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbendazim	10605-21-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbendazim/Benomyl (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Carbofuran	1563-66-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbofuran (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Carbosulfan	55285-14-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carboxin	5234-68-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
CHLORANTRANILIPROLE	500008-45-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorbromuron	13360-45-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chlorfluazuron	71422-67-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chloridazone	1698-60-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chlorotoluron	15545-48-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chloroxuron	1982-47-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorpropham	101-21-3	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Chlorsulfuron	64902-72-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cinidon-ethyl	142891-20-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cinosulfuron	94593-91-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clethodim	99129-21-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clodinafop-propargyl	105512-06-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clofentezine	74115-24-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clomazone	81777-89-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clothianidin	210880-92-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyanazine	21725-46-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyazofamid	120116-88-3	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Cymoxanil	57966-95-7	mg / kg	0,100	0,00	S [LC-MS/MS] // LA-LCN
Cyproconazole	94361-06-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cyprodinil	121552-61-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyprofuram	69581-33-5	mg / kg	0,030	0,00	S [LC-MS/MS] // LA-LCN
Cyromazine	66215-27-8	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Demeton	8065-48-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Demeton-S-methyl	919-86-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Demeton-S-methyl-sulfone	17040-19-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Desmedipham	13684-56-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Desmetryn	1014-69-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diazinon	333-41-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dichlorvos	62-73-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diclobutrazol	75736-33-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diethofencarb	87130-20-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diethyltoluamide	134-62-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Difenoconazole	119446-68-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Difenofoxuron	14214-32-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diflubenzuron	35367-38-5	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Diflufenican	83164-33-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimefox	115-26-4	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Dimefuron	34205-21-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimethenamid including sum of isomers	87674-68-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimethoate	60-51-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimethomorph	110488-70-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimetilan	644-64-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimoxystrobin	149961-52-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dinotefuran	165252-70-0	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton	298-04-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton-sulfon	2497-06-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton-sulfoxide	2497-07-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diuron	330-54-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Emamectin (Sum)		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Epoxiconazole	133855-98-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb	29973-13-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb-sulfone	53380-23-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb-sulfoxide	53380-22-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiprole	181587-01-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethofenprox	80844-07-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesat (Sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesat-2-keto		mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesate	26225-79-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethoprophos	13194-48-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Etoxazole	153233-91-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Famoxadone	131807-57-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamidone	161326-34-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos	22224-92-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos-sulfone	31972-44-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos-sulfoxide	31972-43-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenarimol	60168-88-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenazaquin	120928-09-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenbuconazole	114369-43-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenhexamid	126833-17-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenobucarb	3766-81-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenoxaprop-ethyl	66441-23-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenoxycarb	72490-01-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenpiclonil	74738-17-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenpropidin	67306-00-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fenpropimorph	67564-91-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenpyroximate	134098-61-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion	115-90-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-oxon-sulfone	6132-17-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-oxon-sulfoxide	6552-21-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-sulfone	14255-72-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion	55-38-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon	6552-12-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon-sulfone	14086-35-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon-sulfoxide	6552-13-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-sulfone	3761-42-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-sulfoxide	3761-41-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenuron	101-42-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flazasulfuron	104040-78-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flonicamid	158062-67-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Florasulam	145701-23-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fluazifop-P-butyl	79241-46-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fluazuron	86811-58-7	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Flucycloxuron	113036-88-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fludioxonil	131341-86-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flufenacet	142459-58-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flufenoxuron	101463-69-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fluometuron	2164-17-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fluopicolid	239110-15-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flurochloridone	61213-25-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flurprimidol	56425-91-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flusilazole	85509-19-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flutriafol	76674-21-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
FM-6-1		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Formetanate	22259-30-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fosthiazate	98886-44-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fuberidazole	3878-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Furathiocarb	65907-30-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Halofenozide	112226-61-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Haloxyfop-Ethoxyethyl	87237-48-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Haloxyfop-methyl	69806-40-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Hexaconazole	79983-71-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexaflumuron	86479-06-3	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Hexazinone	51235-04-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexythiazox	78587-05-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Imazalil (any ratio of constituent isomers)	35554-44-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Imibenconazol	86598-92-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

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Imidacloprid	138261-41-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Indoxacarb (sum, R+S isomers)	144171-61-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Iodosulfuron methyl	185119-76-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Iprovalicarb	140923-17-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoprocab	2631-40-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoprothiolane	50512-35-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoproturon	34123-59-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoxaben	82558-50-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoxaflutole	141112-29-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoxathion	18854-01-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Lenacil	2164-08-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Linuron	330-55-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Lufenuron	103055-07-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malaoxon	1634-78-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malathion	121-75-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malathion/Malaoxon (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Mandipropamid	374726-62-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Mepanipyrim	110235-47-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metalaxyl	57837-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metamitron	41394-05-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metazachlor	67129-08-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metconazole	125116-23-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methabenzthiazuron	18691-97-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methacrifos	62610-77-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methamidophos	10265-92-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methidathion	950-37-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb	2032-65-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb-sulfone	2179-25-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb-sulfoxide	2635-10-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methomyl	16752-77-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methoprotrene	841-06-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methoxyfenozid	161050-58-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metobromuron	3060-89-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metolachlor	51218-45-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metolcarb	1129-41-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metoxuron	19937-59-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metrafenone	220899-03-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metribuzin	21087-64-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metsulfuron-methyl	74223-64-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Molinate	2212-67-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Monocrotophos	6923-22-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Monolinuron	1746-81-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Monuron	150-68-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
N-2,4-dimethylphenyl-N-methylformamidin	33089-74-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Napropamide	15299-99-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Neburon	555-37-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Nicosulfuron	111991-09-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Novaluron	116714-46-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Nuarimol	63284-71-9	mg / kg	0,025	0,00	S [LC-MS/MS] // LA-LCN
Ofurace	58810-48-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Omethoate	1113-02-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Orbencarb	34622-58-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxadixyl	77732-09-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxamyl	23135-22-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxamyl-oxime	30558-43-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Oxydemeton-methyl	301-12-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxydemeton-methyl (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Paclobutrazol	76738-62-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Paraoxon-ethyl	311-45-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Paraoxon-methyl	950-35-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Penconazole	66246-88-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pencycuron	66063-05-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pendimethalin	40487-42-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pentachlor	2307-68-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phenmedipham	13684-63-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Phorate	298-02-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phorate (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Phorate-sulfone	2588-04-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phorate-sulfoxide	2588-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phosmet	732-11-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phosphamidon	13171-21-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phoxim	14816-18-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Picoxystrobin	117428-22-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Piperonyl butoxide	51-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb	23103-98-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb, desmethyl-	30614-22-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb, desmethyl-formamido-	27218-04-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Primisulfuron-methyl	86209-51-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prochloraz	67747-09-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Promecarb	2631-37-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prometon	1610-18-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prometryn	7287-19-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Propamocarb (sum)	24579-73-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Propargite	2312-35-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Propazin	139-40-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

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Propham	122-42-9	mg / kg	0,030	0,00	S [LC-MS/MS] // LA-LC [†]
Propiconazole (sum of isomers)	60207-90-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Propoxur	114-26-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Propoxycarbazone	145026-81-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Proquinazid	189278-12-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Prosulfocarb	52888-80-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Prosulfuron	94125-34-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pymetrozine	123312-89-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyraclostrobin	175013-18-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyraflufen-ethyl	129630-19-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrethrins	8003-34-7	mg / kg	0,500	0,00	S [LC-MS/MS] // LA-LC [†]
Pyridate	55512-33-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrimethanil	53112-28-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrimidifen	105779-78-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyriproxyfen	95737-68-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Quizalofop ethyl	76578-14-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Rabenzazole	40341-04-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Rimsulfuron	122931-48-0	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC [†]
Rotenone	83-79-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Sebuthylazine	7286-69-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Sethoxydim	74051-80-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Silafluofen	105024-66-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LC [†]
Simazine	122-34-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Simazine, desethyl-	1007-28-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Simeconazole	149508-90-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Spinosad (Summe)	168316-95-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Spirodiclofen	148477-71-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spiromesifen	283594-90-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spirotetramat	203313-25-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spiroxamine	118134-30-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tebuconazol	107534-96-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tebufenozide	112410-23-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tebufenpyrad	119168-77-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Teflubenzuron	83121-18-0	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LC [†]
TEPP	107-49-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbacil	5902-51-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos	13071-79-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos-sulfon	56070-16-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos-sulfoxide	10548-10-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbutylazine	5915-41-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbutylazine, desethyl-	30125-63-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbutryn	886-50-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tetraconazole	112281-77-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]

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Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Thiabendazole	148-79-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiabendazole, 5-hydroxy-	948-71-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiacloprid	111988-49-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiamethoxam	153719-23-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiazafurion	25366-23-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thifensulfuron methyl	79277-27-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiodicarb	59669-26-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox	39196-18-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox-sulfone	39184-59-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox-sulfoxide	39184-27-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiometon	640-15-3	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Thionazin	297-97-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiophanate (-ethyl)	23564-06-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiophanate-methyl	23564-05-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tiocarbazil	36756-79-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triadimefon	43121-43-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triadimenol	55219-65-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triamiphos	1031-47-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triasulfuron	82097-50-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triazamate	112143-82-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triazophos	24017-47-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tribenuronmethyl	101200-48-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trichlorfon	52-68-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Tricyclazol	41814-78-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Tridemorph	81412-43-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trietazine	1912-26-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trifloxystrobin	141517-21-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trifloxysulfuron	145099-21-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflumizol/FM-6-1 (Sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Triflumizole	99387-89-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triflumuron	64628-44-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflusulfuronmethyl	126535-15-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triforine	26644-46-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trimethacarb, 3,4,5-	2686-99-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triticonazole	131983-72-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Uniconazole	83657-22-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion	2275-23-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion-sulfone	70898-34-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion-sulfoxide	20300-00-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Zoxamid	156052-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
! Pesticides screened (other)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN

AR-21-ST-060861-01

Scope of screened pesticides: SPGG4

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Aminomethylphosphonic acid (AMPA)	1066-51-9	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158
Glufosinate	51276-47-2	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158
Glyphosate	1071-83-6	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158

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Eurofins Polska Sp. z o.o.
 Aleja Wojska Polskiego 90 A
 PL-82 200 Malbork
 POLAND
 Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
 www.eurofins.pl

NapiFeryn BioTech Sp. z o.o.
 ul. Dubois 114/116
 93-465 Łódź
 POLSKA

Issue date 19.05.2021

Analytical report AR-21-ST-067692-01

Sample Code 720-2021-00100298

* Type of sample	protein isolate
* Prescriber	005-32419-2792208
* Purchase order date	NapiFeryn BioTech Sp. z o.o.
Reception date	10.05.2021
Transport by	11.05.2021
Sample condition	Customer
* Sampling Person	acceptable
* Type of sampling	principal
* Purpose of the testing	to guarantee its representativeness
Client sample code	technological sample
* Packaging	R-03#57
Number of tested samples	Plastic bottle
Start analysis	1
End Analysis	12.05.2021
	18.05.2021

Results

LP131 Multimethod for pesticides in cereals and cereal products. (#)

Method NMKL 195 mod., LC-MS/MS

Subcontracted to the Eurofins laboratory Eurofins Food & Feed Testing Sweden (Lidköping)

2,4-DB	<0,010	mg/kg
2,4-Dimethylphenylformamide	<0,010	mg/kg
Abamectin	<0,050	mg/kg
Acephate	<0,010	mg/kg
Acetamiprid	<0,010	mg/kg
Acrinathrin	<0,010	mg/kg
Aldicarb	<0,010	mg/kg
Aldicarb-sulfone	<0,010	mg/kg
Aldicarb-sulfoxide	<0,010	mg/kg
Aldrin	<0,010	mg/kg
Ametoctradin	<0,010	mg/kg
Amitraz	<0,010	mg/kg

AMTT	<0,050	mg/kg
Azinphos-ethyl	<0,010	mg/kg
Azinphos-methyl	<0,010	mg/kg
Azoxystrobin	<0,010	mg/kg
Benalaxyl	<0,010	mg/kg
Benfuracarb	<0,010	mg/kg
Bentazone	<0,010	mg/kg
Benzovindiflupyr	<0,010	mg/kg
Bifenthrin	<0,010	mg/kg
Biphenyl	<0,010	mg/kg
Bitertanol	<0,010	mg/kg
Bixafen	<0,010	mg/kg
Boscalid	<0,010	mg/kg
Bromophos-ethyl	<0,010	mg/kg
Bromophos-methyl	<0,010	mg/kg
Bromopropylate	<0,010	mg/kg
Bromoxynil	<0,010	mg/kg
Bromuconazole	<0,010	mg/kg
Bupirimate	<0,010	mg/kg
Buprofezin	<0,010	mg/kg
BYI08330 enol-glucoside	<0,050	mg/kg
BYI08330-enol	<0,050	mg/kg
BYI08330-ketohydroxy	<0,050	mg/kg
BYI08330-monohydroxy	<0,050	mg/kg
Cadusafos	<0,010	mg/kg
Captan	<0,050	mg/kg
Carbaryl	<0,010	mg/kg
Carbendazim	<0,010	mg/kg
Carbofuran	<0,010	mg/kg
Carbofuran 3-OH	<0,010	mg/kg
Carbosulfan	<0,010	mg/kg
Carboxin	<0,010	mg/kg
Carfentrazone-ethyl	<0,010	mg/kg
Carpropamid	<0,010	mg/kg
Chlorantraniliprole	<0,010	mg/kg
Chlordane-alpha	<0,010	mg/kg
Chlordane-gamma	<0,010	mg/kg
Chlorfenapyr	<0,050	mg/kg
Chlorfenvinphos	<0,010	mg/kg
Chlorfluazuron	<0,010	mg/kg
Chlorobenzilate	<0,010	mg/kg
Chlorothalonil	<0,050	mg/kg
Chlorpropham (CIPC)	<0,050	mg/kg
Chlorpyrifos-ethyl	<0,010	mg/kg
Chlorpyrifos-methyl	<0,010	mg/kg
Cinmethylin	<0,010	mg/kg
Clofentezine	<0,010	mg/kg
Clomazone	<0,010	mg/kg
Clothianidin	<0,010	mg/kg
Cyanazine	<0,010	mg/kg
Cyazofamid	<0,010	mg/kg

Cyflufenamid	<0,010	mg/kg
Cyfluthrin	<0,010	mg/kg
Cyfluthrin beta	<0,010	mg/kg
Cyhalofop-butyl	<0,010	mg/kg
Cyhalothrin, lambda-	<0,010	mg/kg
Cymoxanil	<0,010	mg/kg
Cypermethrin	<0,010	mg/kg
Cypermethrin, alpha-	<0,010	mg/kg
Cyproconazole	<0,010	mg/kg
Cyprodinil	<0,010	mg/kg
D 2,4-	<0,010	mg/kg
D 2,4-methylester	<0,010	mg/kg
DDD, p,p'-	<0,010	mg/kg
DDE, p,p'-	<0,010	mg/kg
DDT, o,p'-	<0,010	mg/kg
DDT, p,p'-	<0,010	mg/kg
Deltamethrin	<0,010	mg/kg
Demeton-S-methyl	<0,010	mg/kg
Demeton-S-methyl-sulfone	<0,010	mg/kg
Demeton-S-methyl-sulfoxide	<0,010	mg/kg
Diazinon	<0,010	mg/kg
Dicamba	<0,050	mg/kg
Dichlofluanid	<0,050	mg/kg
Dichloranilin-3,5	<0,010	mg/kg
Dichlorvos	<0,010	mg/kg
Dicloran	<0,010	mg/kg
Diclorprop	<0,010	mg/kg
Dicofol, p,p'-	<0,050	mg/kg
Dicrotophos	<0,010	mg/kg
Dieldrin	<0,010	mg/kg
Diethofencarb	<0,010	mg/kg
Difenoconazole	<0,010	mg/kg
Diffubenzuron	<0,010	mg/kg
Diiflufenican	<0,010	mg/kg
Dimethoate	<0,010	mg/kg
Dimethomorph	<0,010	mg/kg
Diniconazole	<0,010	mg/kg
Dinocap	<0,010	mg/kg
Diphenylamine	<0,010	mg/kg
Disulfoton	<0,010	mg/kg
Disulfoton sulfone	<0,010	mg/kg
Disulfoton sulfoxide	<0,010	mg/kg
DMSA	<0,010	mg/kg
DMST	<0,010	mg/kg
Dodine	<0,050	mg/kg
Emamectin	<0,010	mg/kg
Endosulfan-alpha	<0,010	mg/kg
Endosulfan-beta	<0,010	mg/kg
Endosulfan-sulfate	<0,010	mg/kg
Endrin	<0,050	mg/kg
EPN	<0,010	mg/kg

Epoxiconazole	<0,010	mg/kg
Esfenvalerate	<0,010	mg/kg
Ethion	<0,010	mg/kg
Ethirimol	<0,010	mg/kg
Ethoprophos	<0,010	mg/kg
Etofenprox	<0,010	mg/kg
Etoxazole	<0,010	mg/kg
Etrimfos	<0,010	mg/kg
Famoxadone	<0,010	mg/kg
Fenamidone	<0,010	mg/kg
Fenamiphos	<0,010	mg/kg
Fenamiphos-sulfone	<0,010	mg/kg
Fenamiphos-sulfoxide	<0,010	mg/kg
Fenarimol	<0,010	mg/kg
Fenazaquin	<0,010	mg/kg
Fenbuconazole	<0,010	mg/kg
Fenchlorphos-oxon	<0,010	mg/kg
Fenhexamid	<0,010	mg/kg
Fenitrothion	<0,010	mg/kg
Fenoxaprop-P	<0,050	mg/kg
Fenoxycarb	<0,010	mg/kg
Fenpicoxamid	<0,010	mg/kg
Fenpropathrin	<0,010	mg/kg
Fenpropidin	<0,010	mg/kg
Fenpropimorph	<0,010	mg/kg
Fenpyrazamine	<0,010	mg/kg
Fenpyroximate	<0,010	mg/kg
Fenthion	<0,010	mg/kg
Fenthion sulfone	<0,010	mg/kg
Fenthion-oxon	<0,010	mg/kg
Fenthion-oxon-sulfoxide	<0,010	mg/kg
Fenthion-sulfoxide	<0,010	mg/kg
Fenthion-oxon-sulphone	<0,010	mg/kg
Fenvalerate	<0,010	mg/kg
Fipronil	<0,010	mg/kg
Fipronil-sulfone	<0,010	mg/kg
Flamprop	<0,010	mg/kg
Flonicamid	<0,010	mg/kg
Florasulam	<0,010	mg/kg
Florpyrauxifen-benzyl	<0,010	mg/kg
Fluazifop	<0,010	mg/kg
Fluazifop-P-butyl	<0,010	mg/kg
Flubendiamide	<0,010	mg/kg
Fludioxonil	<0,010	mg/kg
Flufenacet	<0,010	mg/kg
Flufenoxuron	<0,010	mg/kg
Fluopicolid	<0,010	mg/kg
Fluopyram	<0,010	mg/kg
Fluoxastrobin	<0,010	mg/kg
Flupyradifurone	<0,010	mg/kg
Fluquinconazole	<0,010	mg/kg

Fluroxypyr	<0,010	mg/kg
Flusilazole	<0,010	mg/kg
Flutolanil	<0,010	mg/kg
Flutriafol	<0,010	mg/kg
Fluvalinate (sum of isomers)	<0,010	mg/kg
Fluxapyroxad	<0,010	mg/kg
Folpet	<0,050	mg/kg
Formothion	<0,050	mg/kg
Fosthiazate	<0,010	mg/kg
Fuberidazole	<0,010	mg/kg
Halauxifen	<0,010	mg/kg
Halauxifen-methyl	<0,010	mg/kg
Haloxypop	<0,010	mg/kg
Haloxypop-2-ethoxyethyl	<0,010	mg/kg
Haloxypop-R-methyl	<0,010	mg/kg
HCH, alpha-	<0,010	mg/kg
HCH, beta-	<0,010	mg/kg
HCH, delta-	<0,010	mg/kg
HCH, gamma- (Lindane)	<0,010	mg/kg
Heptachlor	<0,010	mg/kg
Heptachlorepoxyde, cis-	<0,050	mg/kg
Heptachlorepoxyde, trans-	<0,050	mg/kg
Hexachlorobenzene (HCB)	<0,010	mg/kg
Hexaconazole	<0,010	mg/kg
Hexythiazox	<0,010	mg/kg
Imazalil	<0,010	mg/kg
Imidacloprid	<0,010	mg/kg
Indoxacarb (sum, R+S isomers)	<0,010	mg/kg
Ioxynil	<0,010	mg/kg
Iprodione	<0,010	mg/kg
Iprovalicarb	<0,010	mg/kg
Isocarbofos	<0,050	mg/kg
Isofenphos	<0,010	mg/kg
Isofenphos-methyl	<0,010	mg/kg
Isoprocarb	<0,010	mg/kg
Isoprothiolane	<0,010	mg/kg
Isoproturon	<0,010	mg/kg
Isopyrazam	<0,010	mg/kg
Isotianil	<0,010	mg/kg
Isoxaben	<0,010	mg/kg
Isoxaflutole	<0,010	mg/kg
Kresoxim-methyl	<0,010	mg/kg
Linuron	<0,010	mg/kg
Lufenuron	<0,010	mg/kg
Malathion	<0,010	mg/kg
Malathion-O-analogue	<0,010	mg/kg
Mandestrobin	<0,010	mg/kg
Mandipropamid	<0,010	mg/kg
MCPA	<0,010	mg/kg
MCPA-metylester	<0,010	mg/kg
MCPB	<0,050	mg/kg

Mecoprop	<0,010	mg/kg
Mepanipyrim	<0,010	mg/kg
Metalaxyl	<0,010	mg/kg
Metalaxyl-M	<0,010	mg/kg
Metconazole	<0,010	mg/kg
Methacrifos	<0,010	mg/kg
Methamidophos	<0,010	mg/kg
Methidathion	<0,010	mg/kg
Methiocarb	<0,010	mg/kg
Methiocarb sulfoxide	<0,010	mg/kg
Methiocarb-sulfone	<0,010	mg/kg
Methomyl	<0,010	mg/kg
Methoprene	<0,050	mg/kg
Methoxychlor	<0,010	mg/kg
Methoxyfenozide	<0,010	mg/kg
Metobromuron	<0,010	mg/kg
Metolachlor	<0,010	mg/kg
Metominostrobin	<0,010	mg/kg
Metrafenone	<0,010	mg/kg
Metribuzin	<0,010	mg/kg
Milbemectin A3	<0,050	mg/kg
Milbemectin A4	<0,050	mg/kg
Molinate	<0,010	mg/kg
Monocrotophos	<0,010	mg/kg
Myclobutanil	<0,010	mg/kg
N-2,4-dimethylphenyl-N-methylformamidine	<0,010	mg/kg
Nitrofen	<0,010	mg/kg
Novaluron	<0,010	mg/kg
Omethoate	<0,010	mg/kg
Orthophenylphenol	<0,010	mg/kg
Orthosulfamuron	<0,010	mg/kg
Orysastrobin	<0,010	mg/kg
Oxadiargyl	<0,010	mg/kg
Oxadixyl	<0,010	mg/kg
Oxamyl	<0,010	mg/kg
Oxasulfuron	<0,010	mg/kg
Oxpoconazole	<0,010	mg/kg
Oxychlordane	<0,010	mg/kg
Oxyfluorfen	<0,010	mg/kg
Paclobutrazol	<0,010	mg/kg
Paraoxon-methyl	<0,010	mg/kg
Parathion	<0,010	mg/kg
Parathion-methyl	<0,010	mg/kg
Pefurazoate	<0,010	mg/kg
Penconazole	<0,010	mg/kg
Pencycuron	<0,010	mg/kg
Pendimethalin	<0,010	mg/kg
Penflufen	<0,010	mg/kg
Pentachloroaniline	<0,010	mg/kg
Penthiopyrad	<0,010	mg/kg
Permethrin	<0,010	mg/kg

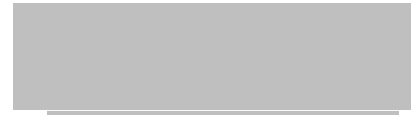
Phenthoate	<0,010	mg/kg
Phosalone	<0,010	mg/kg
Phosmet	<0,010	mg/kg
Phosmet-oxon	<0,050	mg/kg
Phosphamidon	<0,010	mg/kg
Phoxim	<0,010	mg/kg
Picolinafen	<0,010	mg/kg
Pirimicarb	<0,010	mg/kg
Pirimicarb-desmethyl	<0,010	mg/kg
Pirimicarb-Desmethylformamido	<0,010	mg/kg
Pirimiphos-methyl	<0,010	mg/kg
Probenazole	<0,010	mg/kg
Prochloraz	<0,010	mg/kg
Procymidone	<0,010	mg/kg
Profenofos	<0,010	mg/kg
Propaquizafop	<0,010	mg/kg
Propargite	<0,010	mg/kg
Propiconazole	<0,010	mg/kg
Propoxur	<0,010	mg/kg
Propyzamide	<0,010	mg/kg
Proquinazid	<0,010	mg/kg
Prosulfocarb	<0,010	mg/kg
Prothioconazole	<0,050	mg/kg
Prothioconazole-desthio	<0,010	mg/kg
Prothiofos	<0,050	mg/kg
Pydiflumetofen	<0,010	mg/kg
Pyraclostrobin	<0,010	mg/kg
Pyrazophos	<0,010	mg/kg
Pyrethrins (total)	<0,050	mg/kg
Pyridaben	<0,010	mg/kg
Pyridalyl	<0,010	mg/kg
Pyridate	<0,010	mg/kg
Pyrimethanil	<0,010	mg/kg
Pyriofenone	<0,010	mg/kg
Pyriproxyfen	<0,010	mg/kg
Pyroxsulam	<0,010	mg/kg
Quinclorac	<0,050	mg/kg
Quinoclamine	<0,010	mg/kg
Quinoxyfen	<0,010	mg/kg
Quintozene	<0,010	mg/kg
Quizalofop	<0,010	mg/kg
Quizalofop ethyl	<0,010	mg/kg
Resmethrins (I+II)	<0,010	mg/kg
Rotenone	<0,010	mg/kg
Sedaxane	<0,010	mg/kg
Spinetoram	<0,050	mg/kg
Spinosad (Spinosyn A+D)	<0,010	mg/kg
Spirodiclofen	<0,010	mg/kg
Spiromesifen	<0,010	mg/kg
Spirotetramat	<0,010	mg/kg
Spiroxamine	<0,010	mg/kg

Sulfoxaflor	<0,010	mg/kg
T -2,4,5	<0,010	mg/kg
Tebuconazole	<0,010	mg/kg
Tebufenozide	<0,010	mg/kg
Tebufenpyrad	<0,010	mg/kg
Tecnazene	<0,010	mg/kg
Teflubenzuron	<0,010	mg/kg
Tefluthrin	<0,010	mg/kg
Terbuthylazine	<0,010	mg/kg
Tetraconazole	<0,010	mg/kg
Tetradifon	<0,010	mg/kg
Tetramethrin	<0,010	mg/kg
TFNA	<0,010	mg/kg
TFNG	<0,010	mg/kg
Thiabendazole	<0,010	mg/kg
Thiacloprid	<0,010	mg/kg
Thiamethoxam	<0,010	mg/kg
Thiodicarb	<0,050	mg/kg
Thiometon	<0,010	mg/kg
Thiometon-sulfone	<0,010	mg/kg
Thiophanate-methyl	<0,010	mg/kg
Tiadinil	<0,010	mg/kg
Tolclofos-methyl	<0,010	mg/kg
Tolpyralate	<0,010	mg/kg
Tolyfluanid	<0,010	mg/kg
Triadimefon	<0,010	mg/kg
Triadimenol	<0,010	mg/kg
Tri-allate	<0,010	mg/kg
Triazophos	<0,010	mg/kg
Triazoxide	<0,010	mg/kg
Tribenuron methyl	<0,010	mg/kg
Tribromophenole 2,4,6	<0,010	mg/kg
Trichlorfon	<0,010	mg/kg
Trichlorophenole 2,4,6	<0,010	mg/kg
Triclopyr	<0,010	mg/kg
Tricyclazole	<0,010	mg/kg
Trifloxystrobin	<0,010	mg/kg
Triflumezopyrim	<0,010	mg/kg
Triflumuron	<0,010	mg/kg
Trifluralin	<0,010	mg/kg
Trinexapac (free acid)	<0,010	mg/kg
Trinexapac-ethyl	<0,010	mg/kg
Triticonazole	<0,010	mg/kg
Tritosulfuron	<0,010	mg/kg
Vinclozolin	<0,010	mg/kg
Zeta-Cypermethrin	<0,010	mg/kg
Zoxamide	<0,010	mg/kg

= Not accredited

A = Method accredited

x = Data provided by the customer



Paulina Matusiewicz Approved by:
Analytical Service Manager

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REPORT OF ANALYSIS No. 215730/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-03#57 Protein isolate
Sample received:	2021-04-16	Sample without any visible damages Order of 2021-04-15 The samples were delivered by Client
Analysis completed (the date of performance of the laboratory activity):	2021-04-23	
Report dated:	2021-04-23	

Test	Method	Unit	Result
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	2,9x10 ² [1,7x10 ² ;4,9x10 ²]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of Coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Escherichia coli in 10g	PN-ISO 7251:2006		not detected in 10 g
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Katarzyna Duczek, Specialist Analyst, Microbiology Laboratory Gdynia
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

The results relate to the analysed samples only. Unless otherwise specified given expanded measurement uncertainty was estimated for the coverage factor k=2 at 95% confidence level. Sampling uncertainty has not been taken into consideration. Unless otherwise specified when conformity is stated J.S. Hamilton Poland Sp. z o.o. applies the simple acceptance decision rule in accordance with ILAC-G8:09/2019. This Report cannot be reproduced partially without a prior written consent of J.S. Hamilton Poland Sp. z o.o. Responsibility of J.S. Hamilton Poland Sp. z o.o. is restricted exclusively to the results and statements presented in original copy of the Report. The service confirmed by this Report is subject to the General Terms and Conditions of Services of J.S. Hamilton Poland Sp. z o.o. published on www.hamilton.com.pl

* Test method accredited; # Test performed by external provider

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J.S. HAMILTON POLAND Sp. z o.o.
TESTING LABORATORY

ul. Chwaszczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00



REPORT OF ANALYSIS No. 241417/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-03#57 protein isolate Sample without any visible damages	
Sample received:	2021-04-28	Order of 2021-04-27 The samples were delivered by Client	
Analysis completed (the date of performance of the laboratory activity):	2021-05-05		
Report dated:	2021-05-05		

Test	Method	Unit	Result
# * Solvent residue	HH-MA-M 03-011, Headspace, GC-FID: 2019-01		
Ethanol		mg/kg	357 ± 107
Ethyl acetate		mg/kg	523 ± 157

Test: Solvent residue was performed by external provider with an accreditation number D-PL-14170-01-00

THE END OF THE REPORT

Authorized by: Ewa Gębał, Laboratories Cooperation Section Manager

Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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ul. Chwaszczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00



REPORT OF ANALYSIS No. 386854/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-03#57 protein isolate	
Sample received:		2021-07-05	
Analysis completed (the date of performance of the laboratory activity):		2021-07-08	
Report dated:		2021-07-08	
		Lot No: -	
		Expiration date: -	
		Sample without any visible damages	
		Order of 2021-07-01	
		The samples were delivered by Client	

Test	Method	Unit	Result
Sulphur dioxide	PN-EN 1988-1:2001	mg/kg	<10
* Benzoic acid and sorbic acid	PN-EN 12856:2002		
Benzoic acid and its salts expressed as benzoic acid		mg/kg	70 ± 10
Sorbic acid and its salts expressed as sorbic acid		mg/kg	< 10

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
Żaneta Nowińska-Słowik, Expert Analyst, Liquid Chromatography Laboratory
Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

The results relate to the analysed samples only. Unless otherwise specified given expanded measurement uncertainty was estimated for the coverage factor $k=2$ at 95% confidence level. Sampling uncertainty has not been taken into consideration. Unless otherwise specified when conformity is stated J.S. Hamilton Poland Sp. z o.o. applies the simple acceptance decision rule in accordance with ILAC-G8:09/2019. This Report cannot be reproduced partially without a prior written consent of J.S. Hamilton Poland Sp. z o.o. Responsibility of J.S. Hamilton Poland Sp. z o.o. is restricted exclusively to the results and statements presented in original copy of the Report. The service confirmed by this Report is subject to the General Terms and Conditions of Services of J.S. Hamilton Poland Sp. z o.o. published on www.hamilton.com.pl

* Test method accredited; # Test performed by external provider

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AGROLAB Polska Sp z o.o.

ul Balonna 1, 08-530 Dęblin, Poland
Tel.: +48 81 4400700, Fax: Tel.: +48 81 4400701
deblin@agrolab.pl www.agrolab.pl

Napiferyn Biotech Sp. z o.o.
Dubois 114/116
93-465 Łódź

Date 11.05.2021
Customer no. 105823

REPORT 341451 - 509733

Order 341451
Sample no. 509733
Sample acceptance 28.04.2021
Date of sampling No information.
Sample taker Client
Customer sample description R-03#57 (protein isolate)
Sample condition No objections
Packaging Plastic bottle, closed
Acceptance temperature [°C] 14

Unit Result Declaration Method

Physicochemical tests

Trypsin inhibitor ^{v)}	mg/g	3,2 +/- 0,4			Spectrophotometric method PN-EN ISO 14902:2005(LP)

Parameter-specific analytical measurement uncertainties and information regarding the method of calculation will be provided upon request if the reported results are above the parameter-specific limit of quantification.

v) external service

Externally provided service by

(LP) Krajowe Laboratorium Pasz, ul. Chmielna 2, 20-079 Lublin, accredited for the cited method according to PN-EN ISO/IEC 17025:2018-02, Accreditation procedure: AB 856

Methods

Spectrophotometric method PN-EN ISO 14902:2005

Start of testing: 28/04/2021
End of testing: 11/05/2021

The results are related only to the samples tested. In cases where the laboratory has not been responsible for sampling, the reported results apply to the samples as received. Duplication of this document or of parts of it requires the authorization from laboratory.



AGROLAB GROUP

Prezes: Paul Wimmer
Członek Zarządu: Wiebke Puschmann

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ul Balonna 1, 08-530 Dęblin, Poland
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Date 11.05.2021
Customer no. 105823

REPORT 341451 - 509733



Compiled: AGROLAB Polska mgr inż. Aleksandra Zugaj, Tel. +48/81 4400705
Customer service

Authorized:
mgr Katarzyna Wiśniewska, Kierownik Pracowni Analiz Instrumentalnych

The activities reported in this document are accredited according to PN-EN ISO/IEC 17025:2018-02. Only not accredited activities are identified by the symbol " *) " .

CERTIFICATE OF ANALYSIS

Report date	21.04.2021
Sample number	R-03#57
Sample name	Raptein™90 (rapeseed protein isolate)

Parameters	Method	Unit	Result
Total phenolics expressed as sinapic acid	Internal: IWA No. 2.5.4 version 001 from 30/04/2019; HPLC-UV	% DM	0,026 ± 0,001

THE END OF THE REPORT

Authorized by:

Analytical Specialist



(signature)

Approved by:

Analysis and Application Development



(signature)



Eurofins Polska Sp. z o.o.
Aleja Wojska Polskiego 90 A
PL-82 200 Malbork
POLAND
Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
www.eurofins.pl



AB 1334

NapiFeryn BioTech Sp. z o.o.
ul. Dubois 114/116
93-465 Łódź
POLSKA

Issue date 14.06.2021

Analytical report AR-21-ST-070127-01

Sample Code 720-2021-00104470

* Type of sample	protein isolate
* Prescriber	005-32419-2792893
* Purchase order date	NapiFeryn BioTech Sp. z o.o.
Reception date	13.05.2021
Transport by	14.05.2021
Sample condition	Courier
* Sampling Person	acceptable
* Type of sampling	principal
* Purpose of the testing	to guarantee its representativeness
Client sample code	technological sample
* Packaging	R-06#35
Number of tested samples	plastic container with a plastic lid
Start analysis	1
End Analysis	14.05.2021
	22.05.2021

Results

A7126 Ochratoxin A (food) (A)

Method DIN EN 14132 (2009-09), mod., IAC-LC-FLD
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00
Ochratoxin A (OTA) <0,5 * µg/kg

D1004 Amino acids (acid hydrolysis) (A)

Method AMSUR, IC-UV
Eurofins Vitamin Testing Denmark, accreditation nr. 581

Alanine	4,38	g/100 g	± 0.613
Arginine	6,41	g/100 g	± 0.897
Aspartic acid	9,49	g/100 g	± 1.329
Glutamic acid	20,2	g/100 g	± 2.828
Glycine	5,22	g/100 g	± 0.731
Histidine	2,33	g/100 g	± 0.326
Hydroxyproline	<0,05 (LOQ)	g/100 g	
Isoleucine	3,79	g/100 g	± 0.531

Leucine	7,37	g/100 g	± 1.032
Lysine	4,59	g/100 g	± 0.643
Ornithine	<0,05 (LOQ)	g/100 g	
Phenylalanine	4,21	g/100 g	± 0.589
Proline	4,98	g/100 g	± 0.697
Serine	4,02	g/100 g	± 0.563
Threonine	4,16	g/100 g	± 0.582
Tyrosine	2,73	g/100 g	± 0.382
Valine	5,10	g/100 g	± 0.714
DJ009 Tryptophane (A)			
Method	EU 152/2009, LC-FLD		
Eurofins Vitamin Testing Denmark, accreditation nr. 581			
Tryptophan (Total)	1,35	g/100 g	± 0.135
DJ011 Cysteine+Cystine & methionine (ox-amino acid) (A)			
Method	IC-UV		
Eurofins Vitamin Testing Denmark, accreditation nr. 581			
Cystein +Cystine	1,35	g/100 g	± 0.189
Methionine	1,84	g/100 g	± 0.258
J1003 Arsenic (As) (A)			
Method	§64 LFGB L 00.00-19/3, GF-AAS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Arsenic (As)	<0,1	* mg/kg	
JCAA1 Acrylamide in Food (A)			
Method	metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Acrylamide	<30	* µg/kg	
JCHG2 Mercury (Hg) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Mercury [Hg]	<0,005	* mg/kg	
JCHRU Lead (Pb) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Lead (Pb)	270	µg/kg	± 54
JCM04 Cadmium (Cd) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Cadmium (Cd)	0,19	mg/kg	± 0.037
JJ006 Aflatoxins B1, B2, G1, G2 (food) (A)			
Method	DIN EN 14123 (2008-03), mod., IAC-LC-FLD		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Aflatoxin B1	<0,1	* µg/kg	
Aflatoxin B2	<0,1	* µg/kg	
Aflatoxin G1	<0,1	* µg/kg	
Aflatoxin G2	<0,1	* µg/kg	
Sum of all positive Aflatoxins	<0,4	* µg/kg	
JJ088 Fumonisine B1, B2, B3 (maize and products derived from maize) (A)			
Method	metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Fumonisin B1 (FB1)	<20	* µg/kg	
Fumonisin B2 (FB2)	<20	* µg/kg	
Fumonisin B3 (FB3)	<20	* µg/kg	
Fumonisin sum (B1+B2)	<40	* µg/kg	

Fumonisin sum (B1+B2+B3)		<60	*	µg/kg	
JJ0CT	Aluminium (Al) (A)				
Method	EN ISO 17294-2-E29, ICP-MS				
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00					
Aluminium		0,8		mg/kg	± 0.4
JJ0FF	Fusarium toxins big (DON, ZON T2, HT2, NIV, ADON, DAS, FX) (A)				
Method	metoda własna, LC-MS/MS				
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00					
15-Acetyldeoxynivalenol (15-ADON)		<20	*	µg/kg	
3-Acetyldeoxynivalenol (3-ADON)		<20	*	µg/kg	
Deoxynivalenol (Vomitoxin)		<20	*	µg/kg	
Diacetoxyscirpenol (DAS)		<10	*	µg/kg	
Fusarenone X (FX)		<20	*	µg/kg	
HT-2 Toxin		<10	*	µg/kg	
Nivalenol (NIV)		<20	*	µg/kg	
sum T-2 HT-2 toxin		<20	*	µg/kg	
T-2 Toxin		<10	*	µg/kg	
Zearalenone (ZON)		<10	*	µg/kg	
QD08G	Glucosinolate in Canola Products (A)				
Method	LC-UV/VIS				
Eurofins Scientific Inc. (Des Moines), accreditation nr. 2927.01					
4-Hydroxyglucobrassicin		<0,05		µmol/g	
Epiprogoitrin		<0,05		µmol/g	
Glucolysyn		<0,05		µmol/g	
Glucobrassicinapin		<0,05		µmol/g	
Glucobrassicin		<0,05		µmol/g	
Glucoerucin		<0,05		µmol/g	
Glucoiberin		<0,05		µmol/g	
Gluconapin		<0,05		µmol/g	
Gluconapoleiferin		<0,05		µmol/g	
Gluconasturtiin		<0,05		µmol/g	
Glucoraphanin		<0,05		µmol/g	
Glucosinolates		<0,05		µmol/g	
Glucotropaeolin		<0,05		µmol/g	
Neoglucobrassicin		<0,05		µmol/g	
Progoitrin		<0,05		µmol/g	
Sinabin		<0,05		µmol/g	
QD495	Phytic Acid (#)				
Method	Analytical Biochemistry Vol. 77:536-539 (1977), ICP-OES				
Subcontracted to the Eurofins laboratory Eurofins Scientific Inc. (Des Moines)					
Phytic Acid		1,00		%	
ST05Z	Protein content (Nx6,25) (A)				
Method	ISO 1871:2009, Titrimetry				
Nitrogen - Kjeldahl		14,97		%	± 2,40
Protein (Nx6,25)		93,56		%	± 14,97
ST0LH	Content of fat after hydrolysis (A)				
Method	PB/CH/16 wydanie 3 z dnia 09.11.2018, Gravimetry				
Content of fat after hydrolysis		<0,2		%	
ST0SI	Fatty acid composition (A)				
Method	PN EN ISO 12966-1:2015-01 + AC:2015-06, Method gas chromatography with flame ionization detection , G				
C 10:0 (Capric acid)		<0,1	*	%	
C 11:0 (Undecanoic acid)		<0,1	*	%	
C 12:0 (Lauric acid)		<0,1	*	%	

C 13:0 (Tridecanoic acid)	<0,1	*	%
C 14:0 (Myristic acid)	<0,1	*	%
C 14:1 (Myristoleic acid)	<0,1	*	%
C 15:0 (Anteisopentdecanoic acid)	<0,1	*	%
C 15:1 (Pentadecenoic acid) + Isomers	<0,1	*	%
C 16:0 (Palmitic acid)	<0,1	*	%
C 16:1 (Palmitoleic acid)	<0,1	*	%
C 17:0 (Margaric acid)	<0,1	*	%
C 17:1 (Heptadecenoic acid)	<0,1	*	%
C 18:0 (Stearic acid)	<0,1	*	%
C 18:1 c others	<0,1	*	%
C 18:1 C11	<0,1	*	%
C 18:1 n9 Octadecan acid	<0,1	*	%
C 18:1t (Elaidic Acid)	<0,1	*	%
C 18:2 (Linoleic acid)	<0,1	*	%
C 18:2 (trans/trans)	<0,1	*	%
C 18:3 (alpha-linolenic acid)	<0,1	*	%
C 18:3 (gamma-linolenic acid)	<0,1	*	%
C 18:3 trans	<0,1	*	%
C 18:4 (Octadecatetraenoic acid)	<0,1	*	%
C 20:0 (Arachidic acid)	<0,1	*	%
C 20:1 (Eicosenoic acid)	<0,1	*	%
C 20:2 Eicosadienoic acid n-6	<0,1	*	%
C 20:3 (Eicosatrienoic acid)	<0,1	*	%
C 20:4 Eicosatetraenoic/Arachidonic acid	<0,1	*	%
C 20:5 Eicosapentaenoic acid	<0,1	*	%
C 20:3 Eicosatrienoic acid n-6	<0,1	*	%
C 21:0 Henikanozanian metylu	<0,1	*	%
C 22:0 (Behenic acid)	<0,1	*	%
C 22:1 Docosenoic acid	<0,1	*	%
C 22:1 isomers	<0,1	*	%
C 22:2 (Docosadienoic acid)	<0,1	*	%
C 22:4 Docosatetraenoic acid	<0,1	*	%
C 22:5 Docosapentaenoic acid (Omega 3)	<0,1	*	%
C 22:6 omega 3	<0,1	*	%
C 23:0 (Tricosanoic acid)	<0,1	*	%
C 24:0 (Lignoceric acid)	<0,1	*	%
C 24:1 (Nervonic acid)	<0,1	*	%
C 4:0 Butanoic acid	<0,1	*	%
C 6:0 (Caproic acid)	<0,1	*	%
C 8:0 Octanoic acid	<0,1	*	%
Mono unsaturated fatty acids	<0,1	*	g/100 g
Omega-3 fatty acids	<0,1	*	g/100 g
Omega-6 fatty acids	<0,1	*	g/100 g
Omega-9 fatty acids	<0,1	*	g/100 g
Poly unsaturated fatty acids	<0,1	*	g/100 g
Saturated fatty acids	<0,1	*	g/100 g
Trans fatty acids	<0,1	*	g/100 g
ST0Y8 Ash total content (A)			
Method PN-A-79011-8:1998, Gravimetry			
Ash	1,91	%	± 0,40
ST0YE Water, dry mass content (A)			

Method PN-A-79011-3:1998, weight

Dry matter	96,6	%	± 7,7

Moisture (103 °C)	3,5	%	± 0,3

ST1MH Crude fiber content (A)

Method Dz.U.UEL54/1 z dn 26.2.2009(WE) nr152/2009 zał.III, Weight method

Crude fiber	<0,30	%	

* = less than the limit of quantification

= Not accredited

A = Method accredited

+/- Uncertainty of measurement presented as expanded uncertainty of measurement (95%; k=2).

x = Data provided by the customer

JUDGEMENT

Wyniki dla zawartości poszczególnych kwasów tłuszczowych oraz sumy izomerów trans kwasów tłuszczowych odnoszą się do tłuszczu [g/100g tłuszczu]; zawartości pozostałych grup kwasów tłuszczowych odnoszą się do próbki [g/100 g próbki].

Authorized by: Monika Miętus
Zastępca Kierownika Pracowni Chemicznej

Paulina Matusiewicz Approved by:
Analytical Service Manager

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7. The laboratory is not responsible for the data provided by customers. The data provided may affect the validity of the results.

REPORT OF ANALYSIS No. 275983/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-06#35 protein isolate Sample without any visible damages Order of 2021-05-12 The samples were delivered by Client
Sample received:	2021-05-17	
Analysis completed (the date of performance of the laboratory activity):	2021-05-28	
Report dated:	2021-05-28	

Test	Method	Unit	Result
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	<1,0x10 ¹
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of Coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Escherichia coli in 10g	PN-ISO 7251:2006		not detected in 10 g
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g
# * Solvent residue	HH-MA-M 03-011, Headspace, GC-FID: 2019-01		
Ethanol		mg/kg	279 ± 84
Ethyl acetate		mg/kg	104 ± 31

Test: Solvent residue was performed by external provider with an accreditation number D-PL-14170-01-00

THE END OF THE REPORT

Authorized by: Beata Zajkowska, Specialist Analyst, Laboratory Cooperation Section
Paulina Połosak, Expert Analyst, Microbiology Laboratory Gdynia
Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

The results relate to the analysed samples only. Unless otherwise specified given expanded measurement uncertainty was estimated for the coverage factor k=2 at 95% confidence level. Sampling uncertainty has not been taken into consideration. Unless otherwise specified when conformity is stated J.S. Hamilton Poland Sp. z o.o. applies the simple acceptance decision rule in accordance with ILAC-G8:09/2019. This Report cannot be reproduced partially without a prior written consent of J.S. Hamilton Poland Sp. z o.o. Responsibility of J.S. Hamilton Poland Sp. z o.o. is restricted exclusively to the results and statements presented in original copy of the Report. The service confirmed by this Report is subject to the General Terms and Conditions of Services of J.S. Hamilton Poland Sp. z o.o. published on www.hamilton.com.pl

* Test method accredited; # Test performed by external provider

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TESTING LABORATORY

ul. Chwaszczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00



REPORT OF ANALYSIS No. 386855/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-06#35 protein isolate	
Sample received:		2021-07-05	
Analysis completed (the date of performance of the laboratory activity):		2021-07-09	
Report dated:		2021-07-09	
		Lot No.: - Expiration date: - Sample without any visible damages	
		Order of 2021-07-01 The samples were delivered by Client	

Test	Method	Unit	Result
Sulphur dioxide	PN-EN 1988-1:2001	mg/kg	55 ± 8
* Benzoic acid and sorbic acid	PN-EN 12856:2002		
Benzoic acid and its salts expressed as benzoic acid		mg/kg	180 ± 30
Sorbic acid and its salts expressed as sorbic acid		mg/kg	< 10

THE END OF THE REPORT

Authorized by: Sandra Gumowska, Expert Analyst, Classical Analysis Laboratory
Żaneta Nowińska-Słowik, Expert Analyst, Liquid Chromatography Laboratory
Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

The results relate to the analysed samples only. Unless otherwise specified given expanded measurement uncertainty was estimated for the coverage factor $k=2$ at 95% confidence level. Sampling uncertainty has not been taken into consideration. Unless otherwise specified when conformity is stated J.S. Hamilton Poland Sp. z o.o. applies the simple acceptance decision rule in accordance with ILAC-G8:09/2019. This Report cannot be reproduced partially without a prior written consent of J.S. Hamilton Poland Sp. z o.o. Responsibility of J.S. Hamilton Poland Sp. z o.o. is restricted exclusively to the results and statements presented in original copy of the Report. The service confirmed by this Report is subject to the General Terms and Conditions of Services of J.S. Hamilton Poland Sp. z o.o. published on www.hamilton.com.pl

* Test method accredited; # Test performed by external provider

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Form PO-10/02a of 20.01.2020

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deblin@agrolab.pl www.agrolab.pl

Napiferyn Biotech Sp. z o.o.
Dubois 114/116
93-465 Łódź

Date 07.06.2021
Customer no. 105823

REPORT 343398 - 512600

Order 343398
Sample no. 512600
Sample acceptance 14.05.2021
Date of sampling No information.
Sample taker Client
Customer sample description R-06#35 (protein isolate)
Sample condition No objections
Packaging Plastic bottle, closed
Acceptance temperature [°C] +14

Unit Result Uncertainty Declaration Method

Physicochemical tests

Trypsin inhibitor ^{v)}	mg/g	1,0			Spectrophotometric method PN-EN ISO 14902:2005(LP)

Parameter-specific analytical measurement uncertainties and information regarding the method of calculation will be provided upon request if the reported results are above the parameter-specific limit of quantification.

Uncertainty does not take into account the uncertainty associated with sampling.

v) external service

Externally provided service by

(LP) Krajowe Laboratorium Pasz, ul. Chmielna 2, 20-079 Lublin, accredited for the cited method according to PN-EN ISO/IEC 17025:2018-02, Accreditation number: AB 856

Methods

Spectrophotometric method PN-EN ISO 14902:2005

Remarks

The measurement uncertainty for the trypsin inhibitor result is +/- 0,1 mg/g.

Start of testing: 14/05/2021

End of testing: 07/06/2021

The results are related only to the samples tested. In cases where the laboratory has not been responsible for sampling, the reported results apply to the samples as received. Duplication of this document or of parts of it requires the authorization from laboratory.

NIP 118-07-45-971
REGON 012270240
KRS 0000006477

Prezes: Paul Wimmer,
Członek Zarządu: Wiebke Puschmann

Sąd Rejonowy Lublin-Wschód z/s w Świdniku
VI Wydział Gospodarczy KRS

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deblin@agrolab.pl www.agrolab.pl

Date 07.06.2021
Customer no. 105823

REPORT 343398 - 512600



Compiled: AGROLAB Polska mgr inż. Aleksandra Zugaj, Tel. +48/81 4400705
Customer service

Authorized:
mgr Katarzyna Wiśniewska, Kierownik Pracowni Analiz Instrumentalnych

The activities reported in this document are accredited according to PN-EN ISO/IEC 17025:2018-02. Only not accredited activities are identified by the symbol " *) " .



CERTIFICATE OF ANALYSIS

Report date	12.05.2021
Sample number	R-06#35
Sample name	Raptein™90 (rapeseed protein isolate)

Parameters	Method	Unit	Result
Total phenolics expressed as sinapic acid	Internal: IWA No. 2.5.4 version 001 from 30/04/2019; HPLC-UV	% DM	0,001 ± 0,000

THE END OF THE REPORT

Authorized by:

Analytical Specialist

(signature)

Approved by:

Analysis and Application Development
Manager

(signature)



Eurofins Polska Sp. z o.o.
Aleja Wojska Polskiego 90 A
PL-82 200 Malbork
POLAND
Tel: +48 55 272 04 73, Fax: +48 55 272 04 75
www.eurofins.pl



AB 1334

NapiFeryn BioTech Sp. z o.o.
ul. Dubois 114/116
93-465 Łódź
POLSKA

Issue date 05.07.2021

Analytical report AR-21-ST-074596-01

Sample Code 720-2021-00113633

× Type of sample	Protein isolate
× Prescriber	005-32419-2794782
× Purchase order date	NapiFeryn BioTech Sp. z o.o.
× Client Purchase order nr.	21.05.2021
Reception date	13
Transport by	26.05.2021
Sample condition	Eurofins sample taker
× Sampling Person	acceptable
× Type of sampling	principal
× Purpose of the testing	to guarantee its representativeness
Client sample code	technological sample
× Lot/Los-Nr.	R-08#57
× Batch number	R-08#57
× Packaging	R-08
Number of tested samples	plastic container with a plastic lid
Start analysis	1
End Analysis	26.05.2021
	05.07.2021

Results

A7126 Ochratoxin A (food) (A)

Method DIN EN 14132 (2009-09), mod., IAC-LC-FLD
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00
Ochratoxin A (OTA)

<0,5 * µg/kg

D1004 Amino acids (acid hydrolysis) (A)

Method AMSUR, IC-UV
Eurofins Vitamin Testing Denmark, accreditation nr. 581

Alanine	4,29	g/100 g	± 0.601
Arginine	6,31	g/100 g	± 0.883
Aspartic acid	7,94	g/100 g	± 1.112
Glutamic acid	21,5	g/100 g	± 3.010
Glycine	5,13	g/100 g	± 0.718

Histidine	2,55	g/100 g	± 0.357
Hydroxyproline	0,172	g/100 g	± 0.034
Isoleucine	3,68	g/100 g	± 0.515
Leucine	7,49	g/100 g	± 1.049
Lysine	5,23	g/100 g	± 0.732
Ornithine	<0,05 (LOQ)	g/100 g	
Phenylalanine	3,83	g/100 g	± 0.536
Proline	5,46	g/100 g	± 0.764
Serine	3,97	g/100 g	± 0.556
Threonine	4,17	g/100 g	± 0.584
Tyrosine	2,46	g/100 g	± 0.344
Valine	5,19	g/100 g	± 0.727
DJ009	Tryptophane (A)		
Method	EU 152/2009, LC-FLD		
Eurofins Vitamin Testing Denmark, accreditation nr. 581			
Tryptophan (Total)	1,32	g/100 g	± 0.132
DJ011	Cysteine+Cystine & methionine (ox-amino acid) (A)		
Method	IC-UV		
Eurofins Vitamin Testing Denmark, accreditation nr. 581			
Cystein +Cystine	1,93	g/100 g	± 0.270
Methionine	1,89	g/100 g	± 0.265
J1003	Arsenic (As) (A)		
Method	§64 LFGB L 00.00-19/3, GF-AAS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Arsenic (As)	<0,1	* mg/kg	
JCAA1	Acrylamide in Food (A)		
Method	metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Acrylamide	<30	* µg/kg	
JCHG2	Mercury (Hg) (A)		
Method	DIN EN ISO 15763 (2010), ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Mercury [Hg]	<0,005	* mg/kg	
JCHRU	Lead (Pb) (A)		
Method	DIN EN ISO 15763 (2010), ICP-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Lead (Pb)	58	µg/kg	± 12
JCM04	Cadmium (Cd) (A)		
Method	DIN EN ISO 15763 (2010), ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Cadmium (Cd)	0,019	mg/kg	± 0.005
JJ006	Aflatoxins B1, B2, G1, G2 (food) (A)		
Method	DIN EN 14123 (2008-03), mod., IAC-LC-FLD		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Aflatoxin B1	<0,1	* µg/kg	
Aflatoxin B2	<0,1	* µg/kg	
Aflatoxin G1	<0,1	* µg/kg	
Aflatoxin G2	<0,1	* µg/kg	
Sum of all positive Aflatoxins	<0,4	* µg/kg	
JJ088	Fumonisin B1, B2, B3 (maize and products derived from maize) (A)		
Method	metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Fumonisin B1 (FB1)	<20	* µg/kg	
Fumonisin B2 (FB2)	<20	* µg/kg	

Fumonisin B3 (FB3)	<20	*	µg/kg
Fumonisin sum (B1+B2)	<40	*	µg/kg
Fumonisin sum (B1+B2+B3)	<60	*	µg/kg
JJ0CT Aluminium (Al) (A)			
Method	EN ISO 17294-2-E29, ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Aluminium	<0,5	*	mg/kg
JJ0FF Fusarium toxins big (DON, ZON T2, HT2, NIV, ADON, DAS, FX) (A)			
Method	metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
15-Acetyldeoxynivalenol (15-ADON)	<20	*	µg/kg
3-Acetyldeoxynivalenol (3-ADON)	<20	*	µg/kg
Deoxynivalenol (Vomitoxin)	<20	*	µg/kg
Diacetoxyscirpenol (DAS)	<10	*	µg/kg
Fusarenone X (FX)	<20	*	µg/kg
HT-2 Toxin	<10	*	µg/kg
Nivalenol (NIV)	<20	*	µg/kg
sum T-2 HT-2 toxin	<20	*	µg/kg
T-2 Toxin	<10	*	µg/kg
Zearalenone (ZON)	<10	*	µg/kg
QD08G Glucosinolate in Canola Products (A)			
Method	LC-UV/VIS		
Eurofins Scientific Inc. (Des Moines), accreditation nr. 2927.01			
4-Hydroxyglucobrassicin	<0,05		µmol/g
Epiprogoitrin	<0,05		µmol/g
Glucoalyssin	<0,05		µmol/g
Glucobrassicinapin	<0,05		µmol/g
Glucobrassicin	<0,05		µmol/g
Glucoerucin	<0,05		µmol/g
Glucoiberin	<0,05		µmol/g
Gluconapin	<0,05		µmol/g
Gluconapoleiferin	<0,05		µmol/g
Gluconasturtiin	<0,05		µmol/g
Glucoraphanin	<0,05		µmol/g
Glucosinolates (suma/sum)	<0,05		µmol/g
Glucotropaeolin	<0,05		µmol/g
Neoglucobrassicin	<0,05		µmol/g
Progoitrin	<0,05		µmol/g
Sinalbin	<0,05		µmol/g
QD495 Phytic Acid (#)			
Method	Analytical Biochemistry Vol. 77:536-539 (1977), ICP-OES		
Subcontracted to the Eurofins laboratory Eurofins Scientific Inc. (Des Moines)			
Kwas fitynowy/Phytic acid	1,20		%
ST05Z Protein content (Nx6,25) (A)			
Method	ISO 1871:2009, Titrimetry		
Nitrogen - Kjeldahl	15,05	%	± 2,41
Protein (Nx6,25)	94,06	%	± 15,05
ST0LH Content of fat after hydrolisis (A)			
Method	PB/CH/16 wydanie 3 z dnia 09.11.2018, Gravimetry		
Content of fat after hydrolisis	<0,20		%
ST0SI Fatty acid composition (A)			
Method	PN EN ISO 12966-1:2015-01 + AC:2015-06, Method gas chromatography with flame ionization detection , GC-FID		
C 10:0 (Capric acid)	<0,1	*	%

C 11:0 (Undecanoic acid)	<0,1	*	%
C 12:0 (Lauric acid)	<0,1	*	%
C 13:0 (Tridecanoic acid)	<0,1	*	%
C 14:0 (Myristic acid)	<0,1	*	%
C 14:1 (Myristoleic acid)	<0,1	*	%
C 15:0 (Anteisopentdecanoic acid)	<0,1	*	%
C 15:1 (Pentadecenoic acid) + Isomers	<0,1	*	%
C 16:0 (Palmitic acid)	<0,1	*	%
C 16:1 (Palmitoleic acid)	<0,1	*	%
C 17:0 (Margaric acid)	<0,1	*	%
C 17:1 (Heptadecenoic acid)	<0,1	*	%
C 18:0 (Stearic acid)	<0,1	*	%
C 18:1 c others	<0,1	*	%
C 18:1 C11	<0,1	*	%
C 18:1 n9 Octadecan acid	<0,1	*	%
C 18:1t (Elaidic Acid)	<0,1	*	%
C 18:2 (Linoleic acid)	<0,1	*	%
C 18:2 (trans/trans)	<0,1	*	%
C 18:3 (alpha-linolenic acid)	<0,1	*	%
C 18:3 (gamma-linolenic acid)	<0,1	*	%
C 18:3 trans	<0,1	*	%
C 18:4 (Octadecatetraenoic acid)	<0,1	*	%
C 20:0 (Arachidic acid)	<0,1	*	%
C 20:1 (Eicosenoic acid)	<0,1	*	%
C 20:2 Eicosadienoic acid n-6	<0,1	*	%
C 20:3 (Eicosatrienoic acid)	<0,1	*	%
C 20:4 Eicosatetraenoic/Arachidonic acid	<0,1	*	%
C 20:5 Eicosapentaenoic acid	<0,1	*	%
C 20:3 Eicosatrienoic acid n-6	<0,1	*	%
C 21:0 Henikanozanian metylu	<0,1	*	%
C 22:0 (Behenic acid)	<0,1	*	%
C 22:1 Docosenoic acid	<0,1	*	%
C 22:1 isomers	<0,1	*	%
C 22:2 (Docosadienoic acid)	<0,1	*	%
C 22:4 Docosatetraenoic acid	<0,1	*	%
C 22:5 Docosapentaenoic acid (Omega 3)	<0,1	*	%
C 22:6 omega 3	<0,1	*	%
C 23:0 (Tricosanoic acid)	<0,1	*	%
C 24:0 (Lignoceric acid)	<0,1	*	%
C 24:1 (Nervonic acid)	<0,1	*	%
C 4:0 Butanoic acid	<0,1	*	%
C 6:0 (Caproic acid)	<0,1	*	%
C 8:0 Octanoic acid	<0,1	*	%
Mono unsaturated fatty acids	<0,1	*	g/100 g
Omega-3 fatty acids	<0,1	*	g/100 g
Omega-6 fatty acids	<0,1	*	g/100 g
Omega-9 fatty acids	<0,1	*	g/100 g
Poly unsaturated fatty acids	<0,1	*	g/100 g
Saturated fatty acids	<0,1	*	g/100 g
Trans fatty acids	<0,1	*	g/100 g
ST0Y8			
Ash total content (A)			
Method	PN-A-79011-8:1998, Gravimetry		

Ash		2,33	%	± 0,49
ST0YE	Water, dry mass content (A)			
Method	PN-A-79011-3:1998, weight			
Dry matter		96,2	%	± 7,7
Moisture (103 °C)		3,8	%	± 0,3
ST1MH	Crude fiber content (A)			
Method	Dz.U.UEL54/1 z dn 26.2.2009(WE) nr152/2009 zał.III, Weight method			
Crude fiber		<0,30	%	

* = less than the limit of quantification

= Not accredited

A = Method accredited

+/- Uncertainty of measurement presented as expanded uncertainty of measurement (95%; k=2).

x = Data provided by the customer

Authorized by: Monika Miętus
Zastępca Kierownika Pracowni Chemicznej

Paulina Matusiewicz Approved by:
Analytical Service Manager

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5. Approved analytical results made by subcontractors are authorized by persons authorized in the laboratory of the subcontractor.

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7. The laboratory is not responsible for the data provided by customers. The data provided may affect the validity of the results.

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REPORT OF ANALYSIS No. 302702/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=0	
Sample received:	2021-05-29	Date of analysis: 29.05.2021	
Analysis completed (the date of performance of the laboratory activity):	2021-06-09	Sample without any visible damages	
Report dated:	2021-06-09	Order of 2021-05-24	
		The samples were delivered by Client	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% d.m.	>99,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	4,9 ± 0,3
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	<1,0x10 ¹
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Escherichia coli in 10g	PN-ISO 7251:2006		not detected in 10 g
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Agnieszka Duda, Expert Analyst, Microbiology Laboratory Gdynia
Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
Joanna Śpiewak, Senior Specialist Analyst, Classical Analysis Laboratory
Approved by: Hanna Wachowska, Laboratory Director (*Approved with electronic signature*)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

The results relate to the analysed samples only. Unless otherwise specified given expanded measurement uncertainty was estimated for the coverage factor k=2 at 95% confidence level. Sampling uncertainty has not been taken into consideration. Unless otherwise specified when conformity is stated J.S. Hamilton Poland Sp. z o.o. applies the simple acceptance decision rule in accordance with ILAC-G8:09/2019. This Report cannot be reproduced partially without a prior written consent of J.S. Hamilton Poland Sp. z o.o. Responsibility of J.S. Hamilton Poland Sp. z o.o. is restricted exclusively to the results and statements presented in original copy of the Report. The service confirmed by this Report is subject to the General Terms and Conditions of Services of J.S. Hamilton Poland Sp. z o.o. published on www.hamilton.com.pl

* Test method accredited; # Test performed by external provider

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J.S. HAMILTON POLAND Sp. z o.o.
TESTING LABORATORY

ul. Chwaszczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00



REPORT OF ANALYSIS No. 299161/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate	
Sample received:	2021-05-28	Lot: -	
Analysis completed (the date of performance of the laboratory activity):	2021-06-09	Expiration date: -	
Report dated:	2021-06-09	Sample without any visible damages	
		Order of 2021-05-21	
		The samples were delivered by Client	

Test	Method	Unit	Result
# * Solvent residue	HH-MA-M 03-011, Headspace, GC-FID: 2019-01		
Ethanol		mg/kg	253 ± 76
Ethyl acetate		mg/kg	108 ± 32

Test: Solvent residue was performed by external provider with an accreditation number D-PL-14170-01-00

THE END OF THE REPORT

Authorized by: Beata Zajkowska, Specialist Analyst, Laboratory Cooperation Section
Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

The results relate to the analysed samples only. Unless otherwise specified given expanded measurement uncertainty was estimated for the coverage factor k=2 at 95% confidence level. Sampling uncertainty has not been taken into consideration. Unless otherwise specified when conformity is stated J.S. Hamilton Poland Sp. z o.o. applies the simple acceptance decision rule in accordance with ILAC-G8:09/2019. This Report cannot be reproduced partially without a prior written consent of J.S. Hamilton Poland Sp. z o.o. Responsibility of J.S. Hamilton Poland Sp. z o.o. is restricted exclusively to the results and statements presented in original copy of the Report. The service confirmed by this Report is subject to the General Terms and Conditions of Services of J.S. Hamilton Poland Sp. z o.o. published on www.hamilton.com.pl

* Test method accredited; # Test performed by external provider

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Form PO-10/02b of 20.01.2020

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TESTING LABORATORY

ul. Chwaszczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00



AGROLAB Polska Sp z o.o.

ul Balonna 1, 08-530 Dęblin, Poland
Tel.: +48 81 4400700, Fax: Tel.: +48 81 4400701
deblin@agrolab.pl www.agrolab.pl

Napiferyn Biotech Sp. z o.o.
Dubois 114/116
93-465 Łódź

Date 07.06.2021
Customer no. 105823

REPORT 344622 - 514552

Order 344622
Sample no. 514552
Sample acceptance 25.05.2021
Date of sampling No information.
Sample taker Client
Customer sample description R-08#57 (protein isolate)
Sample condition No objections
Packaging Plastic bottle, closed
Acceptance temperature [°C] +14

Unit Result Uncertainty Declaration Method

Physicochemical tests

Trypsin inhibitor ^{v)}	mg/g	1,4			Spectrophotometric method PN-EN ISO 14902:2005(LP)

Parameter-specific analytical measurement uncertainties and information regarding the method of calculation will be provided upon request if the reported results are above the parameter-specific limit of quantification.

Uncertainty does not take into account the uncertainty associated with sampling.

v) external service

Externally provided service by

(LP) Krajowe Laboratorium Pasz, ul. Chmielna 2, 20-079 Lublin, accredited for the cited method according to PN-EN ISO/IEC 17025:2018-02, Accreditation number: AB 856

Methods

Spectrophotometric method PN-EN ISO 14902:2005

Remarks

The measurement uncertainty of the trypsin inhibitor dl result is +/- 0,2 mg/g.

Start of testing: 25/05/2021

End of testing: 07/06/2021

The results are related only to the samples tested. In cases where the laboratory has not been responsible for sampling, the reported results apply to the samples as received. Duplication of this document or of parts of it requires the authorization from laboratory.

NIP 118-07-45-971
REGON 012270240
KRS 0000006477

Prezes: Paul Wimmer,
Członek Zarządu: Wiebke Puschmann

Sąd Rejonowy Lublin-Wschód z/s w Świdniku
VI Wydział Gospodarczy KRS

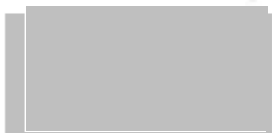
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AGROLAB Polska Sp z o.o.

ul Balonna 1, 08-530 Dęblin, Poland
Tel.: +48 81 4400700, Fax: Tel.: +48 81 4400701
deblin@agrolab.pl www.agrolab.pl

Date 07.06.2021
Customer no. 105823

REPORT 344622 - 514552



Compiled: AGROLAB Polska mgr inż. Aleksandra Zugaj, Tel. +48/81 4400705
Customer service

Authorized:
mgr Katarzyna Wiśniewska, Kierownik Pracowni Analiz Instrumentalnych

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CERTIFICATE OF ANALYSIS

Report date	09.05.2021
Sample number	R-08#57
Sample name	Raptein™90 (rapeseed protein isolate)

Parameters	Method	Unit	Result
Total phenolics expressed as sinapic acid	Internal: IWA No. 2.5.4 version 001 from 30/04/2019; HPLC-UV	% DM	0,004 ± 0,000

THE END OF THE REPORT

Authorized by:
Analytical Specialist



(signature)

Approved by:
Analysis and Application Development
Manager

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(signature)



Eurofins Polska Sp. z o.o.
Aleja Wojska Polskiego 90 A
PL-82 200 Malbork
POLAND
Tel: +48 55 272 04 73, Fax:
www.eurofins.pl



AB 1334

NapiFeryn BioTech Sp. z o.o.
ul. Dubois 114/116
93-465 Łódź
POLSKA

Issue date 26.08.2021

Analytical report AR-21-ST-105036-01

Sample Code 720-2021-00159911

* Type of sample	protein isolate
* Prescriber	005-32419-2805902
* Purchase order date	NapiFeryn BioTech Sp. z o.o.
Reception date	20.07.2021
Transport by	21.07.2021
Sample condition	Customer
Transport condition	acceptable
* Sampling Person	at ambient temp.
* Type of sampling	principal
* Purpose of the testing	to guarantee its representativeness
Client sample code	technological sample
Number of tested samples	R-12#52
Start analysis	1
End Analysis	21.07.2021
	25.08.2021

Results

pesticides

SF00S	Phosphane in food/feed (A)		
Method	Internal Method [DE Food], HS-GC-FPD		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Phosphane		<0,005	* mg/kg
SF277	Ethametsulfuron-methyl (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Ethametsulfuron-methyl		<0,01	* mg/kg
SF55N	Fluxapyroxad (A)		
Method	§ 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], GC-MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Fluxapyroxad		<0,1	* mg/kg
SF7BR	Saflufenacil (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Saflufenacil		<0,01	* mg/kg

SF7C9	Fluopyram (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Fluopyram	<0,01	*	mg/kg	
SF8TD	Flumioxazin (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Flumioxazin	<0,01	*	mg/kg	
SF91A	Fluoxastrobin (A)			
Method	§ 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], GC-MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Fluoxastrobin	<0,1	*	mg/kg	
SFCFC	Prothioconazole (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Prothioconazole	<0,01	*	mg/kg	
SFLA0	Pesticide Screening GC/MS in food with low water content (A)			
Method	§ 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], GC-MS [GC-MS]			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Screened pesticides	<LOQ		mg/kg	
SFLD0	Pesticide screening using LC/MS/MS in food (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS [LC-MS/MS]			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Screened pesticides	<LOQ		mg/kg	
SPGG4	Glyphosate, AMPA (Glyphosate metabolite) and Glufosinate (A)			
Method	Internal Method, SPG-14.158.3, LC-MS/MS			
Eurofins Dr. Specht International GmbH, accreditation nr. D-PL-20881-01-00				
Aminomethylphosphonic acid (AMPA)	< 0,01		mg/kg	
Glufosinate	< 0,01		mg/kg	
Glyphosate	< 0,01		mg/kg	
A7126	Ochratoxin A (food) (A)			
Method	DIN EN 14132 (2009-09), mod., IAC-LC-FLD			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Ochratoxin A (OTA)	0,6		µg/kg	± 0.2
AA602	Fluoride (A)			
Method	Wewętrznna, Potentiometry			
Eurofins Analytics France (Nantes), accreditation nr. 1-0287				
Fluorine (F)	<20		mg/kg	
DI004	Amino acids (acid hydrolysis) (A)			
Method	AMSUR, IC-UV			
Eurofins Vitamin Testing Denmark, accreditation nr. 581				
Alanine	4,67		g/100 g	± 0.654
Arginine	6,68		g/100 g	± 0.935
Aspartic acid	7,88		g/100 g	± 1.103
Glutamic acid	22,0		g/100 g	± 3.080
Glycine	5,56		g/100 g	± 0.778
Histidine	2,89		g/100 g	± 0.405
Hydroksyprolina (#)	<0,2 (LOQ)		g/100 g	
Isoleucine	3,72		g/100 g	± 0.521
Leucine	7,32		g/100 g	± 1.025
Lysine	5,80		g/100 g	± 0.812
Ornithine	<0,05 (LOQ)		g/100 g	

Phenylalanine	3,94	g/100 g	± 0.552
Proline	5,39	g/100 g	± 0.755
Serine	4,28	g/100 g	± 0.599
Threonine	4,36	g/100 g	± 0.610
Tyrosine	2,44	g/100 g	± 0.342
Valine	4,97	g/100 g	± 0.696
DJ009 Tryptophane (A)			
Method	EU 152/2009, LC-FLD		
Eurofins Vitamin Testing Denmark, accreditation nr. 581			
Tryptophan (Total)	1,31	g/100 g	± 0.131
DJ011 Cysteine+Cystine & methionine (ox-amino acid) (A)			
Method	IC-UV		
Eurofins Vitamin Testing Denmark, accreditation nr. 581			
Cystein +Cystine	2,06	g/100 g	± 0.288
Methionine	2,01	g/100 g	± 0.281
EF12C Cyantraniliprole (A)			
Method	DIN EN 15662:2009-02, mod., LC-MS/MS		
Eurofins CLF (Friedrichsdorf), accreditation nr. D-PL-14076-01-00			
Cyantraniliprole	<0,005	* mg/kg	
EF18Y Isofetamid (A)			
Method	DIN EN 15662:2009-02, mod., LC-MS/MS		
Eurofins CLF (Friedrichsdorf), accreditation nr. D-PL-14076-01-00			
Isofetamid	<0,005	* mg/kg	
J1003 Arsenic (As) (A)			
Method	§64 LFGB L 00.00-19/3, GF-AAS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Arsenic (As)	<0,1	* mg/kg	
JCAA1 Acrylamide in Food (A)			
Method	metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Acrylamide	<30	* µg/kg	
JCHG2 Mercury (Hg) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Mercury [Hg]	<0,005	* mg/kg	
JCHRU Lead (Pb) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Lead (Pb)	180	µg/kg	± 36
JCM04 Cadmium (Cd) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Cadmium (Cd)	0,13	mg/kg	± 0.026
JJ006 Aflatoxins B1, B2, G1, G2 (food) (A)			
Method	DIN EN 14123 (2008-03), mod., IAC-LC-FLD		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Aflatoxin B1	<0,1	* µg/kg	
Aflatoxin B2	<0,1	* µg/kg	
Aflatoxin G1	<0,1	* µg/kg	
Aflatoxin G2	<0,1	* µg/kg	
Sum of all positive Aflatoxins	<0,4	* µg/kg	
JJ088 Fumonisine B1, B2, B3 (maize and products derived from maize) (A)			
Method	metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			

Fumonisin B1 (FB1)	<20	* µg/kg
Fumonisin B2 (FB2)	<20	* µg/kg
Fumonisin B3 (FB3)	<20	* µg/kg
Fumonisin sum (B1+B2)	<40	* µg/kg
Fumonisin sum (B1+B2+B3)	<60	* µg/kg
JJ0CT Aluminium (Al) (A)		
Method EN ISO 17294-2-E29, ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00		
Aluminium	<0,5	* mg/kg
JJ0FF Fusarium toxins big (DON, ZON T2, HT2, NIV, ADON, DAS, FX) (A)		
Method metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00		
15-Acetyldeoxynivalenol (15-ADON)	<20	* µg/kg
3-Acetyldeoxynivalenol (3-ADON)	<20	* µg/kg
Deoxynivalenol (Vomitoxin)	<20	* µg/kg
Diacetoxyscirpenol (DAS)	<10	* µg/kg
Fusarenone X (FX)	<20	* µg/kg
HT-2 Toxin	<10	* µg/kg
Nivalenol (NIV)	<20	* µg/kg
sum T-2 HT-2 toxin	<20	* µg/kg
T-2 Toxin	<10	* µg/kg
Zearalenone (ZON)	<10	* µg/kg
LP131 Multimethod for pesticides in cereals and cereal products. (#)		
Method NMKL 195 mod., LC-MS/MS		
Subcontracted to the Eurofins laboratory Eurofins Food & Feed Testing Sweden (Lidköping)		
2,4-DB	<0,010	mg/kg
2,4-Dimethylphenylformamide	<0,010	mg/kg
Abamectin	<0,050	mg/kg
Acephate	<0,010	mg/kg
Acetamiprid	<0,010	mg/kg
Acrinathrin	<0,010	mg/kg
Aldicarb	<0,010	mg/kg
Aldicarb-sulfone	<0,010	mg/kg
Aldicarb-sulfoxide	<0,010	mg/kg
Aldrin	<0,010	mg/kg
Ametoctradin	<0,010	mg/kg
Amitraz	<0,010	mg/kg
AMTT	<0,050	mg/kg
Azinphos-ethyl	<0,010	mg/kg
Azinphos-methyl	<0,010	mg/kg
Azoxystrobin	<0,010	mg/kg
Benalaxyl	<0,010	mg/kg
Benfuracarb	<0,010	mg/kg
Bentazone	<0,010	mg/kg
Benzovindiflupyr	<0,010	mg/kg
Bifenthrin	<0,010	mg/kg
Biphenyl	<0,010	mg/kg
Bitertanol	<0,010	mg/kg
Bixafen	<0,010	mg/kg
Boscalid	<0,010	mg/kg
Bromophos-ethyl	<0,010	mg/kg
Bromophos-methyl	<0,010	mg/kg

Bromopropylate	<0,010	mg/kg
Bromoxynil	<0,010	mg/kg
Bromuconazole	<0,010	mg/kg
Bupirimate	<0,010	mg/kg
Buprofezin	<0,010	mg/kg
BYI08330 enol-glucoside	<0,050	mg/kg
BYI08330-enol	<0,050	mg/kg
BYI08330-ketohydroxy	<0,050	mg/kg
BYI08330-monohydroxy	<0,050	mg/kg
Cadusafos	<0,010	mg/kg
Captan	<0,050	mg/kg
Carbaryl	<0,010	mg/kg
Carbendazim	<0,010	mg/kg
Carbofuran	<0,010	mg/kg
Carbofuran 3-OH	<0,010	mg/kg
Carbosulfan	<0,010	mg/kg
Carboxin	<0,010	mg/kg
Carfentrazone-ethyl	<0,010	mg/kg
Carpropamid	<0,010	mg/kg
Chlorantraniliprole	<0,010	mg/kg
Chlordane-alpha	<0,010	mg/kg
Chlordane-gamma	<0,010	mg/kg
Chlorfenapyr	<0,050	mg/kg
Chlorfenvinphos	<0,010	mg/kg
Chlorfluazuron	<0,010	mg/kg
Chlorobenzilate	<0,010	mg/kg
Chlorothalonil	<0,050	mg/kg
Chlorpropham (CIPC)	<0,050	mg/kg
Chlorpyrifos-ethyl	<0,010	mg/kg
Chlorpyrifos-methyl	<0,010	mg/kg
Cinmethylin	<0,010	mg/kg
Clofentezine	<0,010	mg/kg
Clomazone	<0,010	mg/kg
Clothianidin	<0,010	mg/kg
Cyanazine	<0,010	mg/kg
Cyazofamid	<0,010	mg/kg
Cyflufenamid	<0,010	mg/kg
Cyfluthrin	<0,010	mg/kg
Cyfluthrin beta	<0,010	mg/kg
Cyhalofop-butyl	<0,010	mg/kg
Cyhalothrin, lambda-	<0,010	mg/kg
Cymoxanil	<0,010	mg/kg
Cypermethrin	<0,010	mg/kg
Cypermethrin, alpha-	<0,010	mg/kg
Cyproconazole	<0,010	mg/kg
Cyprodinil	<0,010	mg/kg
D 2,4-	<0,010	mg/kg
D 2,4-methylester	<0,010	mg/kg
DDD, p,p'-	<0,010	mg/kg
DDE, p,p'-	<0,010	mg/kg
DDT, o,p'-	<0,010	mg/kg

DDT, p,p'-	<0,010	mg/kg
Deltamethrin	<0,010	mg/kg
Demeton-S-methyl	<0,010	mg/kg
Demeton-S-methyl-sulfone	<0,010	mg/kg
Demeton-S-methyl-sulfoxide	<0,010	mg/kg
Diazinon	<0,010	mg/kg
Dicamba	<0,050	mg/kg
Dichlofluanid	<0,050	mg/kg
Dichloranilin-3,5	<0,010	mg/kg
Dichlorvos	<0,010	mg/kg
Dicloran	<0,010	mg/kg
Diclorprop	<0,010	mg/kg
Dicofol, p,p'-	<0,050	mg/kg
Dicrotophos	<0,010	mg/kg
Dieldrin	<0,010	mg/kg
Diethofencarb	<0,010	mg/kg
Difenoconazole	<0,010	mg/kg
Diffubenzuron	<0,010	mg/kg
Diffufenican	<0,010	mg/kg
Dimethoate	<0,010	mg/kg
Dimethomorph	<0,010	mg/kg
Diniconazole	<0,010	mg/kg
Dinocap	<0,010	mg/kg
Diphenylamine	<0,010	mg/kg
Disulfoton	<0,010	mg/kg
Disulfoton sulfone	<0,010	mg/kg
Disulfoton sulfoxide	<0,010	mg/kg
DMSA	<0,010	mg/kg
DMST	<0,010	mg/kg
Dodine	<0,050	mg/kg
Emamectin	<0,010	mg/kg
Endosulfan-alpha	<0,010	mg/kg
Endosulfan-beta	<0,010	mg/kg
Endosulfan-sulfate	<0,010	mg/kg
Endrin	<0,050	mg/kg
EPN	<0,010	mg/kg
Epoxiconazole	<0,010	mg/kg
Esfenvalerate	<0,010	mg/kg
Ethion	<0,010	mg/kg
Ethirimol	<0,010	mg/kg
Ethoprophos	<0,010	mg/kg
Etofenprox	<0,010	mg/kg
Etoxazole	<0,010	mg/kg
Etrimfos	<0,010	mg/kg
Famoxadone	<0,010	mg/kg
Fenamidone	<0,010	mg/kg
Fenamiphos	<0,010	mg/kg
Fenamiphos-sulfone	<0,010	mg/kg
Fenamiphos-sulfoxide	<0,010	mg/kg
Fenarimol	<0,010	mg/kg
Fenazaquin	<0,010	mg/kg

Fenbuconazole	<0,010	mg/kg
Fenchlorphos-oxon	<0,010	mg/kg
Fenhexamid	<0,010	mg/kg
Fenitrothion	<0,010	mg/kg
Fenoxaprop-P	<0,050	mg/kg
Fenoxycarb	<0,010	mg/kg
Fenpicoxamid	<0,010	mg/kg
Fenpropathrin	<0,010	mg/kg
Fenpropidin	<0,010	mg/kg
Fenpropimorph	<0,010	mg/kg
Fenpyrazamine	<0,010	mg/kg
Fenpyroximate	<0,010	mg/kg
Fenthion	<0,010	mg/kg
Fenthion sulfone	<0,010	mg/kg
Fenthion-oxon	<0,010	mg/kg
Fenthion-oxon-sulfoxide	<0,010	mg/kg
Fenthion-sulfoxide	<0,010	mg/kg
Fenthion-oxon-sulphone	<0,010	mg/kg
Fenvalerate	<0,010	mg/kg
Fipronil	<0,010	mg/kg
Fipronil-sulfone	<0,010	mg/kg
Flamprop	<0,010	mg/kg
Flonicamid	<0,010	mg/kg
Florasulam	<0,010	mg/kg
Florpyrauxifen-benzyl	<0,010	mg/kg
Fluazifop	<0,010	mg/kg
Fluazifop-P-butyl	<0,010	mg/kg
Flubendiamide	<0,010	mg/kg
Fludioxonil	<0,010	mg/kg
Flufenacet	<0,010	mg/kg
Flufenoxuron	<0,010	mg/kg
Flupicolid	<0,010	mg/kg
Fluopyram	<0,010	mg/kg
Fluoxastrobin	<0,010	mg/kg
Flupyradifurone	<0,010	mg/kg
Fluquinconazole	<0,010	mg/kg
Fluroxypyr	<0,010	mg/kg
Flusilazole	<0,010	mg/kg
Flutolanil	<0,010	mg/kg
Flutriafol	<0,010	mg/kg
Fluvalinate (sum of isomers)	<0,010	mg/kg
Fluxapyroxad	<0,010	mg/kg
Folpet	<0,050	mg/kg
Formothion	<0,050	mg/kg
Fosthiazate	<0,010	mg/kg
Fuberidazole	<0,010	mg/kg
Halauxifen	<0,010	mg/kg
Halauxifen-methyl	<0,010	mg/kg
Haloxifop	<0,010	mg/kg
Haloxifop-2-ethoxyethyl	<0,010	mg/kg
Haloxifop-R-methyl	<0,010	mg/kg

HCH, alpha-	<0,010	mg/kg
HCH, beta-	<0,010	mg/kg
HCH, delta-	<0,010	mg/kg
HCH, gamma- (Lindane)	<0,010	mg/kg
Heptachlor	<0,010	mg/kg
Heptachlorepoxyde, cis-	<0,050	mg/kg
Heptachlorepoxyde, trans-	<0,050	mg/kg
Hexachlorobenzene (HCB)	<0,010	mg/kg
Hexaconazole	<0,010	mg/kg
Hexythiazox	<0,010	mg/kg
Imazalil	<0,010	mg/kg
Imidacloprid	<0,010	mg/kg
Indoxacarb (sum, R+S isomers)	<0,010	mg/kg
Ioxynil	<0,010	mg/kg
Iprodione	<0,010	mg/kg
Iprovalicarb	<0,010	mg/kg
Isocarbofos	<0,050	mg/kg
Isofenphos	<0,010	mg/kg
Isofenphos-methyl	<0,010	mg/kg
Isoprocarb	<0,010	mg/kg
Isoprothiolane	<0,010	mg/kg
Isoproturon	<0,010	mg/kg
Isopyrazam	<0,010	mg/kg
Isotianil	<0,010	mg/kg
Isoxaben	<0,010	mg/kg
Isoxaflutole	<0,010	mg/kg
Kresoxim-methyl	<0,010	mg/kg
Linuron	<0,010	mg/kg
Lufenuron	<0,010	mg/kg
Malathion	<0,010	mg/kg
Malathion-O-analogue	<0,010	mg/kg
Mandestrobin	<0,010	mg/kg
Mandipropamid	<0,010	mg/kg
MCPA	<0,010	mg/kg
MCPA-metylester	<0,010	mg/kg
MCPB	<0,050	mg/kg
Mecoprop	<0,010	mg/kg
Mepanipyrim	<0,010	mg/kg
Metalaxyl	<0,010	mg/kg
Metalaxyl-M	<0,010	mg/kg
Metconazole	<0,010	mg/kg
Methacrifos	<0,010	mg/kg
Methamidophos	<0,010	mg/kg
Methidathion	<0,010	mg/kg
Methiocarb	<0,010	mg/kg
Methiocarb sulfoxide	<0,010	mg/kg
Methiocarb-sulfone	<0,010	mg/kg
Methomyl	<0,010	mg/kg
Methoprene	<0,050	mg/kg
Methoxychlor	<0,010	mg/kg
Methoxyfenozone	<0,010	mg/kg

Metobromuron	<0,010	mg/kg
Metolachlor	<0,010	mg/kg
Metominostrobin	<0,010	mg/kg
Metrafenone	<0,010	mg/kg
Metribuzin	<0,010	mg/kg
Milbemectin A3	<0,050	mg/kg
Milbemectin A4	<0,050	mg/kg
Molinate	<0,010	mg/kg
Monocrotophos	<0,010	mg/kg
Myclobutanil	<0,010	mg/kg
N-2,4-dimethylphenyl-N-methylformamidine	<0,010	mg/kg
Nitrofen	<0,010	mg/kg
Novaluron	<0,010	mg/kg
Omethoate	<0,010	mg/kg
Orthophenylphenol	<0,010	mg/kg
Orthosulfamuron	<0,010	mg/kg
Orysastobin	<0,010	mg/kg
Oxadiazyl	<0,010	mg/kg
Oxadixyl	<0,010	mg/kg
Oxamyl	<0,010	mg/kg
Oxasulfuron	<0,010	mg/kg
Oxpoconazole	<0,010	mg/kg
Oxychlordane	<0,010	mg/kg
Oxyfluorfen	<0,010	mg/kg
Paclobutrazol	<0,010	mg/kg
Paraoxon-methyl	<0,010	mg/kg
Parathion	<0,010	mg/kg
Parathion-methyl	<0,010	mg/kg
Pefurazoate	<0,010	mg/kg
Penconazole	<0,010	mg/kg
Pencycuron	<0,010	mg/kg
Pendimethalin	<0,010	mg/kg
Penflufen	<0,010	mg/kg
Pentachloroaniline	<0,010	mg/kg
Penthiopyrad	<0,010	mg/kg
Permethrin	<0,010	mg/kg
Phenthoate	<0,010	mg/kg
Phosalone	<0,010	mg/kg
Phosmet	<0,010	mg/kg
Phosmet-oxon	<0,050	mg/kg
Phosphamidon	<0,010	mg/kg
Phoxim	<0,010	mg/kg
Picolinafen	<0,010	mg/kg
Pirimicarb	<0,010	mg/kg
Pirimicarb-desmethyl	<0,010	mg/kg
Pirimicarb-Desmethylformamido	<0,010	mg/kg
Pirimiphos-methyl	<0,010	mg/kg
Probenazole	<0,010	mg/kg
Prochloraz	<0,010	mg/kg
Procymidone	<0,010	mg/kg
Profenofos	<0,010	mg/kg

Propaquizafop	<0,010	mg/kg
Propargite	<0,010	mg/kg
Propiconazole	<0,010	mg/kg
Propoxur	<0,010	mg/kg
Propyzamide	<0,010	mg/kg
Proquinazid	<0,010	mg/kg
Prosulfocarb	<0,010	mg/kg
Prothioconazole	<0,050	mg/kg
Prothioconazole-desthio	<0,010	mg/kg
Prothiofos	<0,050	mg/kg
Pydiflumetofen	<0,010	mg/kg
Pyraclostrobin	<0,010	mg/kg
Pyrazophos	<0,010	mg/kg
Pyrethrins (total)	<0,050	mg/kg
Pyridaben	<0,010	mg/kg
Pyridalyl	<0,010	mg/kg
Pyridate	<0,010	mg/kg
Pyrimethanil	<0,010	mg/kg
Pyriofenone	<0,010	mg/kg
Pyriproxyfen	<0,010	mg/kg
Pyroxsulam	<0,010	mg/kg
Quinclorac	<0,050	mg/kg
Quinoclamine	<0,010	mg/kg
Quinoxyfen	<0,010	mg/kg
Quintozene	<0,010	mg/kg
Quizalofop	<0,010	mg/kg
Quizalofop ethyl	<0,010	mg/kg
Resmethrins (I+II)	<0,010	mg/kg
Rotenone	<0,010	mg/kg
Sedaxane	<0,010	mg/kg
Spinetoram	<0,050	mg/kg
Spinosad (Spinosyn A+D)	<0,010	mg/kg
Spirodiclofen	<0,010	mg/kg
Spiromesifen	<0,010	mg/kg
Spirotetramat	<0,010	mg/kg
Spiroxamine	<0,010	mg/kg
Sulfoxaflor	<0,010	mg/kg
T -2,4,5	<0,010	mg/kg
Tebuconazole	<0,010	mg/kg
Tebufenozide	<0,010	mg/kg
Tebufenpyrad	<0,010	mg/kg
Tecnazene	<0,010	mg/kg
Teflubenzuron	<0,010	mg/kg
Tefluthrin	<0,010	mg/kg
Terbuthylazine	<0,010	mg/kg
Tetraconazole	<0,010	mg/kg
Tetradifon	<0,010	mg/kg
Tetramethrin	<0,010	mg/kg
TFNA	<0,010	mg/kg
TFNG	<0,010	mg/kg
Thiabendazole	<0,010	mg/kg

Thiacloprid	<0,010	mg/kg
Thiamethoxam	<0,010	mg/kg
Thiodicarb	<0,050	mg/kg
Thiometon	<0,010	mg/kg
Thiometon-sulfone	<0,010	mg/kg
Thiophanate-methyl	<0,010	mg/kg
Tiadinil	<0,010	mg/kg
Tolclofos-methyl	<0,010	mg/kg
Tolpyralate	<0,010	mg/kg
Tolyfluanid	<0,010	mg/kg
Triadimefon	<0,010	mg/kg
Triadimenol	<0,010	mg/kg
Tri-allate	<0,010	mg/kg
Triazophos	<0,010	mg/kg
Triazoxide	<0,010	mg/kg
Tribenuron methyl	<0,010	mg/kg
Tribromophenole 2,4,6	<0,010	mg/kg
Trichlorfon	<0,010	mg/kg
Trichlorophenole 2,4,6	<0,010	mg/kg
Triclopyr	<0,010	mg/kg
Tricyclazole	<0,010	mg/kg
Trifloxystrobin	<0,010	mg/kg
Triflumezopyrim	<0,010	mg/kg
Triflumuron	<0,010	mg/kg
Trifluralin	<0,010	mg/kg
Trinexapac (free acid)	<0,010	mg/kg
Trinexapac-ethyl	<0,010	mg/kg
Triticonazole	<0,010	mg/kg
Tritosulfuron	<0,010	mg/kg
Vinclozolin	<0,010	mg/kg
Zeta-Cypermethrin	<0,010	mg/kg
Zoxamide	<0,010	mg/kg
QD08G Glucosinolate in Canola Products (A)		
Method LC-UV/VIS		
Eurofins Scientific Inc. (Des Moines), accreditation nr. 2927.01		
4-Hydroxyglucobrassicin	<0,05	µmol/g
Epiprogoitrin	<0,05	µmol/g
Glucoalyssin	<0,05	µmol/g
Glucobrassicinapin	<0,05	µmol/g
Glucobrassicin	<0,05	µmol/g
Glucoerucin	<0,05	µmol/g
Glucoiberin	<0,05	µmol/g
Gluconapin	<0,05	µmol/g
Gluconapoleiferin	<0,05	µmol/g
Gluconasturtiin	<0,05	µmol/g
Glucoraphanin	<0,05	µmol/g
Glucosinolates/Glucozynolany (sum)	<0,05	µmol/g
Glucotropaeolin	<0,05	µmol/g
Neoglucobrassicin	<0,05	µmol/g
Progoitrin	<0,05	µmol/g
Sinalbin	<0,05	µmol/g
QD495 Phytic Acid (#)		

Method	Analytical Biochemistry Vol. 77:536-539 (1977), ICP-OES		
Subcontracted to the Eurofins laboratory Eurofins Scientific Inc. (Des Moines)			
Kwas fitynowy/Phytic acid	0,94	%	
SF3SL	Sulfurylfluoride in selected food (A)		
Method	Internal Method [DE Food], HS-GC-MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Sulfuryl fluoride	<0,01	*	mg/kg
SF3WU	Penthiopyrad (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Penthiopyrad	<0,01	*	mg/kg
SF98A	Methylbromide (A)		
Method	Internal Method [DE Food], HS-GC-MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Methyl bromide	<0,1	*	mg/kg
SFAZ3	Penflufen (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Penflufen	<0,01	*	mg/kg
SFDMZ	Benzovindiflupyr (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Benzovindiflupyr	<0,01	*	mg/kg
SFDN1	Flupyradifurone (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Flupyradifurone	<0,01	*	mg/kg
SFDN3	Sedaxane (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Sedaxane	<0,01	*	mg/kg
SFDN4	Sulfoxaflor (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Sulfoxaflor	<0,01	*	mg/kg
SFFF0	Paraquat and diquat in food and feed (A)		
Method	Internal Method [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Diquat	<0,02	*	mg/kg
Paraquat	<0,02	*	mg/kg
SFFW4	Mefentrifluconazole (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Mefentrifluconazole	<0,01	*	mg/kg
SFLC0	Determination of acidic herbicides in dry and water rich food (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS [LC-MS/MS]		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Screened pesticides	<LOQ		mg/kg
ST05Z	Protein content (Nx6,25) (A)		
Method	ISO 1871:2009, Titrimetry		
Nitrogen - Kjeldahl	15,05	%	± 2,41
Protein (Nx6,25)	94,06	%	± 15,05
ST0LH	Content of fat after hydrolisis (A)		
Method	PB/CH/16 wydanie 3 z dnia 09.11.2018, Gravimetry		

Content of fat after hydrolisis	<0,20	* %
ST05I Fatty acid composition (A)		
Method PN EN ISO 12966-1:2015-01 + AC:2015-06, Method gas chromatography with flame ionization detection , GC-FID		
C 10:0 (Capric acid)	<0,1	* %
C 11:0 (Undecanoic acid)	<0,1	* %
C 12:0 (Lauric acid)	<0,1	* %
C 13:0 (Tridecanoic acid)	<0,1	* %
C 14:0 (Myristic acid)	<0,1	* %
C 14:1 (Myristoleic acid)	<0,1	* %
C 15:0 (Anteisopentdecanoic acid)	<0,1	* %
C 15:1 (Pentadecenoic acid) + Isomers	<0,1	* %
C 16:0 (Palmitic acid)	<0,1	* %
C 16:1 (Palmitoleic acid)	<0,1	* %
C 17:0 (Margaric acid)	<0,1	* %
C 17:1 (Heptadecenoic acid)	<0,1	* %
C 18:0 (Stearic acid)	<0,1	* %
C 18:1 c others	<0,1	* %
C 18:1 C11	<0,1	* %
C 18:1 n9 Octadecan acid	<0,1	* %
C 18:1t (Elaidic Acid)	<0,1	* %
C 18:2 (Linoleic acid)	<0,1	* %
C 18:2 (trans/trans)	<0,1	* %
C 18:3 (alpha-linolenic acid)	<0,1	* %
C 18:3 (gamma-linolenic acid)	<0,1	* %
C 18:3 trans	<0,1	* %
C 18:4 (Octadecatetraenic acid)	<0,1	* %
C 20:0 (Arachidic acid)	<0,1	* %
C 20:1 (Eicosenoic acid)	<0,1	* %
C 20:2 Eicosadienoic acid n-6	<0,1	* %
C 20:3 (Eicosatrienoic acid)	<0,1	* %
C 20:4 Eicosatetraenoic/Arachidonic acid	<0,1	* %
C 20:5 Eicosapentaenoic acid	<0,1	* %
C 20:3 Eicosatrienoic acid n-6	<0,1	* %
C 21:0 Henikanozanian metylu	<0,1	* %
C 22:0 (Behenic acid)	<0,1	* %
C 22:1 Docosenoic acid	<0,1	* %
C 22:1 isomers	<0,1	* %
C 22:2 (Docosadienoic acid)	<0,1	* %
C 22:4 Docosatetraenoic acid	<0,1	* %
C 22:5 Docosapentaenoic acid (Omega 3)	<0,1	* %
C 22:6 omega 3	<0,1	* %
C 23:0 (Tricosanoic acid)	<0,1	* %
C 24:0 (Lignoceric acid)	<0,1	* %
C 24:1 (Nervonic acid)	<0,1	* %
C 4:0 Butanoic acid	<0,1	* %
C 6:0 (Caproic acid)	<0,1	* %
C 8:0 Octanoic acid	<0,1	* %
Mono unsaturated fatty acids	<0,1	* g/100 g
Omega-3 fatty acids	<0,1	* g/100 g
Omega-6 fatty acids	<0,1	* g/100 g
Omega-9 fatty acids	<0,1	* g/100 g
Poly unsaturated fatty acids	<0,1	* g/100 g

Saturated fatty acids	<0,1	*	g/100 g	
Trans fatty acids	<0,1	*	g/100 g	
ST0Y8	Ash total content (A)			
Method	PN-A-79011-8:1998, Gravimetry			
Ash	1,92	%		± 0,40
ST0YE	Water, dry mass content (A)			
Method	PN-A-79011-3:1998, weight			
Dry matter	95,2	%		± 7,6
Moisture (103 °C)	4,9	%		± 0,4
ST1MH	Crude fiber content (A)			
Method	Dz.U.UEL54/1 z dn 26.2.2009(WE) nr152/2009 zał.III, Weight method			
Crude fiber	0,38	%		± 0,08

* = less than the limit of quantification
= Not accredited
A = Method accredited
+/- Uncertainty of measurement presented as expanded uncertainty of measurement (95%; k=2).
x = Data provided by the customer

JUDGEMENT

The results for the content of individual fatty acids and the sum of the trans isomers of fatty acids refer to fat [g / 100 g fat]; the residual fatty acid groups contents relate to the sample [g / 100 g sample].

non-accredited parameter

Authorized by: Monika Miętus
Zastępca Kierownika Pracowni Chemicznej

Paulina Matusiewicz Approved by:
Analytical Service Manager

Scope of screened pesticides: SF00S

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Phosphane	7803-51-2	mg / kg	0,005	0,00	3-GC-FPD // LA-GC-109-

Scope of screened pesticides: SF277

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Ethametsulfuronmethyl	97780-06-8	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF55N

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluxapyroxad	907204-31-3	mg / kg	0,100	0,00	S // acc. to Screening or Pi

Scope of screened pesticides: SF7BR

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Saflufenacil	372137-35-4	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF7C9

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluopyram	658066-35-4	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF8TD

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Flumioxazin	103361-09-7	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF91A

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluoxastrobin	361377-29-9	mg / kg	-	0,00	S // acc. to Screening or Pi

Scope of screened pesticides: SFCFC

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Prothioconazole	178928-70-6	mg / kg	0,010	0,00	-MS/MS // LA-LCMS-042

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
! Pesticides screened (all)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
2,4,5-T-Methylester	1928-37-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
2,4-D-Methylester	1928-38-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Acetochlor	34256-82-1	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Aclonifen	74070-46-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Acrinathrin	101007-06-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Alachlor	15972-60-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Aldrin	309-00-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Aldrin/ Dieldrin (Sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Allethrin	584-79-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Amidithion	919-76-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Atrazin	1912-24-9	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Azaconazole	60207-31-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Azinphos-ethyl	2642-71-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Azinphos-methyl	86-50-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Azoxystrobin	131860-33-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Benfluralin	1861-40-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Benoxacor	98730-04-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Benzoylprop-ethyl	22212-55-1	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Bifenox	42576-02-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Binapacryl	485-31-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Biphenrin	82657-04-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bitertanol	55179-31-2	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Boscalid	188425-85-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Bromfenvinphos	33399-00-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Bromocyclene	1715-40-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Bromophos	2104-96-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bromophos-ethyl	4824-78-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bromopropylate	18181-80-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Buprofezin	69327-76-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Butachlor	23184-66-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Butamifos	36335-67-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Butralin	33629-47-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cadusafos	95465-99-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Captan	133-06-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Carbophenothion	786-19-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Carbophenothion-methyl	953-17-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Carfentrazone-ethyl	128639-02-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chinomethionate	2439-01-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorbenside	103-17-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlordane (total)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Chlordane, cis-	5103-71-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlordane, oxy-	27304-13-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Chlordane, trans-	5103-74-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
CHLORETHOXYFOS	54593-83-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenapyr	122453-73-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenprop-methyl	14437-17-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorfenson	80-33-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenvinphos	470-90-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chloridazone	1698-60-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Chlormephos	24934-91-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorobenzilate	510-15-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chloroneb	2675-77-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Chloropropylate	5836-10-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorothalonil	1897-45-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorpyrifos (-ethyl)	2921-88-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorpyrifos-methyl	5598-13-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorthal-dimethyl	1861-32-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorthion	500-28-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorthiophos	21923-23-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlozolinate	84332-86-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cinidon-ethyl	142891-20-1	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Clodinafop-propargyl	105512-06-9	mg / kg	0,030	0,00	MS [GC-MS] // LA-GC-00
Coumaphos	56-72-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Crotoxyphos	7700-17-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyanofenphos	13067-93-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyanophos	2636-26-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyfluthrin	68359-37-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyhalothrin, lambda- (includes Cyhalothrin, gamma	91465-08-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cypermethrin	52315-07-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Cyphenothrine	39515-40-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyproconazole	94361-06-5	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
DDD, o,p-	53-19-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
DDE, o,p-	3424-82-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
DDT (sum p,p'-DDT+o,p'-DDT+p,p'-DDE+p,p		mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Deltamethrin	52918-63-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dialifos	10311-84-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diallate	2303-16-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diazinon	333-41-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dibrombenzophenon, p,p-	3988-03-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dicaphon	2463-84-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dichlobenil	1194-65-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Dichlofenthion	97-17-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dichlofluanid	1085-98-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dichloran	99-30-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dichlorvos	62-73-7	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Diclofop-methyl	51338-27-3	mg / kg	0,020	0,00	GC-MS [GC-MS] // LA-GC-002
Dicofol (sum)		mg / kg	-	0,00	-MS [GC-MS] // LA-GC-002
Dicofol, o,p-	10606-46-9	mg / kg	0,005	0,00	GC-MS [GC-MS] // LA-GC-002
Dicofol, p,p-	115-32-2	mg / kg	0,005	0,00	-MS [GC-MS] // LA-GC-002
Dicrotophos	141-66-2	mg / kg	0,010	0,00	GC-MS [GC-MS] // LA-GC-002
Diieldrin	60-57-1	mg / kg	0,005	0,00	-MS [GC-MS] // LA-GC-002
Difenoconazole	119446-68-3	mg / kg	0,020	0,00	-MS [GC-MS] // LA-GC-002
Diflufenican	83164-33-4	mg / kg	0,010	0,00	GC-MS [GC-MS] // LA-GC-002
Dimethachlor	50563-36-5	mg / kg	0,010	0,00	-MS [GC-MS] // LA-GC-002
Dimethipin	55290-64-7	mg / kg	0,010	0,00	GC-MS [GC-MS] // LA-GC-002
Dimethoate	60-51-5	mg / kg	0,020	0,00	-MS [GC-MS] // LA-GC-002
Dimethomorph	110488-70-5	mg / kg	0,050	0,00	-MS [GC-MS] // LA-GC-002
Diniconazole	83657-24-3	mg / kg	0,010	0,00	-MS [GC-MS] // LA-GC-002
Dinitramine	29091-05-2	mg / kg	0,010	0,00	GC-MS [GC-MS] // LA-GC-002
Dinobuton	973-21-7	mg / kg	0,050	0,00	-MS [GC-MS] // LA-GC-002
Disulfoton	298-04-4	mg / kg	0,050	0,00	-MS [GC-MS] // LA-GC-002
Disulfoton-sulfon	2497-06-5	mg / kg	0,020	0,00	GC-MS [GC-MS] // LA-GC-002
Ditalimfos	5131-24-8	mg / kg	0,005	0,00	GC-MS [GC-MS] // LA-GC-002
Edifenphos	17109-49-8	mg / kg	0,010	0,00	-MS [GC-MS] // LA-GC-002
Endosulfan (total)		mg / kg	-	0,00	-MS [GC-MS] // LA-GC-002
Endosulfan alpha	959-98-8	mg / kg	0,005	0,00	GC-MS [GC-MS] // LA-GC-002
Endosulfan sulfate	1031-07-8	mg / kg	0,005	0,00	GC-MS [GC-MS] // LA-GC-002
Endosulfan, beta-	33213-65-9	mg / kg	0,005	0,00	-MS [GC-MS] // LA-GC-002
Endrin	72-20-8	mg / kg	0,005	0,00	GC-MS [GC-MS] // LA-GC-002
Endrin ketone	53494-70-5	mg / kg	0,005	0,00	-MS [GC-MS] // LA-GC-002
EPN	2104-64-5	mg / kg	0,010	0,00	-MS [GC-MS] // LA-GC-002
Epoxiconazole	133855-98-8	mg / kg	0,040	0,00	GC-MS [GC-MS] // LA-GC-002
Etaconazole	60207-93-4	mg / kg	0,020	0,00	GC-MS [GC-MS] // LA-GC-002
Ethalfuralin	55283-68-6	mg / kg	0,010	0,00	-MS [GC-MS] // LA-GC-002
Ethion	563-12-2	mg / kg	0,005	0,00	-MS [GC-MS] // LA-GC-002
Ethofumesate	26225-79-6	mg / kg	0,200	0,00	GC-MS [GC-MS] // LA-GC-002
Ethoprophos	13194-48-4	mg / kg	0,005	0,00	GC-MS [GC-MS] // LA-GC-002
Etridiazole	2593-15-9	mg / kg	0,005	0,00	GC-MS [GC-MS] // LA-GC-002
Etrimfos	38260-54-7	mg / kg	0,005	0,00	GC-MS [GC-MS] // LA-GC-002
Famophos	52-85-7	mg / kg	0,010	0,00	-MS [GC-MS] // LA-GC-002
Famoxadone	131807-57-3	mg / kg	0,010	0,00	-MS [GC-MS] // LA-GC-002
Fenamidone	161326-34-7	mg / kg	0,020	0,00	-MS [GC-MS] // LA-GC-002
Fenamiphos	22224-92-6	mg / kg	0,020	0,00	GC-MS [GC-MS] // LA-GC-002
Fenarimol	60168-88-9	mg / kg	0,050	0,00	GC-MS [GC-MS] // LA-GC-002
Fenbuconazole	114369-43-6	mg / kg	0,100	0,00	GC-MS [GC-MS] // LA-GC-002
Fenchlorazole-ethyl	103112-35-2	mg / kg	0,010	0,00	GC-MS [GC-MS] // LA-GC-002
Fenchlorphos	299-84-3	mg / kg	0,005	0,00	-MS [GC-MS] // LA-GC-002
Fenhexamid	126833-17-8	mg / kg	0,050	0,00	-MS [GC-MS] // LA-GC-002

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fenitrothion	122-14-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenoxaprop-ethyl	66441-23-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenpiclonil	74738-17-3	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenpropathrin	39515-41-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenpropimorph	67564-91-4	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fenson	80-38-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fensulfothion	115-90-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (all isomers including Esfenvalerate)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (RR-/SS-Isomers)		mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (RS-/SR-Isomers)		mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fipronil	120068-37-3	mg / kg	0,004	0,00	MS [GC-MS] // LA-GC-00
Fipronil, desulfinyl-	111246-15-2	mg / kg	0,004	0,00	MS [GC-MS] // LA-GC-00
Fipronil+Sulfonmetab. MB46136 (Sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Fipronil-sulfide	120067-83-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fipronil-sulfone	120068-36-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Flamprop-isopropyl	52756-22-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flamprop-methyl	52756-25-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flonicamid	158062-67-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fluazifop-butyl	69806-50-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fluchloralin	33245-39-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Flucythrinate	70124-77-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flufenoxuron	101463-69-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flumetralin	62924-70-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fluopicolid	239110-15-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fluorodifen	15457-05-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fluotrimazole	31251-03-3	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fluquinconazole	136426-54-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flurenol-butyl	2314-09-2	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Flurochloridone	61213-25-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Flurtamone	96525-23-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flusilazole	85509-19-9	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fluvalinate (sum of isomers)	69409-94-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Folpet	133-07-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fonofos	944-22-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Formothion	2540-82-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Genite	97-16-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Halfenprox	111872-58-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Haloxifop-Ethoxyethyl	87237-48-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Haloxifop-methyl	69806-40-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
HCH, alpha-	319-84-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, beta-	319-85-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, delta-	319-86-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, epsilon-	6108-10-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
HCH, gamma - Lindane	58-89-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor	76-44-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Heptachlor epoxide, cis-	1024-57-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor epoxide, trans-	28044-83-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptenophos	23560-59-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Hexachlorobenzene (HCB)	118-74-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Hexaconazole	79983-71-4	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
INDANOFAN	133220-30-1	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Indoxacarb (sum, R+S isomers)	144171-61-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Iodofenphos	18181-70-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Ioxynil-Octanoat	3861-47-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Iprobenfos	26087-47-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Iprodione	36734-19-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isazofos	42509-80-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isobenzan	297-78-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isocarbofos	24353-61-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isodrin	465-73-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isofenphos	25311-71-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isofenphos-Methyl	99675-03-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isomethiozin	57052-04-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isopropalin	33820-53-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isoxadifen-ethyl	163520-33-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Kresoxim-methyl	143390-89-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Lactofen	77501-63-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Leptophos	21609-90-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Lufenuron	103055-07-8	mg / kg	0,012	0,00	MS [GC-MS] // LA-GC-00
Malaoxon	1634-78-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Malathion	121-75-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Malathion/Malaoxon (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Mecarbam	2595-54-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mephosfolan	950-10-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Merphos	150-50-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Metazachlor	67129-08-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Methacrifos	62610-77-9	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Methidathion	950-37-8	mg / kg	0,012	0,00	MS [GC-MS] // LA-GC-00
Methoxychlor	72-43-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Metolachlor	51218-45-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Metrafenone	220899-03-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Metribuzin	21087-64-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mevinphos	7786-34-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mirex	2385-85-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Molinate	2212-67-1	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Myclobutanil	88671-89-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Nitralin	4726-14-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Nitrapyrin	1929-82-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Nitrofen	1836-75-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Nitrothal-isopropyl	10552-74-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Norflurazon	27314-13-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Nuarimol	63284-71-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Omethoate	1113-02-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Oxadiazon	19666-30-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Oxydemeton-methyl	301-12-2	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Oxyfluorfen	42874-03-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Paclobutrazol	76738-62-0	mg / kg	0,040	0,00	MS [GC-MS] // LA-GC-00
Paraoxon-ethyl	311-45-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Paraoxon-methyl	950-35-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Parathion-ethyl	56-38-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Parathion-methyl	298-00-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Parathion-methyl/Paraoxon-methyl (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Penconazole (sum of constituent isomers)	66246-88-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pendimethalin	40487-42-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloranisole	1825-21-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloroaniline	527-20-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pentachlorobenzene	608-93-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloroethoxyanisole	1825-19-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Permethrin	52645-53-1	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Perthane	72-56-0	mg / kg	0,200	0,00	MS [GC-MS] // LA-GC-00
Phenkapton	2275-14-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phenothrin	26002-80-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phenthoate	2597-03-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosalone	2310-17-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosfolan	947-02-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosmet	732-11-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Picolinafen	137641-05-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Picoxystrobin	117428-22-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Piperophos	24151-93-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pirimiphos-ethyl	23505-41-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pirimiphos-methyl	29232-93-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Plifenate	21757-82-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Prallethrin	23031-36-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Procymidone	32809-16-8	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
Profenofos	41198-08-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Profluralin	26399-36-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Propachlor	1918-16-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Propanil	709-98-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Propazin	139-40-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Propetamphos	31218-83-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Propiconazole (sum of isomers)	60207-90-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Propyzamid	23950-58-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Prothiofos	34643-46-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Prothoate	2275-18-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyraclufos	89784-60-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyraflufen-ethyl	129630-19-9	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pyrazophos	13457-18-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyrethrins	8003-34-7	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pyridaben	96489-71-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pyridaphenthion	119-12-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyrifenoxy	88283-41-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Quinalphos	13593-03-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Quinoxifen	124495-18-7	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
Quintozene	82-68-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Quintozene (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Quinoxifen ethyl	76578-14-8	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Resmethrin	10453-86-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
S 421	127-90-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Spiromesifen	283594-90-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Sulfotep	3689-24-5	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Sulprofos	35400-43-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Swep	1918-18-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tebupirimfos	96182-53-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tecnazene	117-18-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tefluthrin	79538-32-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Temephos	3383-96-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Terbufos	13071-79-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetrachlorvinphos	22248-79-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetraconazole	112281-77-3	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Tetradifon	116-29-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetramethrin	7696-12-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tetrasul	2227-13-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tolclofos-methyl	57018-04-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tolylfluanid	731-27-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Transfluthrin	118712-89-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triadimefon	43121-43-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triadimenol	55219-65-3	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Triallate	2303-17-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triamiphos	1031-47-6	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Triazophos	24017-47-8	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Tribufos	78-48-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Trichloronat	327-98-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tridiphane	58138-08-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Trifloxystrobin	141517-21-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Trifluralin	1582-09-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Vamidothion	2275-23-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Vinclozolin	50471-44-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
! Pesticides screened (other)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
! Pesticides screened (all)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
2,4'-Formoxylidid	60397-77-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
3-Hydroxycarbofuran	16655-82-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
6-CHLOR-3-PHENYLPYRIDAZIN-4-OL (Pyridat	40020-01-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Abamectin	71751-41-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Acephate	30560-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Acetamiprid	135410-20-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Acetochlor	34256-82-1	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC
Alachlor	15972-60-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aldicarb	116-06-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Aldicarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Aldicarb-sulfone	1646-88-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aldicarb-sulfoxide	1646-87-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Ametoctradin	865318-97-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Ametryn	834-12-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Amidosulfuron	120923-37-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aminocarb	2032-59-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Amitraz (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Amitraze	33089-61-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Ancymidol	12771-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Atrazin	1912-24-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Atrazin, desethyl-	6190-65-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Azaconazole	60207-31-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Azamethiphos	35575-96-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aziprotryn	4658-28-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Azoxystrobin	131860-33-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benalaxyl	71626-11-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bendiocarb	22781-23-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benfuracarb	82560-54-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benodanil	15310-01-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benomyl	17804-35-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Bensulfuron methyl	83055-99-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benthiavalicarb, isopropyl-	177406-68-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Bitertanol	55179-31-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Boscalid	188425-85-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Bromacil	314-40-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bromuconazole (Sum)		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bupirimate	41483-43-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Buprofezin	69327-76-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Butachlor	23184-66-9	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim	34681-10-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim-sulfoxide	34681-24-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Butoxycarboxim	34681-23-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Buturon	3766-60-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cadusafos	95465-99-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Carbaryl	63-25-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbendazim	10605-21-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbendazim/Benomyl (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Carbofuran	1563-66-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbofuran (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Carbosulfan	55285-14-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carboxin	5234-68-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
CHLORANTRANILIPROLE	500008-45-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorbromuron	13360-45-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chlorfluazuron	71422-67-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chloridazone	1698-60-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chlorotoluron	15545-48-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chloroxuron	1982-47-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorpropham	101-21-3	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Chlorsulfuron	64902-72-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cinidon-ethyl	142891-20-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cinosulfuron	94593-91-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clethodim	99129-21-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clodinafop-propargyl	105512-06-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clofentezine	74115-24-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clomazone	81777-89-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clothianidin	210880-92-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyanazine	21725-46-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyazofamid	120116-88-3	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Cymoxanil	57966-95-7	mg / kg	0,100	0,00	S [LC-MS/MS] // LA-LCN
Cyproconazole	94361-06-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cyprodinil	121552-61-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyprofuram	69581-33-5	mg / kg	0,030	0,00	S [LC-MS/MS] // LA-LCN
Cyromazine	66215-27-8	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Demeton	8065-48-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Demeton-S-methyl	919-86-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Demeton-S-methyl-sulfone	17040-19-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Desmedipham	13684-56-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Desmetryn	1014-69-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diazinon	333-41-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dichlorvos	62-73-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diclobutrazol	75736-33-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diethofencarb	87130-20-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diethyltoluamide	134-62-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Difenoconazole	119446-68-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Difenoxuron	14214-32-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diflubenzuron	35367-38-5	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Diflufenican	83164-33-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimefox	115-26-4	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Dimefuron	34205-21-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimethenamid including sum of isomers	87674-68-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimethoate	60-51-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimethomorph	110488-70-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimetilan	644-64-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimoxystrobin	149961-52-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dinotefuran	165252-70-0	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton	298-04-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton-sulfon	2497-06-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton-sulfoxide	2497-07-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diuron	330-54-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Emamectin (Sum)		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Epoxiconazole	133855-98-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb	29973-13-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb-sulfone	53380-23-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb-sulfoxide	53380-22-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiprole	181587-01-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethofenprox	80844-07-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesat (Sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesat-2-keto		mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesate	26225-79-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethoprophos	13194-48-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Etoxazole	153233-91-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Famoxadone	131807-57-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamidone	161326-34-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos	22224-92-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos-sulfone	31972-44-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos-sulfoxide	31972-43-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenarimol	60168-88-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenazaquin	120928-09-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenbuconazole	114369-43-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenhexamid	126833-17-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenobucarb	3766-81-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenoxaprop-ethyl	66441-23-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenoxycarb	72490-01-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenpiclonil	74738-17-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenpropidin	67306-00-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fenpropimorph	67564-91-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenpyroximate	134098-61-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion	115-90-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-oxon-sulfone	6132-17-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-oxon-sulfoxide	6552-21-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-sulfone	14255-72-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion	55-38-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon	6552-12-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon-sulfone	14086-35-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon-sulfoxide	6552-13-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-sulfone	3761-42-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-sulfoxide	3761-41-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenuron	101-42-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flazasulfuron	104040-78-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flonicamid	158062-67-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Florasulam	145701-23-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fluazifop-P-butyl	79241-46-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fluazuron	86811-58-7	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Flucycloxuron	113036-88-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fludioxonil	131341-86-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flufenacet	142459-58-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flufenoxuron	101463-69-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fluometuron	2164-17-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fluopicolid	239110-15-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flurochloridone	61213-25-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flurprimidol	56425-91-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flusilazole	85509-19-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flutriafol	76674-21-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
FM-6-1		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Formetanate	22259-30-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fosthiazate	98886-44-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fuberidazole	3878-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Furathiocarb	65907-30-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Halofenozide	112226-61-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Haloxyfop-Ethoxyethyl	87237-48-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Haloxyfop-methyl	69806-40-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Hexaconazole	79983-71-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexaflumuron	86479-06-3	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Hexazinone	51235-04-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexythiazox	78587-05-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Imazalil (any ratio of constituent isomers)	35554-44-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Imibenconazol	86598-92-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Imidacloprid	138261-41-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Indoxacarb (sum, R+S isomers)	144171-61-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Iodosulfuron methyl	185119-76-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Iprovalicarb	140923-17-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoprocarb	2631-40-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoprothiolane	50512-35-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoproturon	34123-59-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoxaben	82558-50-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoxaflutole	141112-29-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoxathion	18854-01-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Lenacil	2164-08-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Linuron	330-55-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Lufenuron	103055-07-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malaoxon	1634-78-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malathion	121-75-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malathion/Malaoxon (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Mandipropamid	374726-62-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Mepanipyrim	110235-47-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metalaxyl	57837-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metamitron	41394-05-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metazachlor	67129-08-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metconazole	125116-23-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methabenzthiazuron	18691-97-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methacrifos	62610-77-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methamidophos	10265-92-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methidathion	950-37-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb	2032-65-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb-sulfone	2179-25-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb-sulfoxide	2635-10-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methomyl	16752-77-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methoprotryne	841-06-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methoxyfenozid	161050-58-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metobromuron	3060-89-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metolachlor	51218-45-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metolcarb	1129-41-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metoxuron	19937-59-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metrafenone	220899-03-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metribuzin	21087-64-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metsulfuron-methyl	74223-64-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Molinate	2212-67-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Monocrotophos	6923-22-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Monolinuron	1746-81-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Monuron	150-68-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
N-2,4-dimethylphenyl-N-methylformamidin	33089-74-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Napropamide	15299-99-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Neburon	555-37-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Nicosulfuron	111991-09-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Novaluron	116714-46-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Nuarimol	63284-71-9	mg / kg	0,025	0,00	S [LC-MS/MS] // LA-LCN
Ofurace	58810-48-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Omethoate	1113-02-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Orbencarb	34622-58-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxadixyl	77732-09-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxamyl	23135-22-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxamyl-oxime	30558-43-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Oxydemeton-methyl	301-12-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxydemeton-methyl (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Paclobutrazol	76738-62-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Paraoxon-ethyl	311-45-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Paraoxon-methyl	950-35-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Penconazole (sum of constituent isomers)	66246-88-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pencycuron	66063-05-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pendimethalin	40487-42-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pentachlor	2307-68-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phenmedipham	13684-63-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Phorate	298-02-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phorate (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Phorate-sulfone	2588-04-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phorate-sulfoxide	2588-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phosmet	732-11-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phosphamidon	13171-21-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phoxim	14816-18-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Picoxystrobin	117428-22-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Piperonyl butoxide	51-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb	23103-98-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb, desmethyl-	30614-22-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb, desmethyl-formamido-	27218-04-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Primisulfuron-methyl	86209-51-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prochloraz	67747-09-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Promecarb	2631-37-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prometon	1610-18-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prometryn	7287-19-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Propamocarb (sum)	24579-73-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Propargite	2312-35-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Propazin	139-40-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Propham	122-42-9	mg / kg	0,030	0,00	S [LC-MS/MS] // LA-LC [†]
Propiconazole (sum of isomers)	60207-90-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Propoxur	114-26-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Propoxycarbazone	145026-81-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Proquinazid	189278-12-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Prosulfocarb	52888-80-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Prosulfuron	94125-34-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pymetrozine	123312-89-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyraclostrobin	175013-18-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyraflufen-ethyl	129630-19-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrethrins	8003-34-7	mg / kg	0,500	0,00	S [LC-MS/MS] // LA-LC [†]
Pyridate	55512-33-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrimethanil	53112-28-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrimidifen	105779-78-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyriproxyfen	95737-68-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Quizalofop ethyl	76578-14-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Rabenzazole	40341-04-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Rimsulfuron	122931-48-0	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC [†]
Rotenone	83-79-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Sebuthylazine	7286-69-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Sethoxydim	74051-80-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Silafluofen	105024-66-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LC [†]
Simazine	122-34-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Simazine, desethyl-	1007-28-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Simeconazole	149508-90-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Spinosad (Summe)	168316-95-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Spirodiclofen	148477-71-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spiromesifen	283594-90-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spirotetramat	203313-25-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spiroxamine	118134-30-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tebuconazol	107534-96-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tebufenozide	112410-23-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tebufenpyrad	119168-77-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Teflubenzuron	83121-18-0	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LC [†]
TEPP	107-49-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbacil	5902-51-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos	13071-79-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos-sulfon	56070-16-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos-sulfoxide	10548-10-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbuthylazine	5915-41-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbuthylazine, desethyl-	30125-63-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbutryn	886-50-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tetraconazole	112281-77-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Thiabendazole	148-79-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiabendazole, 5-hydroxy-	948-71-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiacloprid	111988-49-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiamethoxam	153719-23-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiazafurion	25366-23-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thifensulfuron methyl	79277-27-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiodicarb	59669-26-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox	39196-18-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox-sulfone	39184-59-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox-sulfoxide	39184-27-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiometon	640-15-3	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Thionazin	297-97-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiophanate (-ethyl)	23564-06-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiophanate-methyl	23564-05-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tiocabazil	36756-79-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triadimefon	43121-43-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triadimenol	55219-65-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triamiphos	1031-47-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triasulfuron	82097-50-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triazamate	112143-82-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triazophos	24017-47-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tribenuronmethyl	101200-48-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trichlorfon	52-68-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Tricyclazol	41814-78-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Tridemorph	81412-43-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trietazine	1912-26-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trifloxystrobin	141517-21-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trifloxysulfuron	145099-21-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflumizol/FM-6-1 (Sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Triflumizole	99387-89-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triflumuron	64628-44-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflusulfuronmethyl	126535-15-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triforine	26644-46-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trimethacarb, 3,4,5-	2686-99-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triticonazole	131983-72-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Uniconazole	83657-22-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion	2275-23-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion-sulfone	70898-34-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion-sulfoxide	20300-00-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Zoxamid	156052-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
! Pesticides screened (other)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SPGG4

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Aminomethylphosphonic acid (AMPA)	1066-51-9	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158
Glufosinate	51276-47-2	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158
Glyphosate	1071-83-6	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158

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REPORT OF ANALYSIS No. 422245/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ	Sample description (according to declaration of Client) R-12#52 protein isolate
Sample received: 2021-07-21	Order of 2021-07-20 The samples were delivered by Client
Analysis completed (the date of performance of the laboratory activity): 2021-08-13	
Report dated: 2021-08-13	

Test	Method	Unit	Result
Sulphur dioxide	PN-EN 1988-1:2001	mg/kg	< 10
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	4,5x10 ² [2,9x10 ² ;6,9x10 ²]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	< 1,0x10 ¹
Enumeration of yeast		cfu/g	< 1,0x10 ¹
* The most probable number of Coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Escherichia coli in 10g	PN-ISO 7251:2006		not detected in 10 g
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g
* Benzoic acid and sorbic acid	PN-EN 12856:2002		
Benzoic acid and its salts expressed as benzoic acid		mg/kg	< 10
Sorbic acid and its salts expressed as sorbic acid		mg/kg	< 10
# * Solvent residue	HH-MA-M 03-011, Headspace, GC-FID: 2019-01		
Ethanol		mg/kg	544 ± 163
Ethyl acetate		mg/kg	552 ± 166

Test: Solvent residue was performed by external provider with an accreditation number D-PL-14170-01-00

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
 Ewa Gębal, Laboratories Cooperation Section Manager
 Paulina Połosak, Expert Analyst, Microbiology Laboratory Gdynia
 Żaneta Nowińska-Słowik, Expert Analyst, Liquid Chromatography Laboratory
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

The results relate to the analysed samples only. Unless otherwise specified given expanded measurement uncertainty was estimated for the coverage factor k=2 at 95% confidence level. Sampling uncertainty has not been taken into consideration. Unless otherwise specified when conformity is stated J.S. Hamilton Poland Sp. z o.o. applies the simple acceptance decision rule in accordance with ILAC-G8:09/2019. This Report cannot be reproduced partially without a prior written consent of J.S. Hamilton Poland Sp. z o.o. Responsibility of J.S. Hamilton Poland Sp. z o.o. is restricted exclusively to the results and statements presented in original copy of the Report. The service confirmed by this Report is subject to the General Terms and Conditions of Services of J.S. Hamilton Poland Sp. z o.o. published on www.hamilton.com.pl

* Test method accredited; # Test performed by external provider

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Form PO-10/02a of 20.01.2020

J.S. HAMILTON POLAND Sp. z o.o.
TESTING LABORATORY

ul. Chwaszczyńska 180, 81-571 Gdynia, Poland, tel. +48 58 766 99 00



AGROLAB Polska Sp z o.o.

ul Balonna 1, 08-530 Dęblin, Poland
Tel.: +48 81 4400700, Fax: Tel.: +48 81 4400701
deblin@agrolab.pl www.agrolab.pl

Napiferyn Biotech Sp. z o.o.
Dubois 114/116
93-465 Łódź

Date 05.08.2021
Customer no. 105823

REPORT 353648 - 527498

Order 353648
Sample no. 527498
Sample acceptance 21.07.2021
Date of sampling No information.
Sample taker Client
Customer sample description R-12#52 (protein isolate)
Sample condition No objections
Packaging Plastic bottle, closed
Acceptance temperature [°C] +12,0

Unit Result Uncertainty Declaration Method

Physicochemical tests

Trypsin inhibitor ^{v)}	mg/g	2,7				Spectrophotometric method PN-EN ISO 14902:2005(LP)

Parameter-specific analytical measurement uncertainties and information regarding the method of calculation will be provided upon request if the reported results are above the parameter-specific limit of quantification.

Uncertainty does not take into account the uncertainty associated with sampling.

v) external service

Externally provided service by

(LP) Krajowe Laboratorium Pasz, ul. Chmielna 2, 20-079 Lublin, accredited for the cited method according to PN-EN ISO/IEC 17025:2018-02, Accreditation number: AB 856

Methods

Spectrophotometric method PN-EN ISO 14902:2005

Start of testing: 21/07/2021

End of testing: 05/08/2021

The results are related only to the samples tested. In cases where the laboratory has not been responsible for sampling, the reported results apply to the samples as received. Duplication of this document or of parts of it requires the authorization from laboratory.

The activities reported in this document are accredited according to PN-EN ISO/IEC 17025:2018-02. Only not accredited activities are identified by the symbol " *) " .

AGROLAB Polska Sp z o.o.

ul Balonna 1, 08-530 Dęblin, Poland
Tel.: +48 81 4400700, Fax: Tel.: +48 81 4400701
deblin@agrolab.pl www.agrolab.pl

Date 05.08.2021
Customer no. 105823

REPORT 353648 - 527498



Compiled: AGROLAB Polska mgr inż. Aleksandra Zugaj, Tel. +48/81 4400705
Customer service

Authorized:
mgr Katarzyna Wiśniewska, Kierownik Pracowni Analiz Instrumentalnych

The activities reported in this document are accredited according to PN-EN ISO/IEC 17025:2018-02. Only not accredited activities are identified by the symbol " *) " .



CERTIFICATE OF ANALYSIS

Report date	22.08.2021
Sample number	R-12#52
Sample name	Raptein™90 (rapeseed protein isolate)

Parameters	Method	Unit	Result
Total phenolics expressed as sinapic acid	Internal: IWA No. 2.5.4 version 001 from 30/04/2019; HPLC-UV	% DM	0,008 ± 0,000

THE END OF THE REPORT

Authorized by:

Analytical Specialist

(signature)

Approved by:

Analysis and Application Development
Manager

(signature)



Eurofins Polska Sp. z o.o.
Aleja Wojska Polskiego 90 A
PL-82 200 Malbork
POLAND
Tel: +48 55 272 04 73, Fax:
www.eurofins.pl



AB 1334

NapiFeryn BioTech Sp. z o.o.
ul. Dubois 114/116
93-465 Łódź
POLSKA

Issue date 03.09.2021

Analytical report AR-21-ST-108343-01

Sample Code 720-2021-00166546

* Type of sample	protein isolate
* Prescriber	005-32419-2805912
* Purchase order date	NapiFeryn BioTech Sp. z o.o.
Reception date	20.07.2021
Transport by	29.07.2021
Sample condition	Customer
Transport condition	acceptable
* Sampling Person	at ambient temp.
* Type of sampling	principal
* Purpose of the testing	to guarantee its representativeness
Client sample code	technological sample
Number of tested samples	R-15#59
Start analysis	1
End Analysis	29.07.2021
	02.09.2021

Results

pesticides

SF00S	Phosphane in food/feed (A)		
Method	Internal Method [DE Food], HS-GC-FPD		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Phosphane		<0,005	* mg/kg
SF277	Ethametsulfuron-methyl (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Ethametsulfuron-methyl		<0,01	* mg/kg
SF55N	Fluxapyroxad (A)		
Method	§ 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], GC-MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Fluxapyroxad		<0,1	* mg/kg
SF7BR	Saflufenacil (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Saflufenacil		<0,01	* mg/kg

SF7C9	Fluopyram (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Fluopyram	<0,01	*	mg/kg	
SF8TD	Flumioxazin (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Flumioxazin	<0,01	*	mg/kg	
SF91A	Fluoxastrobin (A)			
Method	§ 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], GC-MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Fluoxastrobin	<0,1	*	mg/kg	
SFCFC	Prothioconazole (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Prothioconazole	<0,1	*	mg/kg	
SFLA0	Pesticide Screening GC/MS in food with low water content (A)			
Method	§ 64 LFGB L 00.00-34 : 2010-09, mod. [DE Food], GC-MS [GC-MS]			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Screened pesticides	<LOQ		mg/kg	
SFLD0	Pesticide screening using LC/MS/MS in food (A)			
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS [LC-MS/MS]			
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00				
Screened pesticides	<LOQ		mg/kg	
SPGG4	Glyphosate, AMPA (Glyphosate metabolite) and Glufosinate (A)			
Method	Internal Method, SPG-14.158.3, LC-MS/MS			
Eurofins Dr. Specht International GmbH, accreditation nr. D-PL-20881-01-00				
Aminomethylphosphonic acid (AMPA)	< 0,01		mg/kg	
Glufosinate	< 0,01		mg/kg	
Glyphosate	< 0,01		mg/kg	
A7126	Ochratoxin A (food) (A)			
Method	DIN EN 14132 (2009-09), mod., IAC-LC-FLD			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00				
Ochratoxin A (OTA)	<0,5	*	µg/kg	
AA602	Fluoride (A)			
Method	Wewętrzn, Potentiometry			
Eurofins Analytics France (Nantes), accreditation nr. 1-0287				
Fluorine (F)	<20		mg/kg	
DI004	Amino acids (acid hydrolysis) (A)			
Method	AMSUR, IC-UV			
Eurofins Vitamin Testing Denmark, accreditation nr. 581				
Alanine	4,32		g/100 g	± 0.605
Arginine	6,06		g/100 g	± 0.848
Aspartic acid	7,93		g/100 g	± 1.110
Glutamic acid	18,0		g/100 g	± 2.520
Glycine	4,79		g/100 g	± 0.671
Histidine	2,55		g/100 g	± 0.357
Hydroxyproline	<0,2 (LOQ)		g/100 g	
Isoleucine	3,87		g/100 g	± 0.542
Leucine	7,11		g/100 g	± 0.995
Lysine	5,69		g/100 g	± 0.797
Ornithine	<0,05 (LOQ)		g/100 g	

Phenylalanine	3,96	g/100 g	± 0.554
Proline	5,07	g/100 g	± 0.710
Serine	4,05	g/100 g	± 0.567
Threonine	3,96	g/100 g	± 0.554
Tyrosine	2,59	g/100 g	± 0.363
Valine	5,02	g/100 g	± 0.703
DJ009 Tryptophane (A)			
Method	EU 152/2009, LC-FLD		
Eurofins Vitamin Testing Denmark, accreditation nr. 581			
Tryptophan (Total)	1,32	g/100 g	± 0.132
DJ011 Cysteine+Cystine & methionine (ox-amino acid) (A)			
Method	IC-UV		
Eurofins Vitamin Testing Denmark, accreditation nr. 581			
Cystein +Cystine	1,76	g/100 g	± 0.246
Methionine	1,96	g/100 g	± 0.274
EF12C Cyantraniliprole (A)			
Method	DIN EN 15662:2009-02, mod., LC-MS/MS		
Eurofins CLF (Friedrichsdorf), accreditation nr. D-PL-14076-01-00			
Cyantraniliprole	<0,005	* mg/kg	
EF18Y Isofetamid (A)			
Method	DIN EN 15662:2009-02, mod., LC-MS/MS		
Eurofins CLF (Friedrichsdorf), accreditation nr. D-PL-14076-01-00			
Isofetamid	<0,005	* mg/kg	
J1003 Arsenic (As) (A)			
Method	§64 LFGB L 00.00-19/3, GF-AAS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Arsenic (As)	<0,1	* mg/kg	
JCAA1 Acrylamide in Food (A)			
Method	metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Acrylamide	<30	* µg/kg	
JCHG2 Mercury (Hg) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Mercury [Hg]	<0,005	* mg/kg	
JCHRU Lead (Pb) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Lead (Pb)	110	µg/kg	± 21
JCM04 Cadmium (Cd) (A)			
Method	DIN EN ISO 15763 (2010), ICP-MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Cadmium (Cd)	0,097	mg/kg	± 0.02
JJ006 Aflatoxins B1, B2, G1, G2 (food) (A)			
Method	DIN EN 14123 (2008-03), mod., IAC-LC-FLD		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Aflatoxin B1	<0,1	* µg/kg	
Aflatoxin B2	<0,1	* µg/kg	
Aflatoxin G1	<0,1	* µg/kg	
Aflatoxin G2	<0,1	* µg/kg	
Sum of all positive Aflatoxins	<0,4	* µg/kg	
JJ088 Fumonisine B1, B2, B3 (maize and products derived from maize) (A)			
Method	metoda własna, LC-MS/MS		
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			

Fumonisin B1 (FB1)	<20	* µg/kg	
Fumonisin B2 (FB2)	<20	* µg/kg	
Fumonisin B3 (FB3)	<20	* µg/kg	
Fumonisin sum (B1+B2)	<40	* µg/kg	
Fumonisin sum (B1+B2+B3)	<60	* µg/kg	
JJ0CT Aluminium (Al) (A)			
Method EN ISO 17294-2-E29, ICP-MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
Aluminium	3,4	mg/kg	± 0.8
JJ0FF Fusarium toxins big (DON, ZON T2, HT2, NIV, ADON, DAS, FX) (A)			
Method metoda własna, LC-MS/MS			
Eurofins WEJ Contaminants GmbH (Hamburg), accreditation nr. D-PL-14602-01-00			
15-Acetyldeoxynivalenol (15-ADON)	<20	* µg/kg	
3-Acetyldeoxynivalenol (3-ADON)	<20	* µg/kg	
Deoxynivalenol (Vomitoxin)	<20	* µg/kg	
Diacetoxyscirpenol (DAS)	<10	* µg/kg	
Fusarenone X (FX)	<20	* µg/kg	
HT-2 Toxin	<10	* µg/kg	
Nivalenol (NIV)	<20	* µg/kg	
sum T-2 HT-2 toxin	<20	* µg/kg	
T-2 Toxin	<10	* µg/kg	
Zearalenone (ZON)	<10	* µg/kg	
LP131 Multimethod for pesticides in cereals and cereal products. (#)			
Method NMKL 195 mod., LC-MS/MS			
Subcontracted to the Eurofins laboratory Eurofins Food & Feed Testing Sweden (Lidköping)			
2,4-DB	<0,010	mg/kg	
2,4-Dimethylphenylformamide	<0,010	mg/kg	
Abamectin	<0,050	mg/kg	
Acephate	<0,010	mg/kg	
Acetamiprid	<0,010	mg/kg	
Acrinathrin	<0,010	mg/kg	
Aldicarb	<0,010	mg/kg	
Aldicarb-sulfone	<0,010	mg/kg	
Aldicarb-sulfoxide	<0,010	mg/kg	
Aldrin	<0,010	mg/kg	
Ametoctradin	<0,010	mg/kg	
Amitraz	<0,010	mg/kg	
AMTT	<0,050	mg/kg	
Azinphos-ethyl	<0,010	mg/kg	
Azinphos-methyl	<0,010	mg/kg	
Azoxystrobin	<0,010	mg/kg	
Benalaxyl	<0,010	mg/kg	
Benfuracarb	<0,010	mg/kg	
Bentazone	<0,010	mg/kg	
Benzovindiflupyr	<0,010	mg/kg	
Bifenthrin	<0,010	mg/kg	
Biphenyl	<0,010	mg/kg	
Bitertanol	<0,010	mg/kg	
Bixafen	<0,010	mg/kg	
Boscalid	<0,010	mg/kg	
Bromophos-ethyl	<0,010	mg/kg	
Bromophos-methyl	<0,010	mg/kg	

Bromopropylate	<0,010	mg/kg
Bromoxynil	<0,010	mg/kg
Bromuconazole	<0,010	mg/kg
Bupirimate	<0,010	mg/kg
Buprofezin	<0,010	mg/kg
BYI08330 enol-glucoside	<0,050	mg/kg
BYI08330-enol	<0,050	mg/kg
BYI08330-ketohydroxy	<0,050	mg/kg
BYI08330-monohydroxy	<0,050	mg/kg
Cadusafos	<0,010	mg/kg
Captan	<0,050	mg/kg
Carbaryl	<0,010	mg/kg
Carbendazim	<0,010	mg/kg
Carbofuran	<0,010	mg/kg
Carbofuran 3-OH	<0,010	mg/kg
Carbosulfan	<0,010	mg/kg
Carboxin	<0,010	mg/kg
Carfentrazone-ethyl	<0,010	mg/kg
Carpropamid	<0,010	mg/kg
Chlorantraniliprole	<0,010	mg/kg
Chlordane-alpha	<0,010	mg/kg
Chlordane-gamma	<0,010	mg/kg
Chlorfenapyr	<0,050	mg/kg
Chlorfenvinphos	<0,010	mg/kg
Chlorfluazuron	<0,010	mg/kg
Chlorobenzilate	<0,010	mg/kg
Chlorothalonil	<0,050	mg/kg
Chlorpropham (CIPC)	<0,050	mg/kg
Chlorpyrifos-ethyl	<0,010	mg/kg
Chlorpyrifos-methyl	<0,010	mg/kg
Cinmethylin	<0,010	mg/kg
Clofentezine	<0,010	mg/kg
Clomazone	<0,010	mg/kg
Clothianidin	<0,010	mg/kg
Cyanazine	<0,010	mg/kg
Cyazofamid	<0,010	mg/kg
Cyflufenamid	<0,010	mg/kg
Cyfluthrin	<0,010	mg/kg
Cyfluthrin beta	<0,010	mg/kg
Cyhalofop-butyl	<0,010	mg/kg
Cyhalothrin, lambda-	<0,010	mg/kg
Cymoxanil	<0,010	mg/kg
Cypermethrin	<0,010	mg/kg
Cypermethrin, alpha-	<0,010	mg/kg
Cyproconazole	<0,010	mg/kg
Cyprodinil	<0,010	mg/kg
D 2,4-	<0,010	mg/kg
D 2,4-methylester	<0,010	mg/kg
DDD, p,p'-	<0,010	mg/kg
DDE, p,p'-	<0,010	mg/kg
DDT, o,p'-	<0,010	mg/kg

DDT, p,p'-	<0,010	mg/kg
Deltamethrin	<0,010	mg/kg
Demeton-S-methyl	<0,010	mg/kg
Demeton-S-methyl-sulfone	<0,010	mg/kg
Demeton-S-methyl-sulfoxide	<0,010	mg/kg
Diazinon	<0,010	mg/kg
Dicamba	<0,050	mg/kg
Dichlofluanid	<0,050	mg/kg
Dichloranilin-3,5	<0,010	mg/kg
Dichlorvos	<0,010	mg/kg
Dicloran	<0,010	mg/kg
Diclorprop	<0,010	mg/kg
Dicofol, p,p'-	<0,050	mg/kg
Dicrotophos	<0,010	mg/kg
Dieldrin	<0,010	mg/kg
Diethofencarb	<0,010	mg/kg
Difenoconazole	<0,010	mg/kg
Diffubenzuron	<0,010	mg/kg
Diffufenican	<0,010	mg/kg
Dimethoate	<0,010	mg/kg
Dimethomorph	<0,010	mg/kg
Diniconazole	<0,010	mg/kg
Dinocap	<0,010	mg/kg
Diphenylamine	<0,010	mg/kg
Disulfoton	<0,010	mg/kg
Disulfoton sulfone	<0,010	mg/kg
Disulfoton sulfoxide	<0,010	mg/kg
DMSA	<0,010	mg/kg
DMST	<0,010	mg/kg
Dodine	<0,050	mg/kg
Emamectin	<0,010	mg/kg
Endosulfan-alpha	<0,010	mg/kg
Endosulfan-beta	<0,010	mg/kg
Endosulfan-sulfate	<0,010	mg/kg
Endrin	<0,050	mg/kg
EPN	<0,010	mg/kg
Epoxiconazole	<0,010	mg/kg
Esfenvalerate	<0,010	mg/kg
Ethion	<0,010	mg/kg
Ethirimol	<0,010	mg/kg
Ethoprophos	<0,010	mg/kg
Etofenprox	<0,010	mg/kg
Etoxazole	<0,010	mg/kg
Etrimfos	<0,010	mg/kg
Famoxadone	<0,010	mg/kg
Fenamidone	<0,010	mg/kg
Fenamiphos	<0,010	mg/kg
Fenamiphos-sulfone	<0,010	mg/kg
Fenamiphos-sulfoxide	<0,010	mg/kg
Fenarimol	<0,010	mg/kg
Fenazaquin	<0,010	mg/kg

Fenbuconazole	<0,010	mg/kg
Fenchlorphos-oxon	<0,010	mg/kg
Fenhexamid	<0,010	mg/kg
Fenitrothion	<0,010	mg/kg
Fenoxaprop-P	<0,050	mg/kg
Fenoxycarb	<0,010	mg/kg
Fenpicoxamid	<0,010	mg/kg
Fenpropathrin	<0,010	mg/kg
Fenpropidin	<0,010	mg/kg
Fenpropimorph	<0,010	mg/kg
Fenpyrazamine	<0,010	mg/kg
Fenpyroximate	<0,010	mg/kg
Fenthion	<0,010	mg/kg
Fenthion sulfone	<0,010	mg/kg
Fenthion-oxon	<0,010	mg/kg
Fenthion-oxon-sulfoxide	<0,010	mg/kg
Fenthion-sulfoxide	<0,010	mg/kg
Fenthion-oxon-sulphone	<0,010	mg/kg
Fenvalerate	<0,010	mg/kg
Fipronil	<0,010	mg/kg
Fipronil-sulfone	<0,010	mg/kg
Flamprop	<0,010	mg/kg
Flonicamid	<0,010	mg/kg
Florasulam	<0,010	mg/kg
Florpyrauxifen-benzyl	<0,010	mg/kg
Fluazifop	<0,010	mg/kg
Fluazifop-P-butyl	<0,010	mg/kg
Flubendiamide	<0,010	mg/kg
Fludioxonil	<0,010	mg/kg
Flufenacet	<0,010	mg/kg
Flufenoxuron	<0,010	mg/kg
Flupicolid	<0,010	mg/kg
Fluopyram	<0,010	mg/kg
Fluoxastrobin	<0,010	mg/kg
Flupyradifurone	<0,010	mg/kg
Fluquinconazole	<0,010	mg/kg
Fluroxypyr	<0,010	mg/kg
Flusilazole	<0,010	mg/kg
Flutolanil	<0,010	mg/kg
Flutriafol	<0,010	mg/kg
Fluvalinate (sum of isomers)	<0,010	mg/kg
Fluxapyroxad	<0,010	mg/kg
Folpet	<0,050	mg/kg
Formothion	<0,050	mg/kg
Fosthiazate	<0,010	mg/kg
Fuberidazole	<0,010	mg/kg
Halauxifen	<0,010	mg/kg
Halauxifen-methyl	<0,010	mg/kg
Haloxypop	<0,010	mg/kg
Haloxypop-2-ethoxyethyl	<0,010	mg/kg
Haloxypop-R-methyl	<0,010	mg/kg

HCH, alpha-	<0,010	mg/kg
HCH, beta-	<0,010	mg/kg
HCH, delta-	<0,010	mg/kg
HCH, gamma- (Lindane)	<0,010	mg/kg
Heptachlor	<0,010	mg/kg
Heptachlorepoxyde, cis-	<0,050	mg/kg
Heptachlorepoxyde, trans-	<0,050	mg/kg
Hexachlorobenzene (HCB)	<0,010	mg/kg
Hexaconazole	<0,010	mg/kg
Hexythiazox	<0,010	mg/kg
Imazalil	<0,010	mg/kg
Imidacloprid	<0,010	mg/kg
Indoxacarb (sum, R+S isomers)	<0,010	mg/kg
Ioxynil	<0,010	mg/kg
Iprodione	<0,010	mg/kg
Iprovalicarb	<0,010	mg/kg
Isocarbofos	<0,050	mg/kg
Isofenphos	<0,010	mg/kg
Isofenphos-methyl	<0,010	mg/kg
Isoprocarb	<0,010	mg/kg
Isoprothiolane	<0,010	mg/kg
Isoproturon	<0,010	mg/kg
Isopyrazam	<0,010	mg/kg
Isotianil	<0,010	mg/kg
Isoxaben	<0,010	mg/kg
Isoxaflutole	<0,010	mg/kg
Kresoxim-methyl	<0,010	mg/kg
Linuron	<0,010	mg/kg
Lufenuron	<0,010	mg/kg
Malathion	<0,010	mg/kg
Malathion-O-analogue	<0,010	mg/kg
Mandestrobin	<0,010	mg/kg
Mandipropamid	<0,010	mg/kg
MCPA	<0,010	mg/kg
MCPA-metylester	<0,010	mg/kg
MCPB	<0,050	mg/kg
Mecoprop	<0,010	mg/kg
Mepanipyrim	<0,010	mg/kg
Metalaxyl	<0,010	mg/kg
Metalaxyl-M	<0,010	mg/kg
Metconazole	<0,010	mg/kg
Methacrifos	<0,010	mg/kg
Methamidophos	<0,010	mg/kg
Methidathion	<0,010	mg/kg
Methiocarb	<0,010	mg/kg
Methiocarb sulfoxide	<0,010	mg/kg
Methiocarb-sulfone	<0,010	mg/kg
Methomyl	<0,010	mg/kg
Methoprene	<0,050	mg/kg
Methoxychlor	<0,010	mg/kg
Methoxyfenozone	<0,010	mg/kg

Metobromuron	<0,010	mg/kg
Metolachlor	<0,010	mg/kg
Metominostrobin	<0,010	mg/kg
Metrafenone	<0,010	mg/kg
Metribuzin	<0,010	mg/kg
Milbemectin A3	<0,050	mg/kg
Milbemectin A4	<0,050	mg/kg
Molinate	<0,010	mg/kg
Monocrotophos	<0,010	mg/kg
Myclobutanil	<0,010	mg/kg
N-2,4-dimethylphenyl-N-methylformamidine	<0,010	mg/kg
Nitrofen	<0,010	mg/kg
Novaluron	<0,010	mg/kg
Omethoate	<0,010	mg/kg
Orthophenylphenol	<0,010	mg/kg
Orthosulfamuron	<0,010	mg/kg
Orysastobin	<0,010	mg/kg
Oxadiazyl	<0,010	mg/kg
Oxadixyl	<0,010	mg/kg
Oxamyl	<0,010	mg/kg
Oxasulfuron	<0,010	mg/kg
Oxpoconazole	<0,010	mg/kg
Oxychlorane	<0,010	mg/kg
Oxyfluorfen	<0,010	mg/kg
Paclobutrazol	<0,010	mg/kg
Paraoxon-methyl	<0,010	mg/kg
Parathion	<0,010	mg/kg
Parathion-methyl	<0,010	mg/kg
Pefurazoate	<0,010	mg/kg
Penconazole	<0,010	mg/kg
Pencycuron	<0,010	mg/kg
Pendimethalin	<0,010	mg/kg
Penflufen	<0,010	mg/kg
Pentachloroaniline	<0,010	mg/kg
Penthiopyrad	<0,010	mg/kg
Permethrin	<0,010	mg/kg
Phenthoate	<0,010	mg/kg
Phosalone	<0,010	mg/kg
Phosmet	<0,010	mg/kg
Phosmet-oxon	<0,050	mg/kg
Phosphamidon	<0,010	mg/kg
Phoxim	<0,010	mg/kg
Picolinafen	<0,010	mg/kg
Pirimicarb	<0,010	mg/kg
Pirimicarb-desmethyl	<0,010	mg/kg
Pirimicarb-Desmethylformamido	<0,010	mg/kg
Pirimiphos-methyl	<0,010	mg/kg
Probenazole	<0,010	mg/kg
Prochloraz	<0,010	mg/kg
Procymidone	<0,010	mg/kg
Profenofos	<0,010	mg/kg

Propaquizafop	<0,010	mg/kg
Propargite	<0,010	mg/kg
Propiconazole	<0,010	mg/kg
Propoxur	<0,010	mg/kg
Propyzamide	<0,010	mg/kg
Proquinazid	<0,010	mg/kg
Prosulfocarb	<0,010	mg/kg
Prothioconazole	<0,050	mg/kg
Prothioconazole-desthio	<0,010	mg/kg
Prothiofos	<0,050	mg/kg
Pydiflumetofen	<0,010	mg/kg
Pyraclostrobin	<0,010	mg/kg
Pyrazophos	<0,010	mg/kg
Pyrethrins (total)	<0,050	mg/kg
Pyridaben	<0,010	mg/kg
Pyridalyl	<0,010	mg/kg
Pyridate	<0,010	mg/kg
Pyrimethanil	<0,010	mg/kg
Pyriofenone	<0,010	mg/kg
Pyriproxyfen	<0,010	mg/kg
Pyroxsulam	<0,010	mg/kg
Quinclorac	<0,050	mg/kg
Quinoclamine	<0,010	mg/kg
Quinoxyfen	<0,010	mg/kg
Quintozene	<0,010	mg/kg
Quizalofop	<0,010	mg/kg
Quizalofop ethyl	<0,010	mg/kg
Resmethrins (I+II)	<0,010	mg/kg
Rotenone	<0,010	mg/kg
Sedaxane	<0,010	mg/kg
Spinetoram	<0,050	mg/kg
Spinosad (Spinosyn A+D)	<0,010	mg/kg
Spirodiclofen	<0,010	mg/kg
Spiromesifen	<0,010	mg/kg
Spirotetramat	<0,010	mg/kg
Spiroxamine	<0,010	mg/kg
Sulfoxaflor	<0,010	mg/kg
T -2,4,5	<0,010	mg/kg
Tebuconazole	<0,010	mg/kg
Tebufenozide	<0,010	mg/kg
Tebufenpyrad	<0,010	mg/kg
Tecnazene	<0,010	mg/kg
Teflubenzuron	<0,010	mg/kg
Tefluthrin	<0,010	mg/kg
Terbuthylazine	<0,010	mg/kg
Tetraconazole	<0,010	mg/kg
Tetradifon	<0,010	mg/kg
Tetramethrin	<0,010	mg/kg
TFNA	<0,010	mg/kg
TFNG	<0,010	mg/kg
Thiabendazole	<0,010	mg/kg

Thiacloprid	<0,010	mg/kg
Thiamethoxam	<0,010	mg/kg
Thiodicarb	<0,050	mg/kg
Thiometon	<0,010	mg/kg
Thiometon-sulfone	<0,010	mg/kg
Thiophanate-methyl	<0,010	mg/kg
Tiadinil	<0,010	mg/kg
Tolclofos-methyl	<0,010	mg/kg
Tolpyralate	<0,010	mg/kg
Tolyfluanid	<0,010	mg/kg
Triadimefon	<0,010	mg/kg
Triadimenol	<0,010	mg/kg
Tri-allate	<0,010	mg/kg
Triazophos	<0,010	mg/kg
Triazoxide	<0,010	mg/kg
Tribenuron methyl	<0,010	mg/kg
Tribromophenole 2,4,6	<0,010	mg/kg
Trichlorfon	<0,010	mg/kg
Trichlorophenole 2,4,6	<0,010	mg/kg
Triclopyr	<0,010	mg/kg
Tricyclazole	<0,010	mg/kg
Trifloxystrobin	<0,010	mg/kg
Triflumezopyrim	<0,010	mg/kg
Triflumuron	<0,010	mg/kg
Trifluralin	<0,010	mg/kg
Trinexapac (free acid)	<0,010	mg/kg
Trinexapac-ethyl	<0,010	mg/kg
Triticonazole	<0,010	mg/kg
Tritosulfuron	<0,010	mg/kg
Vinclozolin	<0,010	mg/kg
Zeta-Cypermethrin	<0,010	mg/kg
Zoxamide	<0,010	mg/kg
QD08G Glucosinolate in Canola Products (A)		
Method LC-UV/VIS		
Eurofins Scientific Inc. (Des Moines), accreditation nr. 2927.01		
4-Hydroxyglucobrassicin	<0,05	µmol/g
Epiprogoitrin	<0,05	µmol/g
Glucoalyssin	<0,05	µmol/g
Glucobrassicinapin	<0,05	µmol/g
Glucobrassicin	<0,05	µmol/g
Glucoerucin	<0,05	µmol/g
Glucoiberin	<0,05	µmol/g
Gluconapin	<0,05	µmol/g
Gluconapoleiferin	<0,05	µmol/g
Gluconasturtiin	<0,05	µmol/g
Glucoraphanin	<0,05	µmol/g
Glucosinolates (sum)	<0,05	µmol/g
Glucotropaeolin	<0,05	µmol/g
Neoglucobrassicin	<0,05	µmol/g
Progoitrin	<0,05	µmol/g
Sinalbin	<0,05	µmol/g
QD495 Phytic Acid (#)		

Method	Analytical Biochemistry Vol. 77:536-539 (1977), ICP-OES		
Subcontracted to the Eurofins laboratory Eurofins Scientific Inc. (Des Moines)			
Kwas fitynowy/Phytic acid	0,75	%	
SF3SL	Sulfurylfluoride in selected food (A)		
Method	Internal Method [DE Food], HS-GC-MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Sulfuryl fluoride	<0,01	*	mg/kg
SF3WU	Penthiopyrad (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Penthiopyrad	<0,01	*	mg/kg
SF98A	Methylbromide (A)		
Method	Internal Method [DE Food], HS-GC-MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Methyl bromide	<0,1	*	mg/kg
SFAZ3	Penflufen (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Penflufen	<0,01	*	mg/kg
SFDMZ	Benzovindiflupyr (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Benzovindiflupyr	<0,01	*	mg/kg
SFDN1	Flupyradifurone (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Flupyradifurone	<0,01	*	mg/kg
SFDN3	Sedaxane (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Sedaxane	<0,01	*	mg/kg
SFDN4	Sulfoxaflor (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Sulfoxaflor	<0,01	*	mg/kg
SFFF0	Paraquat and diquat in food and feed (A)		
Method	Internal Method [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Diquat	<0,02	*	mg/kg
Paraquat	<0,02	*	mg/kg
SFFW4	Mefentrifluconazole (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Mefentrifluconazole	<0,01	*	mg/kg
SFLC0	Determination of acidic herbicides in dry and water rich food (A)		
Method	§ 64 LFGB L 00.00-113 : 2015-03, mod. [DE Food], LC-MS/MS [LC-MS/MS]		
Eurofins SOFIA Berlin (Rudower Chaussee), accreditation nr. D-PL-19579-02-00			
Screened pesticides	<LOQ		mg/kg
ST05Z	Protein content (Nx6,25) (A)		
Method	ISO 1871:2009, Titrimetry		
Nitrogen - Kjeldahl	14,31	%	± 2,29
Protein (Nx6,25)	89,44	%	± 14,31
ST0LH	Content of fat after hydrolisis (A)		
Method	PB/CH/16 wydanie 3 z dnia 09.11.2018, Gravimetry		

Content of fat after hydrolisis	0,51	%	± 0,05
ST05I Fatty acid composition (A)			
Method	PN EN ISO 12966-1:2015-01 + AC:2015-06, Method gas chromatography with flame ionization detection , GC-FID		
C 10:0 (Capric acid)	<0,1	* %	
C 11:0 (Undecanoic acid)	<0,1	* %	
C 12:0 (Lauric acid)	<0,1	* %	
C 13:0 (Tridecanoic acid)	<0,1	* %	
C 14:0 (Myristic acid)	<0,1	* %	
C 14:1 (Myristoleic acid)	<0,1	* %	
C 15:0 (Anteisopentdecanoic acid)	<0,1	* %	
C 15:1 (Pentadecenoic acid) + Isomers	<0,1	* %	
C 16:0 (Palmitic acid)	7,38	%	
C 16:1 (Palmitoleic acid)	0,40	%	
C 17:0 (Margaric acid)	<0,1	* %	
C 17:1 (Heptadecenoic acid)	<0,1	* %	
C 18:0 (Stearic acid)	2,07	%	
C 18:1 c others	<0,1	* %	
C 18:1 C11	4,00	%	
C 18:1 n9 Octadecan acid	48,41	%	
C 18:1t (Elaidic Acid)	<0,1	* %	
C 18:2 (Linoleic acid)	25,63	%	
C 18:2 (trans/trans)	<0,1	* %	
C 18:3 (alpha-linolenic acid)	9,57	%	
C 18:3 (gamma-linolenic acid)	<0,1	* %	
C 18:3 trans	<0,1	* %	
C 18:4 (Octadecatetraenic acid)	<0,1	* %	
C 20:0 (Arachidic acid)	0,65	%	
C 20:1 (Eicosenoic acid)	0,92	%	
C 20:2 Eicosadienoic acid n-6	<0,1	* %	
C 20:3 (Eicosatrienoic acid)	<0,1	* %	
C 20:4 Eicosatetraenoic/Arachidonic acid	<0,1	* %	
C 20:5 Eicosapentaenoic acid	<0,1	* %	
C 20:3 Eicosatrienoic acid n-6	<0,1	* %	
C 21:0 Henikanozanian metylu	<0,1	* %	
C 22:0 (Behenic acid)	0,40	%	
C 22:1 Docosenoic acid	<0,1	* %	
C 22:1 isomers	<0,1	* %	
C 22:2 (Docosadienoic acid)	<0,1	* %	
C 22:4 Docosatetraenoic acid	<0,1	* %	
C 22:5 Docosapentaenoic acid (Omega 3)	<0,1	* %	
C 22:6 omega 3	<0,1	* %	
C 23:0 (Tricosanoic acid)	<0,1	* %	
C 24:0 (Lignoceric acid)	0,24	%	
C 24:1 (Nervonic acid)	0,32	%	
C 4:0 Butanoic acid	<0,1	* %	
C 6:0 (Caproic acid)	<0,1	* %	
C 8:0 Octanoic acid	<0,1	* %	
Mono unsaturated fatty acids	0,28	g/100 g	± 0,08
Omega-3 fatty acids	<0,1	* g/100 g	
Omega-6 fatty acids	0,13	g/100 g	± 0,04
Omega-9 fatty acids	0,25	g/100 g	± 0,08
Poly unsaturated fatty acids	0,18	g/100 g	± 0,06

Saturated fatty acids	<0,1	*	g/100 g
Trans fatty acids	<0,1	*	g/100 g
ST0Y8	Ash total content (A)		
Method	PN-A-79011-8:1998, Gravimetry		
Ash	1,11	%	± 0,23
ST0YE	Water, dry mass content (A)		
Method	PN-A-79011-3:1998, weight		
Dry matter	95,3	%	± 7,6
Moisture (103 °C)	4,7	%	± 0,4
ST1MH	Crude fiber content (A)		
Method	Dz.U.UEL54/1 z dn 26.2.2009(WE) nr152/2009 zał.III, Weight method		
Crude fiber	<0,30	%	

* = less than the limit of quantification

= Not accredited

A = Method accredited

+/- Uncertainty of measurement presented as expanded uncertainty of measurement (95%; k=2).

x = Data provided by the customer

JUDGEMENT

The results for the content of individual fatty acids and the sum of the trans isomers of fatty acids refer to fat [g / 100 g fat]; the residual fatty acid groups contents relate to the sample [g / 100 g sample].



Authorized by: Monika Miętus
Zastępca Kierownika Pracowni Chemicznej



Paulina Matusiewicz Approved by:
Analytical Service Manager

Scope of screened pesticides: SF00S

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Phosphane	7803-51-2	mg / kg	0,005	0,00	3-GC-FPD // LA-GC-109-

Scope of screened pesticides: SF277

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Ethametsulfuronmethyl	97780-06-8	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF55N

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluxapyroxad	907204-31-3	mg / kg	0,100	0,00	S // acc. to Screening or Pi

Scope of screened pesticides: SF7BR

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Saflufenacil	372137-35-4	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF7C9

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluopyram	658066-35-4	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF8TD

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Flumioxazin	103361-09-7	mg / kg	0,010	0,00	MS // acc. to Screening or

Scope of screened pesticides: SF91A

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fluoxastrobin	361377-29-9	mg / kg	-	0,00	S // acc. to Screening or Pi

Scope of screened pesticides: SFCFC

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Prothioconazole	178928-70-6	mg / kg	0,010	0,00	-MS/MS // LA-LCMS-042

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
! Pesticides screened (all)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
2,4,5-T-Methylester	1928-37-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
2,4-D-Methylester	1928-38-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Acetochlor	34256-82-1	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Aclonifen	74070-46-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Acrinathrin	101007-06-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Alachlor	15972-60-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Aldrin	309-00-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Aldrin/ Dieldrin (Sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Allethrin	584-79-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Amidithion	919-76-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Atrazin	1912-24-9	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Azaconazole	60207-31-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Azinphos-ethyl	2642-71-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Azinphos-methyl	86-50-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Azoxystrobin	131860-33-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Benfluralin	1861-40-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Benoxacor	98730-04-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Benzoylprop-ethyl	22212-55-1	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Bifenox	42576-02-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Binapacryl	485-31-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Biphenethrin	82657-04-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bitertanol	55179-31-2	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Boscalid	188425-85-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Bromfenvinphos	33399-00-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Bromocyclene	1715-40-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Bromophos	2104-96-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bromophos-ethyl	4824-78-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Bromopropylate	18181-80-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Buprofezin	69327-76-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Butachlor	23184-66-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Butamifos	36335-67-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Butralin	33629-47-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cadusafos	95465-99-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Captan	133-06-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Carbophenothion	786-19-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Carbophenothion-methyl	953-17-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Carfentrazone-ethyl	128639-02-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chinomethionate	2439-01-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorbenside	103-17-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlordane (total)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Chlordane, cis-	5103-71-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlordane, oxy-	27304-13-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Chlordane, trans-	5103-74-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
CHLORETHOXYFOS	54593-83-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenapyr	122453-73-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenprop-methyl	14437-17-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorfenson	80-33-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorfenvinphos	470-90-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chloridazone	1698-60-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Chlormephos	24934-91-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorobenzilate	510-15-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chloroneb	2675-77-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Chloropropylate	5836-10-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorothalonil	1897-45-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorpyrifos (-ethyl)	2921-88-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorpyrifos-methyl	5598-13-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorthal-dimethyl	1861-32-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlorthion	500-28-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Chlorthiophos	21923-23-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Chlozolinate	84332-86-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cinidon-ethyl	142891-20-1	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Clodinafop-propargyl	105512-06-9	mg / kg	0,030	0,00	MS [GC-MS] // LA-GC-00
Coumaphos	56-72-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Crotoxyphos	7700-17-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyanofenphos	13067-93-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyanophos	2636-26-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyfluthrin	68359-37-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyhalothrin, lambda- (includes Cyhalothrin, gamma	91465-08-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cypermethrin	52315-07-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Cyphenothrine	39515-40-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Cyproconazole	94361-06-5	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
DDD, o,p-	53-19-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
DDE, o,p-	3424-82-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
DDT (sum p,p'-DDT+o,p'-DDT+p,p'-DDE+p,p		mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Deltamethrin	52918-63-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dialifos	10311-84-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diallate	2303-16-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diazinon	333-41-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dibrombenzophenon, p,p-	3988-03-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dicapthon	2463-84-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dichlobenil	1194-65-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Dichlofenthion	97-17-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dichlofluanid	1085-98-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dichloran	99-30-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dichlorvos	62-73-7	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Diclofop-methyl	51338-27-3	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Dicofol (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Dicofol, o,p-	10606-46-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dicofol, p,p-	115-32-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Dicrotophos	141-66-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Diieldrin	60-57-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Difenoconazole	119446-68-3	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Diflufenican	83164-33-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dimethachlor	50563-36-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dimethipin	55290-64-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dimethoate	60-51-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Dimethomorph	110488-70-5	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Diniconazole	83657-24-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dinitramine	29091-05-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Dinobuton	973-21-7	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Disulfoton	298-04-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Disulfoton-sulfon	2497-06-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Ditalimfos	5131-24-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Edifenphos	17109-49-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Endosulfan (total)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Endosulfan alpha	959-98-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endosulfan sulfate	1031-07-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endosulfan, beta-	33213-65-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endrin	72-20-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Endrin ketone	53494-70-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
EPN	2104-64-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Epoxiconazole	133855-98-8	mg / kg	0,040	0,00	MS [GC-MS] // LA-GC-00
Etaconazole	60207-93-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Ethalfuralin	55283-68-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Ethion	563-12-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Ethofumesate	26225-79-6	mg / kg	0,200	0,00	MS [GC-MS] // LA-GC-00
Ethoprophos	13194-48-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Etridiazole	2593-15-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Etrimfos	38260-54-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Famophos	52-85-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Famoxadone	131807-57-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fenamidone	161326-34-7	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Fenamiphos	22224-92-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Fenarimol	60168-88-9	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenbuconazole	114369-43-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fenchlorazole-ethyl	103112-35-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fenchlorphos	299-84-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenhexamid	126833-17-8	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fenitrothion	122-14-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenoxaprop-ethyl	66441-23-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenpiclonil	74738-17-3	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fenpropathrin	39515-41-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenpropimorph	67564-91-4	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fenson	80-38-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fensulfothion	115-90-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (all isomers including Esfenvalerate)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (RR-/SS-Isomers)		mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fenvalerate (RS-/SR-Isomers)		mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fipronil	120068-37-3	mg / kg	0,004	0,00	MS [GC-MS] // LA-GC-00
Fipronil, desulfinyl-	111246-15-2	mg / kg	0,004	0,00	MS [GC-MS] // LA-GC-00
Fipronil+Sulfonmetab. MB46136 (Sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Fipronil-sulfide	120067-83-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fipronil-sulfone	120068-36-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Flamprop-isopropyl	52756-22-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flamprop-methyl	52756-25-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flonicamid	158062-67-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fluazifop-butyl	69806-50-4	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Fluchloralin	33245-39-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Flucythrinate	70124-77-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flufenoxuron	101463-69-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flumetralin	62924-70-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fluopicolid	239110-15-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fluorodifen	15457-05-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Fluotrimazole	31251-03-3	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fluquinconazole	136426-54-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flurenol-butyl	2314-09-2	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Flurochloridone	61213-25-0	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Flurtamone	96525-23-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Flusilazole	85509-19-9	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Fluvalinate (sum of isomers)	69409-94-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Folpet	133-07-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Fonofos	944-22-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Formothion	2540-82-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Genite	97-16-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Halfenprox	111872-58-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Haloxifop-Ethoxyethyl	87237-48-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Haloxifop-methyl	69806-40-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
HCH, alpha-	319-84-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, beta-	319-85-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, delta-	319-86-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
HCH, epsilon-	6108-10-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
HCH, gamma - Lindane	58-89-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor	76-44-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Heptachlor epoxide, cis-	1024-57-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptachlor epoxide, trans-	28044-83-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Heptenophos	23560-59-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Hexachlorobenzene (HCB)	118-74-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Hexaconazole	79983-71-4	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
INDANOFAN	133220-30-1	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Indoxacarb (sum, R+S isomers)	144171-61-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Iodofenphos	18181-70-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Ioxynil-Octanoat	3861-47-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Iprobenfos	26087-47-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Iprodione	36734-19-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isazofos	42509-80-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isobenzan	297-78-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isocarbofos	24353-61-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isodrin	465-73-6	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isofenphos	25311-71-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isofenphos-Methyl	99675-03-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isomethiozin	57052-04-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Isopropalin	33820-53-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Isoxadifen-ethyl	163520-33-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Kresoxim-methyl	143390-89-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Lactofen	77501-63-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Leptophos	21609-90-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Lufenuron	103055-07-8	mg / kg	0,012	0,00	MS [GC-MS] // LA-GC-00
Malaoxon	1634-78-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Malathion	121-75-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Malathion/Malaoxon (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Mecarbam	2595-54-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mephosfolan	950-10-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Merphos	150-50-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Metazachlor	67129-08-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Methacrifos	62610-77-9	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Methidathion	950-37-8	mg / kg	0,012	0,00	MS [GC-MS] // LA-GC-00
Methoxychlor	72-43-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Metolachlor	51218-45-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Metrafenone	220899-03-6	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Metribuzin	21087-64-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mevinphos	7786-34-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Mirex	2385-85-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Molinate	2212-67-1	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Myclobutanil	88671-89-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Nitralin	4726-14-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Nitrapyrin	1929-82-4	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Nitrofen	1836-75-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Nitrothal-isopropyl	10552-74-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Norflurazon	27314-13-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Nuarimol	63284-71-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Omethoate	1113-02-6	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Oxadiazon	19666-30-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Oxydemeton-methyl	301-12-2	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Oxyfluorfen	42874-03-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Paclobutrazol	76738-62-0	mg / kg	0,040	0,00	MS [GC-MS] // LA-GC-00
Paraoxon-ethyl	311-45-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Paraoxon-methyl	950-35-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Parathion-ethyl	56-38-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Parathion-methyl	298-00-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Parathion-methyl/Paraoxon-methyl (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Penconazole (sum of constituent isomers)	66246-88-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pendimethalin	40487-42-1	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloranisole	1825-21-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloroaniline	527-20-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pentachlorobenzene	608-93-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pentachloroethoxyanisole	1825-19-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Permethrin	52645-53-1	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Perthane	72-56-0	mg / kg	0,200	0,00	MS [GC-MS] // LA-GC-00
Phenkapton	2275-14-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phenothrin	26002-80-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phenthoate	2597-03-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosalone	2310-17-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosfolan	947-02-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Phosmet	732-11-6	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Picolinafen	137641-05-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Picoxystrobin	117428-22-5	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Piperophos	24151-93-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pirimiphos-ethyl	23505-41-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pirimiphos-methyl	29232-93-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Plifenate	21757-82-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Prallethrin	23031-36-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Procymidone	32809-16-8	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
Profenofos	41198-08-7	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Profluralin	26399-36-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Propachlor	1918-16-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Propanil	709-98-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Propazin	139-40-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Propetamphos	31218-83-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Propiconazole (sum of isomers)	60207-90-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Propyzamid	23950-58-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Prothiofos	34643-46-4	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Prothoate	2275-18-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyraclufos	89784-60-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyraflufen-ethyl	129630-19-9	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pyrazophos	13457-18-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyrethrins	8003-34-7	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Pyridaben	96489-71-3	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Pyridaphenthion	119-12-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Pyrifenoxy	88283-41-4	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Quinalphos	13593-03-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Quinoxifen	124495-18-7	mg / kg	0,015	0,00	MS [GC-MS] // LA-GC-00
Quintozene	82-68-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Quintozene (sum)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00
Quizalofop ethyl	76578-14-8	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Resmethrin	10453-86-8	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
S 421	127-90-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Spiromesifen	283594-90-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Sulfotep	3689-24-5	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Sulprofos	35400-43-2	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Swep	1918-18-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tebupirimfos	96182-53-5	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tecnazene	117-18-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tefluthrin	79538-32-2	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Temephos	3383-96-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Terbufos	13071-79-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetrachlorvinphos	22248-79-9	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetraconazole	112281-77-3	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Tetradifon	116-29-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tetramethrin	7696-12-0	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tetrasul	2227-13-6	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tolclofos-methyl	57018-04-9	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Tolylfluanid	731-27-1	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Transfluthrin	118712-89-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triadimefon	43121-43-3	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triadimenol	55219-65-3	mg / kg	0,100	0,00	MS [GC-MS] // LA-GC-00
Triallate	2303-17-5	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Triamiphos	1031-47-6	mg / kg	0,025	0,00	MS [GC-MS] // LA-GC-00
Triazophos	24017-47-8	mg / kg	0,020	0,00	MS [GC-MS] // LA-GC-00
Tribufos	78-48-8	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLA0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Trichloronat	327-98-0	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Tridiphane	58138-08-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Trifloxystrobin	141517-21-7	mg / kg	0,010	0,00	MS [GC-MS] // LA-GC-00
Trifluralin	1582-09-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
Vamidothion	2275-23-2	mg / kg	0,050	0,00	MS [GC-MS] // LA-GC-00
Vinclozolin	50471-44-8	mg / kg	0,005	0,00	MS [GC-MS] // LA-GC-00
! Pesticides screened (other)		mg / kg	-	0,00	MS [GC-MS] // LA-GC-00

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
! Pesticides screened (all)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
2,4'-Formoxylidid	60397-77-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
3-Hydroxycarbofuran	16655-82-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
6-CHLOR-3-PHENYLPYRIDAZIN-4-OL (Pyridat	40020-01-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Abamectin	71751-41-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Acephate	30560-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Acetamiprid	135410-20-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Acetochlor	34256-82-1	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC
Alachlor	15972-60-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aldicarb	116-06-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Aldicarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Aldicarb-sulfone	1646-88-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aldicarb-sulfoxide	1646-87-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Ametoctradin	865318-97-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Ametryn	834-12-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Amidosulfuron	120923-37-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aminocarb	2032-59-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Amitraz (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Amitraze	33089-61-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Ancymidol	12771-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Atrazin	1912-24-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Atrazin, desethyl-	6190-65-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Azaconazole	60207-31-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Azamethiphos	35575-96-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Aziprotryn	4658-28-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Azoxystrobin	131860-33-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benalaxyl	71626-11-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bendiocarb	22781-23-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benfuracarb	82560-54-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benodanil	15310-01-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benomyl	17804-35-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Bensulfuron methyl	83055-99-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Benthiavalicarb, isopropyl-	177406-68-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Bitertanol	55179-31-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Boscalid	188425-85-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Bromacil	314-40-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bromuconazole (Sum)		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Bupirimate	41483-43-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC
Buprofezin	69327-76-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Butachlor	23184-66-9	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim	34681-10-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LC
Butocarboxim-sulfoxide	34681-24-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Butoxycarboxim	34681-23-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Buturon	3766-60-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cadusafos	95465-99-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Carbaryl	63-25-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbendazim	10605-21-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbendazim/Benomyl (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Carbofuran	1563-66-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carbofuran (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Carbosulfan	55285-14-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Carboxin	5234-68-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
CHLORANTRANILIPROLE	500008-45-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorbromuron	13360-45-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chlorfluazuron	71422-67-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chloridazone	1698-60-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chlorotoluron	15545-48-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Chloroxuron	1982-47-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Chlorpropham	101-21-3	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Chlorsulfuron	64902-72-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cinidon-ethyl	142891-20-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cinosulfuron	94593-91-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clethodim	99129-21-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clodinafop-propargyl	105512-06-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Clofentezine	74115-24-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clomazone	81777-89-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Clothianidin	210880-92-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyanazine	21725-46-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyazofamid	120116-88-3	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Cymoxanil	57966-95-7	mg / kg	0,100	0,00	S [LC-MS/MS] // LA-LCN
Cyproconazole	94361-06-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Cyprodinil	121552-61-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Cyprofuram	69581-33-5	mg / kg	0,030	0,00	S [LC-MS/MS] // LA-LCN
Cyromazine	66215-27-8	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Demeton	8065-48-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Demeton-S-methyl	919-86-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Demeton-S-methyl-sulfone	17040-19-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Desmedipham	13684-56-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Desmetryn	1014-69-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diazinon	333-41-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dichlorvos	62-73-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diclobutrazol	75736-33-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diethofencarb	87130-20-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Diethyltoluamide	134-62-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Difenoconazole	119446-68-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Difenoxuron	14214-32-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diflubenzuron	35367-38-5	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Diflufenican	83164-33-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimefox	115-26-4	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Dimefuron	34205-21-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimethenamid including sum of isomers	87674-68-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimethoate	60-51-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimethomorph	110488-70-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Dimetilan	644-64-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dimoxystrobin	149961-52-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Dinotefuran	165252-70-0	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton	298-04-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton-sulfon	2497-06-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Disulfoton-sulfoxide	2497-07-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Diuron	330-54-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Emamectin (Sum)		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Epoxiconazole	133855-98-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb	29973-13-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb-sulfone	53380-23-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiofencarb-sulfoxide	53380-22-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethiprole	181587-01-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethofenprox	80844-07-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesat (Sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesat-2-keto		mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Ethofumesate	26225-79-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Ethoprophos	13194-48-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Etoxazole	153233-91-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Famoxadone	131807-57-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamidone	161326-34-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos	22224-92-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos-sulfone	31972-44-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenamiphos-sulfoxide	31972-43-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenarimol	60168-88-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenazaquin	120928-09-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenbuconazole	114369-43-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenhexamid	126833-17-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenobucarb	3766-81-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenoxaprop-ethyl	66441-23-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenoxycarb	72490-01-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenpiclonil	74738-17-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenpropidin	67306-00-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Fenpropimorph	67564-91-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fenpyroximate	134098-61-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion	115-90-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-oxon-sulfone	6132-17-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-oxon-sulfoxide	6552-21-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fensulfothion-sulfone	14255-72-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion	55-38-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon	6552-12-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon-sulfone	14086-35-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-oxon-sulfoxide	6552-13-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-sulfone	3761-42-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenthion-sulfoxide	3761-41-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fenuron	101-42-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flazasulfuron	104040-78-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flonicamid	158062-67-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Florasulam	145701-23-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fluazifop-P-butyl	79241-46-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fluazuron	86811-58-7	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LCN
Flucycloxuron	113036-88-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Fludioxonil	131341-86-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flufenacet	142459-58-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flufenoxuron	101463-69-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fluometuron	2164-17-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flupicolid	239110-15-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flurochloridone	61213-25-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flurprimidol	56425-91-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Flusilazole	85509-19-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Flutriafol	76674-21-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
FM-6-1		mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Formetanate	22259-30-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fosthiazate	98886-44-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Fuberidazole	3878-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Furathiocarb	65907-30-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Halofenozide	112226-61-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Haloxifop-Ethoxyethyl	87237-48-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Haloxifop-methyl	69806-40-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Hexaconazole	79983-71-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexaflumuron	86479-06-3	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Hexazinone	51235-04-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Hexythiazox	78587-05-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Imazalil (any ratio of constituent isomers)	35554-44-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Imibenconazol	86598-92-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Imidacloprid	138261-41-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Indoxacarb (sum, R+S isomers)	144171-61-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Iodosulfuron methyl	185119-76-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Iprovalicarb	140923-17-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoprocab	2631-40-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoprothiolane	50512-35-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoproturon	34123-59-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoxaben	82558-50-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Isoxaflutole	141112-29-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Isoxathion	18854-01-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Lenacil	2164-08-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Linuron	330-55-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Lufenuron	103055-07-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malaoxon	1634-78-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malathion	121-75-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Malathion/Malaoxon (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Mandipropamid	374726-62-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Mepanipyrim	110235-47-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metalaxyl	57837-19-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metamitron	41394-05-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metazachlor	67129-08-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metconazole	125116-23-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methabenzthiazuron	18691-97-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methacrifos	62610-77-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methamidophos	10265-92-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methidathion	950-37-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb	2032-65-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb-sulfone	2179-25-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methiocarb-sulfoxide	2635-10-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Methomyl	16752-77-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methoprotrene	841-06-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Methoxyfenozid	161050-58-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metobromuron	3060-89-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metolachlor	51218-45-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metolcarb	1129-41-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metoxuron	19937-59-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metrafenone	220899-03-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metribuzin	21087-64-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Metsulfuron-methyl	74223-64-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Molinate	2212-67-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Monocrotophos	6923-22-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Monolinuron	1746-81-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Monuron	150-68-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
N-2,4-dimethylphenyl-N-methylformamidin	33089-74-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Napropamide	15299-99-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Neburon	555-37-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Nicosulfuron	111991-09-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Novaluron	116714-46-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Nuarimol	63284-71-9	mg / kg	0,025	0,00	S [LC-MS/MS] // LA-LCN
Ofurace	58810-48-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Omethoate	1113-02-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Orbencarb	34622-58-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxadixyl	77732-09-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxamyl	23135-22-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxamyl-oxime	30558-43-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Oxydemeton-methyl	301-12-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Oxydemeton-methyl (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Paclobutrazol	76738-62-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Paraoxon-ethyl	311-45-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Paraoxon-methyl	950-35-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Penconazole (sum of constituent isomers)	66246-88-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pencycuron	66063-05-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pendimethalin	40487-42-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pentachlor	2307-68-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phenmedipham	13684-63-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Phorate	298-02-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phorate (sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Phorate-sulfone	2588-04-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phorate-sulfoxide	2588-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phosmet	732-11-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phosphamidon	13171-21-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Phoxim	14816-18-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Picoxystrobin	117428-22-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Piperonyl butoxide	51-03-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb	23103-98-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb, desmethyl-	30614-22-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Pirimicarb, desmethyl-formamido-	27218-04-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Primisulfuron-methyl	86209-51-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prochloraz	67747-09-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Promecarb	2631-37-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prometon	1610-18-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Prometryn	7287-19-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Propamocarb (sum)	24579-73-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Propargite	2312-35-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Propazin	139-40-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Propham	122-42-9	mg / kg	0,030	0,00	S [LC-MS/MS] // LA-LC [†]
Propiconazole (sum of isomers)	60207-90-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Propoxur	114-26-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Propoxycarbazone	145026-81-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Proquinazid	189278-12-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Prosulfocarb	52888-80-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Prosulfuron	94125-34-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pymetrozine	123312-89-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyraclostrobin	175013-18-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyraflufen-ethyl	129630-19-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrethrins	8003-34-7	mg / kg	0,500	0,00	S [LC-MS/MS] // LA-LC [†]
Pyridate	55512-33-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrimethanil	53112-28-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Pyrimidifen	105779-78-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Pyriproxyfen	95737-68-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Quizalofop ethyl	76578-14-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Rabenzazole	40341-04-6	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Rimsulfuron	122931-48-0	mg / kg	0,020	0,00	S [LC-MS/MS] // LA-LC [†]
Rotenone	83-79-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Sebuthylazine	7286-69-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Sethoxydim	74051-80-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Silafluofen	105024-66-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LC [†]
Simazine	122-34-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Simazine, desethyl-	1007-28-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Simeconazole	149508-90-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Spinosad (Summe)	168316-95-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Spirodiclofen	148477-71-8	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spiromesifen	283594-90-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spirotetramat	203313-25-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Spiroxamine	118134-30-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tebuconazol	107534-96-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tebufenozide	112410-23-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tebufenpyrad	119168-77-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Teflubenzuron	83121-18-0	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LC [†]
TEPP	107-49-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbacil	5902-51-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos	13071-79-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos-sulfon	56070-16-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbufos-sulfoxide	10548-10-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbutylazine	5915-41-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]
Terbutylazine, desethyl-	30125-63-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Terbutryn	886-50-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LC [†]
Tetraconazole	112281-77-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LC [†]

Scope of screened pesticides: SFLD0

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Thiabendazole	148-79-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiabendazole, 5-hydroxy-	948-71-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiacloprid	111988-49-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiamethoxam	153719-23-4	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiazafurion	25366-23-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thifensulfuron methyl	79277-27-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiodicarb	59669-26-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox	39196-18-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox-sulfone	39184-59-3	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiofanox-sulfoxide	39184-27-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiometon	640-15-3	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Thionazin	297-97-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Thiophanate (-ethyl)	23564-06-9	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Thiophanate-methyl	23564-05-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tiocarbazil	36756-79-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triadimefon	43121-43-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triadimenol	55219-65-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triamiphos	1031-47-6	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triasulfuron	82097-50-5	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triazamate	112143-82-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triazophos	24017-47-8	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Tribenuronmethyl	101200-48-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trichlorfon	52-68-6	mg / kg	0,050	0,00	S [LC-MS/MS] // LA-LCN
Tricyclazol	41814-78-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Tridemorph	81412-43-3	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trietazine	1912-26-1	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trifloxystrobin	141517-21-7	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trifloxysulfuron	145099-21-4	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflumizol/FM-6-1 (Sum)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN
Triflumizole	99387-89-0	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triflumuron	64628-44-0	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triflusulfuronmethyl	126535-15-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Triforine	26644-46-2	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Trimethacarb, 3,4,5-	2686-99-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Triticonazole	131983-72-7	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Uniconazole	83657-22-1	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion	2275-23-2	mg / kg	0,005	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion-sulfone	70898-34-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Vamidothion-sulfoxide	20300-00-9	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
Zoxamid	156052-68-5	mg / kg	0,010	0,00	S [LC-MS/MS] // LA-LCN
! Pesticides screened (other)		mg / kg	-	0,00	S [LC-MS/MS] // LA-LCN

Scope of screened pesticides: SPGG4

Parameter	Chemical Abstract Service	Unit	LOQ - Limit of Quantification	MLOQ - Method Limit of Quantification	Method
Aminomethylphosphonic acid (AMPA)	1066-51-9	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158
Glufosinate	51276-47-2	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158
Glyphosate	1071-83-6	mg / kg	0,010	0,00	LC-MS/MS // SPG-14.158

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2. The test results shall not be reproduced except in full without the written permission of Eurofins Polska Sp. z o.o.
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REPORT OF ANALYSIS No. 438844/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ	Sample description (according to declaration of Client) R-15#59 protein isolate
Sample received: 2021-07-29	Sample without any visible damages
Analysis completed (the date of performance of the laboratory activity): 2021-08-11	Order of 2021-07-28 The samples were delivered by Client
Report dated: 2021-08-11	

Test	Method	Unit	Result
Sulphur dioxide	PN-EN 1988-1:2001	mg/kg	< 10
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	1,4x10 ³ [8,7x10 ² ;2,3x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	< 1,0x10 ¹
Enumeration of yeast		cfu/g	< 1,0x10 ¹
* The most probable number of Coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Escherichia coli in 10g	PN-ISO 7251:2006		not detected in 10 g
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g
* Benzoic acid and sorbic acid	PN-EN 12856:2002		
Benzoic acid and its salts expressed as benzoic acid		mg/kg	< 10
Sorbic acid and its salts expressed as sorbic acid		mg/kg	< 10
# * Solvent residue	HH-MA-M 03-011, Headspace, GC-FID: 2019-01		
Ethanol		mg/kg	517 ± 155
Ethyl acetate		mg/kg	154 ± 46

Test: Solvent residue was performed by external provider with an accreditation number D-PL-14170-01-00

THE END OF THE REPORT

Authorized by: Agnieszka Duda, Expert Analyst, Microbiology Laboratory Gdynia
 Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
 Beata Zajkowska, Specialist Analyst, Laboratory Cooperation Section
 Żaneta Nowińska-Słowik, Expert Analyst, Liquid Chromatography Laboratory
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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ul Balonna 1, 08-530 Dęblin, Poland
Tel.: +48 81 4400700, Fax: Tel.: +48 81 4400701
deblin@agrolab.pl www.agrolab.pl

Napiferyn Biotech Sp. z o.o.
Dubois 114/116
93-465 Łódź

Date 25.08.2021
Customer no. 105823

REPORT 355169 - 529585

Order 355169
Sample no. 529585
Project 1058 zlecenie
Sample acceptance 29.07.2021
Date of sampling No information.
Sample taker Client
Customer sample description R-15#59 (protein isolate)
Sample condition No objections
Packaging Plastic bottle, closed
Acceptance temperature [°C] +15

Unit Result Declaration Method

Physicochemical tests

Trypsin inhibitor ^{v)}	mg/g	2,5+/-0,3				Spectrophotometric method PN-EN ISO 14902:2005(LP)

Parameter-specific analytical measurement uncertainties and information regarding the method of calculation will be provided upon request if the reported results are above the parameter-specific limit of quantification.

v) external service

Externally provided service by

(LP) Krajowe Laboratorium Pasz, ul. Chmielna 2, 20-079 Lublin, accredited for the cited method according to PN-EN ISO/IEC 17025:2018-02, Accreditation number: AB 856

Methods

Spectrophotometric method PN-EN ISO 14902:2005

Start of testing: 29/07/2021

End of testing: 25/08/2021

The results are related only to the samples tested. In cases where the laboratory has not been responsible for sampling, the reported results apply to the samples as received. Duplication of this document or of parts of it requires the authorization from laboratory.

NIP 118-07-45-971
REGON 012270240
KRS 0000006477

Prezes: Paul Wimmer,
Członek Zarządu: Wiebke Puschmann

Sąd Rejonowy Lublin-Wschód z/s w Świdniku
VI Wydział Gospodarczy KRS

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deblin@agrolab.pl www.agrolab.pl

Date 25.08.2021
Customer no. 105823

REPORT 355169 - 529585



Compiled: AGROLAB Polska mgr inż. Aleksandra Zugaj, Tel. +48/81 4400705
Customer service

Authorized:
mgr Katarzyna Wiśniewska, Kierownik Pracowni Analiz Instrumentalnych

The activities reported in this document are accredited according to PN-EN ISO/IEC 17025:2018-02. Only not accredited activities are identified by the symbol " *) " .

CERTIFICATE OF ANALYSIS

Report date	01.10.2021
Sample number	R-15#59
Sample name	Raptein [™] 90 (rapeseed protein isolate)

Parameters	Method	Unit	Result
Total phenolics expressed as sinapic acid	Internal: IWA No. 2.5.4 version 001 from 30/04/2019; HPLC-UV	% DM	0,002 ± 0,000

THE END OF THE REPORT

Authorized by:

Analytical Specialist



(signature)

Approved by:

Analysis and Application Development
Manager



(signature)

**GRAS NOTICE OF
CANOLA PROTEIN (RAPESEED PROTEIN)**

Appendix 2

Reports of analysis from stability studies

REPORT OF ANALYSIS No. 302702/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=0	
Sample received:	2021-05-29	Date of analysis: 29.05.2021	
Analysis completed (the date of performance of the laboratory activity):	2021-06-09	Sample without any visible damages	
Report dated:	2021-06-09	Order of 2021-05-24	
		The samples were delivered by Client	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% d.m.	>99,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	4,9 ± 0,3
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	<1,0x10 ¹
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Escherichia coli in 10g	PN-ISO 7251:2006		not detected in 10 g
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Agnieszka Duda, Expert Analyst, Microbiology Laboratory Gdynia
Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
Joanna Śpiewak, Senior Specialist Analyst, Classical Analysis Laboratory
Approved by: Hanna Wachowska, Laboratory Director (*Approved with electronic signature*)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

The results relate to the analysed samples only. Unless otherwise specified given expanded measurement uncertainty was estimated for the coverage factor k=2 at 95% confidence level. Sampling uncertainty has not been taken into consideration. Unless otherwise specified when conformity is stated J.S. Hamilton Poland Sp. z o.o. applies the simple acceptance decision rule in accordance with ILAC-G8:09/2019. This Report cannot be reproduced partially without a prior written consent of J.S. Hamilton Poland Sp. z o.o. Responsibility of J.S. Hamilton Poland Sp. z o.o. is restricted exclusively to the results and statements presented in original copy of the Report. The service confirmed by this Report is subject to the General Terms and Conditions of Services of J.S. Hamilton Poland Sp. z o.o. published on www.hamilton.com.pl

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REPORT OF ANALYSIS No. 302692/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=1, storage in 25 Celsius, humidity 60%
Sample received:	2021-05-29	Date of analysis: 04.06.2021 Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Analysis completed (the date of performance of the laboratory activity):	2021-06-10	
Report dated:	2021-06-10	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% d.m.	>99,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	4,5 ± 0,3
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	8,6x10 ³ [5,3x10 ³ ;1,4x10 ⁴]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Agnieszka Duda, Expert Analyst, Microbiology Laboratory Gdynia
 Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwasczyńska 180

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REPORT OF ANALYSIS No. 302625/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=1, storage in 40 Celsius, humidity 75%	
Sample received:	2021-05-29	Date of analysis: 04.06.2021	
Analysis completed (the date of performance of the laboratory activity):	2021-06-10	Sample without any visible damages	
Report dated:	2021-06-10	Order of 2021-05-24 Próbki dostarczone przez Zleceniodawcę	

Rodzaj badania	Metoda	Jednostka	Wynik
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% d.m.	>99,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	5,1 ± 0,4
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	7,3x10 ³ [4,5x10 ³ ;1,2x10 ⁴]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

KONIEC SPRAWOZDANIA

Autoryzował: Agnieszka Duda, Expert Analyst, Microbiology Laboratory Gdynia
Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
Zatwierdził: Hanna Wachowska, Laboratory Director (Zatwierdzone podpisem elektronicznym)

Adres laboratorium: Gdynia 81-571, Chwaszczyńska 180

Wyniki odnoszą się wyłącznie do badanych próbek. Jeśli nie określono inaczej podana rozszerzona niepewność pomiaru została oszacowana dla współczynnika rozszerzenia k=2 i poziomu ufności 95%. Nie uwzględniono niepewności pobierania próbek. Jeśli nie określono inaczej podczas stwierdzania zgodności J.S. Hamilton Poland Sp. z o.o. stosuje zasadę prostej akceptacji według wytycznych ILAC-G8:09/2019. Niniejsze sprawozdanie nie może być powielane w części bez pisemnej zgody J.S. Hamilton Poland Sp. z o.o. Odpowiedzialność J.S. Hamilton Poland Sp. z o.o. jest ograniczona wyłącznie do danych zawartych w jego oryginale. Usługa potwierdzona niniejszym sprawozdaniem podlega Ogólnym Warunkom Świadczenia Usług J.S. Hamilton Poland Sp. z o.o. zamieszczonym na stronie www.hamilton.com.pl

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REPORT OF ANALYSIS No. 302693/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=2, storage in 25 Celsius, humidity 60%	
Sample received:	2021-05-29	Date of analysis: 11.06.2021	
Analysis completed (the date of performance of the laboratory activity):	2021-06-17	Sample without any visible damages	
Report dated:	2021-06-17	Order of 2021-05-24	
		The samples were delivered by Client	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% d.m.	>99,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	4,6 ± 0,3
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	<1,0x10 ¹
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia
Approved by: Hanna Wachowska, Laboratory Director (*Approved with electronic signature*)

Laboratory: Gdynia 81-571, Chwasczyńska 180

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REPORT OF ANALYSIS No. 302626/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=2, storage in 40 Celsius, humidity 75%
Sample received:	2021-05-29	Date of analysis: 11.06.2021
Analysis completed (the date of performance of the laboratory activity):	2021-06-17	Sample without any visible damages
Report dated:	2021-06-17	Order of 2021-05-24 The samples were delivered by Client

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% s.m.	>99,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	5,3 ± 0,4
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	4,9x10 ³ [3,1x10 ³ ;7,8x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia
Approved by: Hanna Wachowska, Laboratory Director (*Approved with electronic signature*)

Laboratory: Gdynia 81-571, Chwasczyńska 180

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REPORT OF ANALYSIS No. 302694/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=4 Date of analysis: 25.06.2021 Storage conditions: temp. 25°C, humidity 60% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-07-01	
Report dated:	2021-07-01	

Test	Method	Unit	Result
* Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% d.m.	>99,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	4,7 ± 0,3
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	5,2x10 ³ [3,3x10 ³ ;8,3x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia

Sandra Gumowska, Expert Analyst, Classical Analysis Laboratory

Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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REPORT OF ANALYSIS No. 302627/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=4, Date of analysis: 25.06.2021 Storage conditions: temp. 40°C, humidity 75% Sample without any visible damages	
Sample received:	2021-05-29	Order of 2021-05-24 The samples were delivered by Client	
Analysis completed (the date of performance of the laboratory activity):	2021-07-01		
Report dated:	2021-07-01		

Test	Method	Unit	Result
* Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% s.m.	94,4 ± 2,8
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	4,6 ± 0,3
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	4,2x10 ³ [2,6x10 ³ ;6,7x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia

Sandra Gumowska, Expert Analyst, Classical Analysis Laboratory

Approved by: Hanna Wachowska, Laboratory Director (*Approved with electronic signature*)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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REPORT OF ANALYSIS No. 302695/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=8 Date of analysis: 23.07.2021 Storage conditions: temp. 25°C, humidity 60% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-07-29	
Report dated:	2021-07-29	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% s.m.	97,9 ± 2,9
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	5,1 ± 0,4
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	4,3x10 ³ [2,7x10 ³ ;6,8x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
 Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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REPORT OF ANALYSIS No. 302628/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=8 Date of analysis: 23.07.2021 Storage conditions: temp. 40°C, humidity 75% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-07-29	
Report dated:	2021-07-29	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% s.m.	98,7 ± 3,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	6,1 ± 0,4
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	6,1x10 ³ [3,8x10 ³ ;9,7x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
 Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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REPORT OF ANALYSIS No. 302696/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=12, storage in 25 Celsius Date of analysis: 20.08.2021 Storage conditions: temp. 25°C, humidity 60% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-08-26	
Report dated:	2021-08-26	

Test	Method	Unit	Result
* Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% s.m.	96,9 ± 2,9
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	5,9 ± 0,4
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	5,9x10 ³ [3,7x10 ³ ;9,4x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
 Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwasczyńska 180

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REPORT OF ANALYSIS No. 302629/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=12, storage in 40 Celsius Date of analysis: 20.08.2021 Storage conditions: temp. 40°C, humidity 75% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-08-26	
Report dated:	2021-08-26	

Test	Method	Unit	Result
* Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% s.m.	96,4 ± 2,9
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	7,0 ± 0,5
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	5,1x10 ³ [3,2x10 ³ ;8,1x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		not detected in 25 g

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
 Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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REPORT OF ANALYSIS No. 302697/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=16, storage in 25 Celsius Date of analysis: 17.09.2021 Storage conditions: temp. 25st.C, humidity 60% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-09-23	
Report dated:	2021-09-23	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% d.m.	>99,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	6,2 ± 0,4
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	1,1x10 ⁴ [6,9x10 ³ ;1,7x10 ⁴]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		Not detected in 25 g

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
 Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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REPORT OF ANALYSIS No. 302630/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=16, storage in 40 Celsius Date of analysis: 17.09.2021 Storage conditions: temp. 40st.C, humidity 75% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-09-23	
Report dated:	2021-09-23	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% d.m.	>99,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	7,4 ± 0,5
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	9,3x10 ³ [5,9x10 ³ ;1,5x10 ⁴]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		Not detected in 25 g

THE END OF THE REPORT

Authorized by: Alicja Nowak, Senior Specialist Analyst, Classical Analysis Laboratory
 Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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REPORT OF ANALYSIS No. 302698/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=20, storage in 25 Celsius Date of analysis: 15.10.2021 Storage conditions: temp. 25°C, humidity 60% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-10-21	
Report dated:	2021-10-21	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% s.m.	99,6 ± 3,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	6,7 ± 0,5
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	1,3x10 ⁴ [7,1x10 ³ ;2,4x10 ⁴]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		Not detected in 25 g

THE END OF THE REPORT

Authorized by: Agnieszka Duda, Expert Analyst, Microbiology Laboratory Gdynia
 Joanna Śpiewak, Expert Analyst, Classical Analysis Laboratory
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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REPORT OF ANALYSIS No. 302631/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=20, storage in 40 Celsius Date of analysis: 15.10.2021 Storage conditions: temp. 40°C, humidity 75% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-10-21	
Report dated:	2021-10-21	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% s.m.	99,4 ± 3,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	7,8 ± 0,5
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	1,1x10 ⁴ [5,9x10 ³ ;2,1x10 ⁴]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		Not detected in 25 g

THE END OF THE REPORT

Authorized by: Agnieszka Duda, Expert Analyst, Microbiology Laboratory Gdynia
 Joanna Śpiewak, Expert Analyst, Classical Analysis Laboratory
 Approved by: Hanna Wachowska, Laboratory Director (*Approved with electronic signature*)

Laboratory: Gdynia 81-571, Chwaszczyńska 180

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REPORT OF ANALYSIS No. 302699/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=24, storage in 25 Celsius Date of analysis: 12.11.2021 Storage conditions: temp. 25°C, humidity 60% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-11-18	
Report dated:	2021-11-18	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% d.m.	98,5 ± 3,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	6,1 ± 0,4
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	5,3x10 ³ [3,3x10 ³ ;8,4x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		Not detected in 25 g

THE END OF THE REPORT

Authorized by: Joanna Śpiewak, Expert Analyst, Classical Analysis Laboratory
 Renata Żywicka, Senior Specialist Analyst, Microbiology Laboratory Gdynia
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwasczyńska 180

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REPORT OF ANALYSIS No. 302632/21/SGDY

Client NAPIFERYN BIOTECH SP. Z O.O. DUBOIS 114/116 93-465 ŁÓDŹ		Sample description (according to declaration of Client) R-08#57 protein isolate, point T=24, storage in 40 Celsius Date of analysis: 12.11.2021 Storage conditions: temp. 40°C, humidity 75% Sample without any visible damages Order of 2021-05-24 The samples were delivered by Client
Sample received:	2021-05-29	
Analysis completed (the date of performance of the laboratory activity):	2021-11-19	
Report dated:	2021-11-19	

Test	Method	Unit	Result
Protein (N*6,25) on dry matter	PB-116 ed. III of 11.08.2020	% d.m.	99,0 ± 3,0
* Moisture	PB-285 ed. I of 26.09.2014 p. 1	%	7,3 ± 0,5
* Enumeration of mesophilic aerobic bacteria	PN-EN ISO 4833-1:2013-12	cfu/g	1,5x10 ³ [8,3x10 ² ;2,7x10 ³]
* Enumeration of yeast and moulds	PN-ISO 21527-2:2009		
Enumeration of moulds		cfu/g	<1,0x10 ¹
Enumeration of yeast		cfu/g	<1,0x10 ¹
* The most probable number of coliforms	PN-ISO 4831:2007	MPN/g	0
* Detection of Salmonella spp.	PN-EN ISO 6579-1:2017-04		Not detected in 25 g

THE END OF THE REPORT

Authorized by: Agnieszka Duda, Expert Analyst, Microbiology Laboratory Gdynia
 Joanna Śpiewak, Expert Analyst, Classical Analysis Laboratory
 Katarzyna Duczek, Senior Specialist Analyst, Microbiology Laboratory Gdynia
 Approved by: Hanna Wachowska, Laboratory Director (Approved with electronic signature)

Laboratory: Gdynia 81-571, Chwasczyńska 180

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**GRAS NOTICE OF
CANOLA PROTEIN (RAPESEED PROTEIN)**

Appendix 3

Raptein™90 Estimated Daily Intake Report

RAPTEIN™90 ESTIMATED DAILY INTAKE REPORT

A. INTENDED EFFECT

Raptein™90 is intended to be added to select general foods and beverages as described in the table below.

Table 1. Raptein™90 Intended Uses and Use Levels	
Intended uses	Max. use level (g Raptein™90/100 g of food as consumed)
Bakery products (e.g. breads, rolls, pies etc.) and baking mixes	30
Breakfast cereals (e.g. oatmeal, grits, ready to eat breakfast cereal etc.)	60
Grain products, pastas (e.g., noodles, macaroni, etc.)	20
Bars (e.g. nutritional, protein etc.)	40
Protein and nutritional powders	100*
Beverages and beverage bases non-alcoholic (e.g. fruit and/or vegetable drinks, smoothies, energy drinks etc.)	15
Milk products and dairy analogs (e.g. cheeses, yoghurts, creams, frozen desserts etc.)	35
Coffee and tea (including instant coffee and tea)	10
Meat product analogs (e.g. sausages, burgers, chops etc.)	35
Fat, oils and salad dressings (e.g. mayonnaise-type dressings, margarine-like spreads etc.)	15
Egg substitutes (e.g. powdered egg analogs etc.) and egg products analogs	20
Soup and soup mixes	20
Sauces, gravies, condiments and dips	15
Nut products (e.g. nut spreads, nut butters etc.)	40
Snack foods (e.g. popcorn, chips etc.)	60
Fruit and water ices	20
Confections, candies and frostings (e.g. baking chocolates, marshmallows, non-chocolate candies etc.)	40
Sweet sauces, toppings, and syrups	15
Jams, jellies, gelatins, puddings, fillings (including mixes)	25
Processed fruits, vegetables, legumes (e.g. vegetable spreads)	30
Batter/breadings	10
Spice and seasoning mixes ^a	5
*As is basis (content for dry powder), proposed serving – 30 g (one serving a day)	
^a No NHANES data exists; calculated independently	

B. ESTIMATED DAILY INTAKE

1. Assessment of Raptein™90 Use

Food consumption data was provided by the National Center for Health Statistics' (NCHS) 2017-2018 National Health and Nutrition Examination Surveys (NHANES) (CDC, 2022; USDA, 2021). The Food and Nutrition Database for Dietary Studies (FNDDS) for the corresponding biennial NHANES survey food categories was used to identify 2174 food codes for Raptein™90 that represent the proposed food categories listed for both ingredients in Table 1. The identified food codes are described in the supplemental tables. Mean and 90th percentile estimated daily intakes (EDIs) of Raptein™90 from the intended uses were calculated using those food codes and maximum use levels described in Table 1.

2. Food Consumption Survey Data

a. Survey Description

The most recent National Health and Nutrition Examination Surveys (NHANES) for the years 2017-2018 are available for public use. NHANES are conducted as a continuous, annual survey, and are released in 2-year cycles. In each cycle, approximately 10,000 people across the U.S. completed the health examination component of the survey. Any combination of consecutive years of data collection is a nationally representative sample of the U.S. population. It is well established that the length of a dietary survey affects the estimated consumption of individual users and that short-term surveys, such as the typical 1-day dietary survey, overestimate consumption over longer time periods (Kruger et al., 2014). Because two 24-hour dietary recalls administered on 2 non-consecutive days (Day 1 and Day 2) are available from the NHANES 2017-2017 survey, these data were used to generate estimates for the current intake analysis.

The NHANES provide the most appropriate data for evaluating food-use and food-consumption patterns in the United States, containing 2 years of data on individuals selected via stratified multistage probability sample of civilian non-institutionalized population of the U.S. NHANES survey data were collected from individuals and households via 24-hour dietary recalls administered on 2 non-consecutive days (Day 1 and Day 2) throughout all 4 seasons of the year. Day 1 data were collected in-person in the Mobile Examination Center (MEC), and Day 2 data were collected by telephone in the following 3 to 10 days, on different days of the week, to achieve the desired degree of statistical independence. The data were collected by first selecting Primary Sampling Units (PSUs), which were counties throughout the U.S. Small counties were combined to attain a minimum population size. These PSUs were segmented and households were chosen within each segment. One or more participants within a household were interviewed. Fifteen PSUs are visited each year. For example, in the 2009-2010 NHANES, there were 13,272 persons selected; of these 10,253 were considered respondents to the MEC examination and data

collection. 9754 of the MEC respondents provided complete dietary intakes for Day 1 and of those providing the Day 1 data, 8,405 provided complete dietary intakes for Day 2. The release data do not necessarily include all the questions asked in a section. Data items may have been removed due to confidentiality, quality, or other considerations. For this reason, it is possible that a dataset does not completely match all the questions asked in a questionnaire section. Each data file has been edited to include only those sample persons eligible for that particular section or component, so the numbers vary.

In addition to collecting information on the types and quantities of foods being consumed, the NHANES surveys collect socioeconomic, physiological, and demographic information from individual participants in the survey, such as sex, age, height and weight, and other variables useful in characterizing consumption. The inclusion of this information allows for further assessment of food intake based on consumption by specific population groups of interest within the total population.

Sample weights are incorporated with NHANES surveys to compensate for the potential under-representation of intakes from specific population groups as a result of sample variability due to survey design, differential non-response rates, or other factors, such as deficiencies in the sampling frame (CDC, 2006; USDA, 2020).

b. Statistical Methods

Consumption data from individual dietary records, detailing food items ingested by each survey participant, were collated in Octave and used to generate estimates for the intake of Raptein™90 by the U.S. population. Estimates for the daily intake of Raptein™90 represent projected 2-day averages for each individual from Day 1 and Day 2 of NHANES data; these average amounts comprised the distribution from which mean and percentile intake estimates were produced. Mean and percentile estimates were generated incorporating sample weights in order to provide representative intakes for the entire U.S. population. “All-user” intake refers to the estimated intake of Raptein™90 by those individuals consuming food products containing Raptein™90. Individuals were considered users if they consumed 1 or more food products containing Raptein™90 on either Day 1 or Day 2 of the survey.

3. Food Survey Results

The estimated “all-user” total intakes of Raptein™90 from 2174 proposed food uses, as described in Table 1, in the U.S. by population group are summarized in Table 2.

In summary, 79.47% of the total U.S. population 2+ years of age were identified as consumers from the selected food uses in the 2017-2018 survey (Table 2). The mean intakes of Raptein™90 from consumers ages 2+ from the selected food uses were estimated to be 33.94 g

Raptein™90/person/day or 0.49 g Raptein™90/kg body weight/day. The heavy consumer (90th percentile) intakes were estimated to be 73.50 g Raptein™90/person/day or 1.06 g/kg body weight/day.

Table 2. Estimated “All-user” Daily Intake (EDI) of Raptein™90 in Targeted Foods by Population Group (2017-2018 NHANES Data)								
	N users	N population	% Users	Mean mass (kg)	Mean EDI (g)	90th % EDI (g)	Mean EDI (g/kg)	90th % EDI (g/kg)
ages 1-2	451	642	70.25	13.24	21.05	48.61	1.59	3.67
ages 3-5	365	529	69.00	21.08	24.41	53.05	1.16	2.52
ages 6-12	939	1258	74.64	41.89	29.98	56.87	0.72	1.36
ages 13-19	772	886	87.13	70.32	37.77	83.85	0.54	1.19
ages 20 and up	4621	5493	84.13	81.7	35.20	74.33	0.43	0.91
ages 2 and up	6697	8427	79.47	69.41	33.94	73.50	0.49	1.06

There are no food codes that can be used for stand-alone spice and seasoning mixes in NHANES. Accordingly, to calculate the estimated daily intakes of Raptein™90 from the use in spice and seasoning mix, surrogate products were used to estimate its intake level. A surrogate product called Bernard Jensen’s Protein Seasoning (<https://www.amazon.com/Bernard-Jensens-Protein-Seasoning-Veggies/dp/B07D VW5Z5C>) was cited by the Client as a product that could include Raptein™90 as an ingredient. The recommended serving is 1 g. SCG assumes that a daily intake would not exceed one serving. Other products can be used to corroborate the estimate of intake from spice and seasoning mixes. If Raptein™90 will be used to create a flavored salt, the daily sodium intake consumed by Americans can be used to conservatively estimate the intake of Raptein™90 from flavored salts. According to the 2013-2016 What We Eat In America (WWEIA) report through NHANES, the mean sodium intake of males and females ages 1+ is 3393 mg/day (USDA, 2020). Using the very conservative estimate that half the daily sodium intake (1697 mg) is provided by Raptein™90 salt (5% maximum use level), the estimated intake of Raptein™90 from salt would be 84.85 mg/day. Alternatively, if Raptein™90 is going to be used as a flavor enhancer like monosodium glutamate, FDA estimates typical intake of MSG to be < 0.5 g/day (<https://www.fda.gov/food/food-additives-petitions/questions-and-answers-monosodium-glutamate-msg>). Therefore, it is expected that 1 g would be a conservative daily intake.

The intakes of Raptein™90 for all food uses, including spices and seasonings at 1 g/day, are estimated to be the EDIs (calculated above) + 1 g. The resulting mean EDI for Raptein™90 of 34.94 g/person/day or 0.50 g/kg body weight/day and the heavy consumer (90th percentile) EDI of 74.50 g/person/day or 1.06 g/kg body weight/day.

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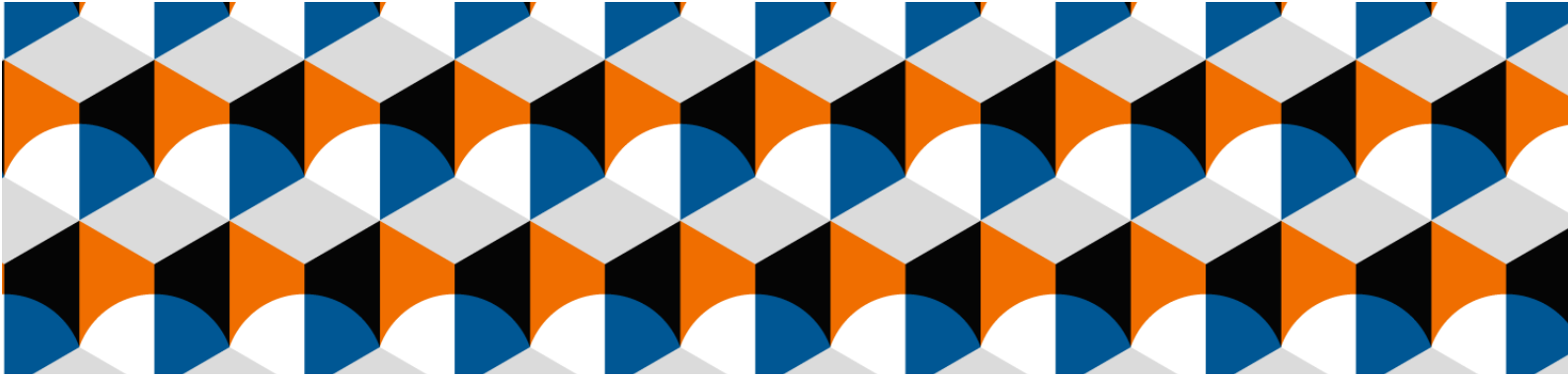
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**GRAS NOTICE OF
CANOLA PROTEIN (RAPESEED PROTEIN)**

Appendix 4

**Allergenicity analysis of rapeseed protein Raptein™90
for food safety evaluation**



Customer REPORT

VTT-CR-00677-21

Allergenicity analysis of rapeseed protein isolate Raptein™90 for food safety evaluation

Authors: Gopal Peddinti
Waltteri Hosia

Version: 3.9.2021

Report's title Allergenicity analysis of rapeseed protein isolate Raptein™90 for food safety evaluation	
Customer, contact person, address NapiFeryn BioTech, Magdalena Kozłowska (m.kozłowska@napiferyn.pl), NapiFeryn BioTech Sp. z o.o., ul. Dubois 114/116, 93-465 Łódź, Poland	Order reference VTT-174239-21
Project name Rapeseed product protein identification and allergenicity	Project number/Short name 131092 Rapeseed_Allergenicity
Summary The aim of this project was to identify proteins in the rapeseed protein isolate product Raptein™90 and perform bioinformatics search of the identified proteins in AllergenOnline database and Celiac Database for allergenicity evaluation. Potential risks of food allergy and celiac disease were evaluated based on full-length and sliding window 80-mer sequence identity matches (FASTA algorithm) to known allergens in FARRP allergenic protein database version 21 (AllergenOnline.org), exact peptide matches and full-length alignments with Celiac Database (CD) of AllergenOnline.org to known CD inducing glutes or gliadins. In addition, sequence homology searches with BLASTP were performed against NCBI non-redundant protein sequence database were performed to provide a functional annotation in terms of all homologous proteins, irrespective of the evidence of their allergenicity. Four cruciferins (11S globulins) and three napins (1.7S seed storage proteins) were found in the Raptein™90 samples. The sequence searches with FARRP allergen protein database version 21 provided several hits characterizing the possible allergenic effects of the proteins found in Raptein™90. The full-length FASTA search results should be interpreted with > 35 % as the minimum identity threshold to an allergenic protein to infer any indication of possible allergenic cross-reactivity, although typically a minimum of > 50 % sequence identity may be required for a reliable allergenic indication. Likewise, the sequence similarity found in 80-mer FASTA searches may need to be interpreted in combination with the full-length FASTA searches. The BLASTP searches against the NCBI protein database found 265 sequences homologous to the query sequences, but did not include any new allergenic proteins apart from ten that were already found during the FARRP database searches. The Raptein™90 proteins did not match any peptides using the word search against the CD peptide dataset, which the primary tool to indicate elicitation of CD search. Likewise, the full-length FASTA search against the CD protein dataset also did not indicate high sequence similarity with the Raptein™90 proteins with the criteria of E-value < 10⁻¹⁵ and identity > 45 %. This result indicates that the Raptein™90 proteins are unlikely to elicit CD.	
Espoo 27.7.2022 Written by Gopal Peddinti, Senior Scientist, and Waltteri Hosia, Senior Scientist Reviewed by Paula Jouhten, Research Team Leader	
VTT's contact address VTT Technical Research Centre of Finland Ltd, P.O. Box 1000, 02044 VTT, Espoo, Finland	
Distribution NapiFeryn BioTech VTT Technical Research Centre of Finland Ltd	

Approval

VTT TECHNICAL RESEARCH CENTRE OF FINLAND LTD

Date: 3.9.2021

Signature:

A grey rectangular box redacting the signature.

Name: Paula Jouhten

Title: Research Team Leader

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1. Description and objectives

The aim of the *Rapeseed Allergenicity* project was to perform protein analysis and bioinformatics searches to provide information of allergenicity of protein sequences found in NapiFeryn BioTech's rapeseed protein isolate Raptein™90.

2. Methods / realisation

2.1 Protein identification

Protein characterization and identification was performed in three different levels. SDS-PAGE gel was run to evaluate the general protein content and character of the samples, intact mass LC-MS to detect the presence of napin and cruciferin proteins, and finally the peptide map LC-MS to allow accurate mass & sequence based identification of proteins present in the sample.

2.2 Sample preparation

Sample stocks of 35 mg/ml were made by weighing aliquots of dry samples to Eppendorf tubes, adding correct amount of 150 mM NaCl to give 35 mg/ml concentration and

vortexing with 150 mM NaCl solution for 40 min. Subsequent samples were made from these stocks or diluted stocks.

2.3 SDS PAGE

A standard denaturing SDS-PAGE was run for the samples. The RapterinTM90 samples were run as reduced samples. Mini Protean 12 % SDS-PAGE gel (Bio-Rad) stained with PageBlue Coomassie stain (Thermo Scientific) was used. 1 µl of 1:100 diluted stock sample (0.35 µg) was pipetted per lane.

2.4 Intact mass analysis

For intact mass analysis, 10 µl of the stock samples as above was diluted to 1 ml (0.35 µg/µl) and centrifuged 5 min at 14000 rpm, supernatant was loaded into LC-MS vials. Different amounts of sample were injected after initial testing and reverse phase gradient was used. Buffer A was 0.1 % formic acid and Buffer B was 100 % acetonitrile. The flow was set to 350 µl starting at 10 % B from 0 to 1 min and then ramping to 75 % B over 6 min before a 95 % B wash and equilibration phase at 10 % B. Column temperature was 65 °C A Waters acquity CSH 1.7 µm C4 50 x 2.1 mm column was used. The flow from the column was passed into Waters Synapt G2 QTOF mass spectrometer. MS only acquisition was used. Source parameters were following:

Polarity	ES+	
Capillary (kV)	2.9	
Source Temperature (°C)	140	
Sampling Cone	130 V	
Source Offset	75 V	
Desolvation Temperature (°C)		600 °C
Cone Gas Flow (L/Hr)		34
Desolvation Gas Flow (L/Hr)		900

2.5 Peptide Map analysis

2.5.1 Trypsin digestion

Stock samples were used. An aliquot of 2 µl of RapterinTM90 solubilized fraction was taken to digestion. To 52 µg of protein concentrate 20 µl of 8 M urea with 6 mM DTT is added, sample was incubated with shake at 50 °C for 60 min. 2µl of iodoacetamide (IAM) was added to a final IAM concentration of 18 mM. Sample was incubated with shake in dark (lid on) for 30 min at RT. 90 µl of 100 mM Tris pH 7.8 is added to dilute urea below 1.5 M, sample was mixed and 1:25 (w/w) sequencing grade trypsin was added. The digestion was carried out overnight at 37 °C with slow shaking.

2.5.2 Chromatography and mass spectrometry

Mass spectrometry was done with Synapt G2 Q-TOF mass spectrometer, Acquity UPLC system. 2.1 x 100 mm Waters CSH C18 column was used. Column temperature was 60 °C. A gradient from 2 % to 40 % acetonitrile is applied from 2 to 17 min, after which a saw tooth wash phase and equilibration phase were applied. An MSe acquisition mode (Data independent fragmentation) was used. Source parameters were the following:

Polarity	ES+
Capillary (kV)	2.85

Source Temperature (°C)	135	
Sampling Cone	36 V	
Source Offset	56 V	
Desolvation Temperature (°C)	420 °C	
Cone Gas Flow (L/Hr)	17	
Desolvation Gas Flow (L/Hr)		900

MSe acquisition parameters:

Mass Range (m/z)	50-1995
Collision Ramp energy (Low mass-High mass) (eV)	25.0 to 85.0
Scan Time (s)	0.3

2.6 Bioinformatics search for peptide identification

Mascot Server 2.8 and Mascot Distiller 2.8 software were used to search the peptide mapping data against the database. The parameters used were following:

Database	SwissProt 2021_03 (565,254 sequences; 203,850,821 residues)
Taxonomy	Other green plants (19,756 sequences)
Type of search	MS/MS Ion Search
Enzyme	Trypsin/P
Fixed modifications	Carbamidomethyl (C)
Variable modifications	Deamidated (NQ), Gln->pyro-Glu (N-term Q), Glu->pyro-Glu (N-term E), Oxidation (M)
Mass values	Monoisotopic
Protein mass	Unrestricted
Peptide mass tolerance	0.1 Da
Fragment mass tolerance	0.1 Da
Max missed cleavages	2
Instrument type	ESI-QUAD-TOF
Significance threshold p<	0.05
Max. number of families	AUTO
Ions score or expect cut-off	0
Min. number of sig. unique sequences	1

2.7 Sequence similarity searches

The bioinformatics searches for sequence similarity to known allergen proteins or Celiac Disease-eliciting proteins rely primarily on the use of the FASTA3 algorithm developed

by Pearson at the University of Virginia (Pearson and Lipman, 1988) and BLASTP (Altschul et al. 1990).

Databases

The identified proteins were searched in the following publicly accessible databases to identify potential allergenicity.

AllergenOnline.org

The FARRP allergic protein database (Food Allergy Research and Resource Program, www.allergenonline.org, Goodman et al. 2016) includes known and putative allergens that have been identified as IgE binding proteins from food, airway, contact and venom allergen sources. The FARRP database version 21 (February 14, 2021) contained a list of 2233 known or putative allergens from 912 allergenic taxonomic protein groups, and was used in the bioinformatics searches in this project. The database version 21 is freely accessible as a web resource (<http://www.allergenonline.com/AllergenOnlineV21.pdf>).

Celiac Peptide and Gluten Protein database

AllergenOnline also includes a set of 1013 peptides were identified from grains of the wheat and wheat relatives (barley, rye and oats) including native and deamidated peptides of glutens (gliadins and glutenins) that have been shown to elicit celiac disease (CD), activate Major Histocompatibility Class (MHC) II restricted T cells of subjects with CD, or stimulating toxicity in intestinal epithelia or intestinal inflammatory cells in subjects with CD. The peptides are used in searches for exact peptide (AA) matches within any query sequence. The peptides are all based on binding to MHC DQ2.5, DQ8 or the nearly identical (DQ2.2, DQ8.5) receptors, but in addition, stimulated MHC restricted T cells from subjects with CD; or alternatively had specific toxic effects such as stimulating signal induction through the EGFR receptor of intestinal epithelial cells, stimulating IL-15 production by intestinal macrophages, inducing TNF expression from dendritic cells increasing HLA-E expression in intestinal epithelial cells, increasing intestinal permeability or signalling antigen presenting cells through TLR4 to secrete inflammatory cytokines (Jabri and Sollid, 2009).

Seventy-two representative gluten proteins containing at least one of the CD peptides are also provided at AllergenOnline.org CD database, for rapid screening using FASTA3 with criteria that allows for some AA substitutions, but conserved overall identity matches that might represent some risk from the query protein. This set of 72 proteins is to be used for screening with FASTA algorithm, in addition to the exact peptide match criterion with the 1013 peptides, with minimum percent identity of 45 and maximum E-value of 10^{-16} . The FARRP Celiac Disease database is publicly accessible from <http://www.allergenonline.com/celiachome.shtml>.

NCBI Protein

This is an uncurated database of general proteins maintained by the National Library of Medicine, National Institute of Health in the USA (<http://www.ncbi.nlm.nih.gov/protein>). It is updated every few days. Many sequences in NCBI that are designated as allergens or associated with allergy by keywords are not included in the AllergenOnline.org database because they lack any published proof of allergy. The NCBI database may be searched by keywords or by sequence comparison (BLASTP). As the FARRP database version 21 released in Feb 2021, has been curated by experts based on the published evidence for allergenicity from the latest NCBI protein database available at the time, the NCBI protein

entries last updated prior to 2021 can be considered to have been reviewed by the FARRP database team and to have been included in the FARRP database if evidence for their potential allergenicity exists. Therefore, we can safely assume that the proteins whose information was last updated on NCBI protein database prior to 2021 and not included in FARRP database, even if they are homologous to the query proteins, do not provide any evidence for the potential allergenicity if the FARRP allergenicity database is used for screening allergenicity. Such homologous proteins, however, may provide hints for assigning gene functions to the query proteins.

Search algorithms

The most important searches for risk assessment of allergenicity are amino acid sequence identity searches (FASTA or BLAST) comparing the query sequence to known allergens, looking for matches of > 50 % identity over the full length of the sequences. Since many sequences are labelled as allergens in the public NCBI database often without full validation of allergenicity, the use of the curated AllergenOnline.org database is the primary search database. A full-length FASTA3 search is the algorithm for optimum alignment. As a conservative assessment, Codex (2003) recommends a search for matches of > 35 % identity over 80 amino acid segments and the "sliding window" approach on the www.AllergenOnline.org website is a useful and convenient tool for that step. Some countries still demand a search for identity matches of 8 amino acids and the word search method with www.AllergenOnline.org is effective to meet those demands. In addition, it is sometimes useful to run BLASTP on the NCBI Protein database using a keyword limit ("allergen") to verify that the www.AllergenOnline.org database did not omit an important allergenic homologue of the novel protein that matches with at least 50 % identity over the full-length. To help evaluate BLASTP results, a second BLASTP search should be performed without keyword limits to understand the similarity of the novel protein to other proteins, many of which humans are likely to have been exposed to without sensitizing or eliciting allergic responses. Details are provided below.

Searching FARRP DB with full-length FASTA3

The primary search algorithm for allergenicity searching is a full-length FASTA3 search that gives optimum alignments using the default criteria defined by Pearson (2000). The default scoring matrix is BLOSUM 50 (Henikoff and Henikoff, 1992 and 1996). The penalty for each gap inserted into query or searched sequences to obtain optimal alignments is calculated as $(-q + -r \cdot k)$, where q (10) is an initial penalty for each independent gap, r (2) is a penalty for each amino acid position within the gap and k is the number of amino acid positions within the gap (Reese and Pearson, 2002). The default word size (k tup) is two (Pearson, 2000). The FASTA3 version used in these searches was 36.3.8h May, 2020 (<https://github.com/wrpearson/fasta36>). Very small expectation values (E values) indicate probable evolutionary homology, and structural similarity. While the default E value for FASTA3 is 10, a value that does not indicate significant similarity, distantly related sequences will generally have E values less than 0.01, and highly similar sequences that probably represent close homology are more likely to have E values much less than 10^{-7} . If the E value calculated for an alignment between the query protein and any one allergen appear to indicate significant similarity, the percent identity over the length of the intact proteins may be evaluated for possible cross-reactivity in those sensitized to the matched allergen. As discussed by Aalberse (2000), a protein sharing greater than 70 % identity over its length, relative to an allergen is likely to be cross-reactive, or share IgE binding. Those that have less than 50 % identity are not very likely to be cross-reactive.

Searching FARRP DB with sliding window of 80 AA

The identification of relatively short regions of high identity shared by a query sequence and an allergen may indicate similarities that could also share IgE binding, or cross-reactivity. Based on the recommendation of Codex (2003), the FASTA3 algorithm was used to compare all possible contiguous amino acid segments of each query protein sequence against all sequences listed in AllergenOnline. Every possible contiguous 80-amino acid sequence of each query protein was searched, beginning with amino acids 1-80, then 2-81, 3-82 and so on until the last 80 amino acid segment of each protein was compared with the database using the same FASTA3 algorithm used for the full-length sequence comparison. The same criterion of 35 % identity is maintained as per the recommendation of Codex (2003). The rationale by Codex (2003) for recommending that alignments of > 35 % identity over segments as short as 80 amino acids is that proteins sometimes contain structural motifs that are comprised of sequences much shorter than the intact protein, and that these structural motifs may include a conformational IgE binding epitope. In such a situation, the overall sequence identity for the aligned proteins may be significantly less than 35 %, even though a short region could contain an important cross-reactive epitope. This criterion is more conservative than empirical data would suggest is common for cross-reactive proteins (Aalberse, 2000). It should also help to identify potentially cross-reactive proteins that are not true homologues of an allergen but have significant local identities that might provide an immunological target for IgE antibodies in those with allergies to the matched allergen. The output of the 80 amino acid FASTA3 search includes a table of each allergen that was matched, and the total number of 80-amino acid matches of greater than 35 % identity.

Searching FARRP DB with 8-mer exact match

The eight amino acid identity match often requested for GM crop protein evaluation is essentially a “word” matching program that looks for segments of 8 contiguous amino acids (8-mer) with a 100 % identity match to any 8-mer segment of any allergen in the database. It is a very conservative estimator for cross-reactivity and over-predicts potential allergic cross-reactivity (Hileman et al., 2002; Silvanovich et al, 2006; Cressman and Ladics, 2009). Therefore, this search was not performed to evaluate the Raptein™90 proteins.

Searching the FARRP Celiac Database

The primary search is for any exact amino acid sequence match between the query sequences (Table 1) and the CD peptide dataset containing 1013 peptide sequences in the FARRP database. The search was done as a word search requiring an exact peptide sequence match. The secondary search was a FASTA search against the CD full-length protein dataset containing 72 proteins. The FASTA search results should be evaluated to look for matches with E-values smaller than 10^{-15} and greater than 45 % identity.

Searching NCBI Protein using BLASTP

In addition to searching for homologous sequences in the curated FARRP database, a protein-protein BLAST search (blastp) was performed against the whole of NCBI non-redundant sequence database (nr database), to find any possible homologous sequences to the sequences found in Raptein™90 samples (Table 1). The default BLASTP parameters were used for the search (E-value < 0.05, Hitlist size 100, Word size 6, Matrix BLOSUM62).

3. Results

3.1 Sample dissolution

Sample dissolution to 150 mM NaCl was successful for Raptein™90 samples, estimated 75 % - 85 % of dry material dissolved.

3.2 SDS PAGE

Cruciferin is known to exist natively as multimeric protein composed of several subunits, which separate in SDS PAGE, Napin has two main chains of 9 kDa and 4 kDa. SDS page results (Figure 1) are in accordance with the above and the previously published SDS Page results for cruciferin and napin [1, 2]

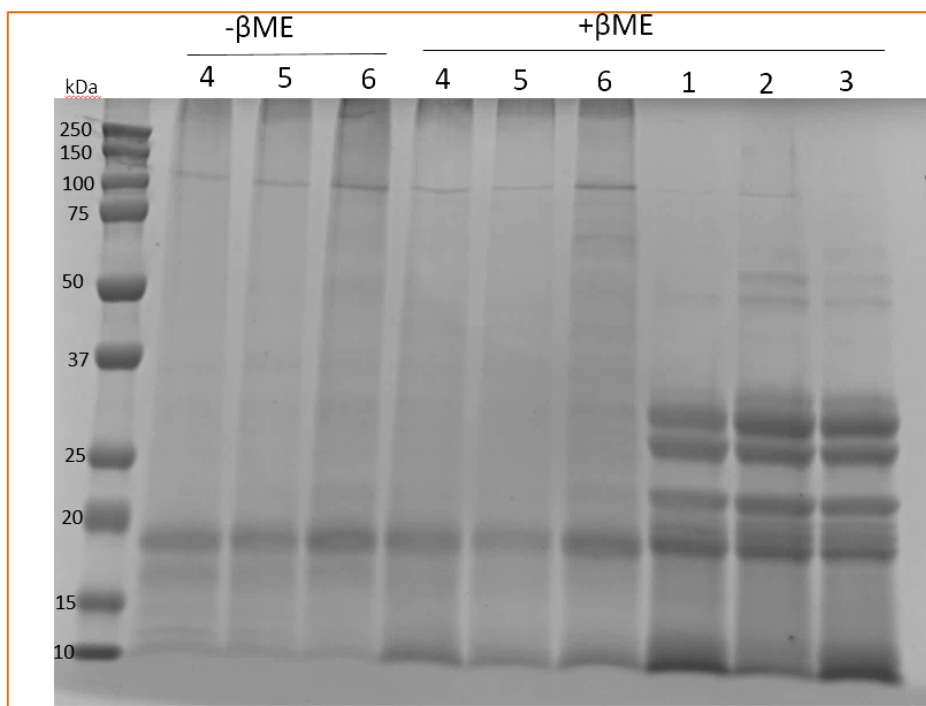


Figure 1, SDS PAGE gel. The lanes in the Coomassie stained gel containing Raptein™90 samples were the following: +βME 1 = R08#57_Raptein™90, 2 = R03#57_Raptein™90, 3 = R06#35_Raptein™90.

3.3 Intact mass spectrometry

In TIC chromatograms the Raptein™90 samples separated as two chromatographically clear peaks (Figure 2). As was expected due to heterogeneous nature of samples, and polymerizing propensity of cruciferin, only few proteins could be observed as separable concise mass in intact LC-MS (Figure 3). A very high signal was observed for ca. 8.8 kDa and 8.4 kDa peptides for Raptein™90 samples in both main chromatographic peaks.

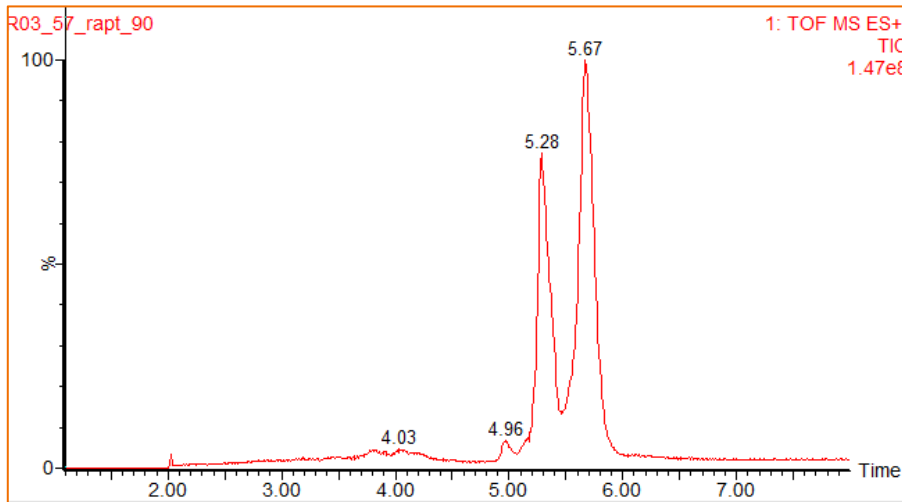


Figure 2. TIC Chromatogram of a representative RapteinTM90 sample

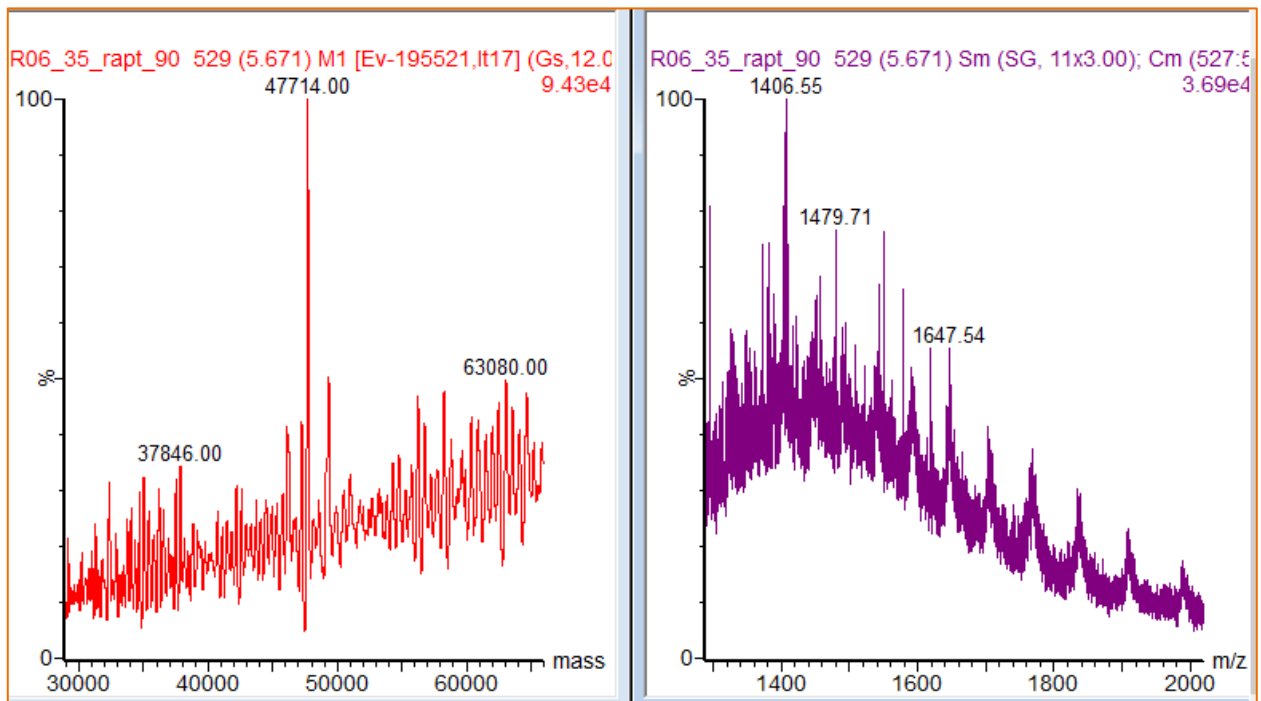


Figure 3. Deconvoluted (left) and original (right) mass spectrum of intact protein LC-MS of R06_35 RapteinTM90 sample of one relatively pure spectrum. Deconvoluted mass is 47,7 kDa, the reported cruciferin masses are 54-56 kDa.

3.4 Peptide mapping

The RapteinTM90 samples were solubilized by NaCl and TIC intensities were high for RapteinTM90 samples (Figure 4). There were minor partially digested higher Mw residuals in the digests. Overall, the digestion had proceeded normally, which was evident also in the successful identification of cruciferin peptides and napin peptides. Figures 4, 5 and 6 show the TIC chromatograms, and exemplary MS and MSe channel data, respectively, for the QQQGQQGQLQQVISR peptide of napin in RapteinTM90.

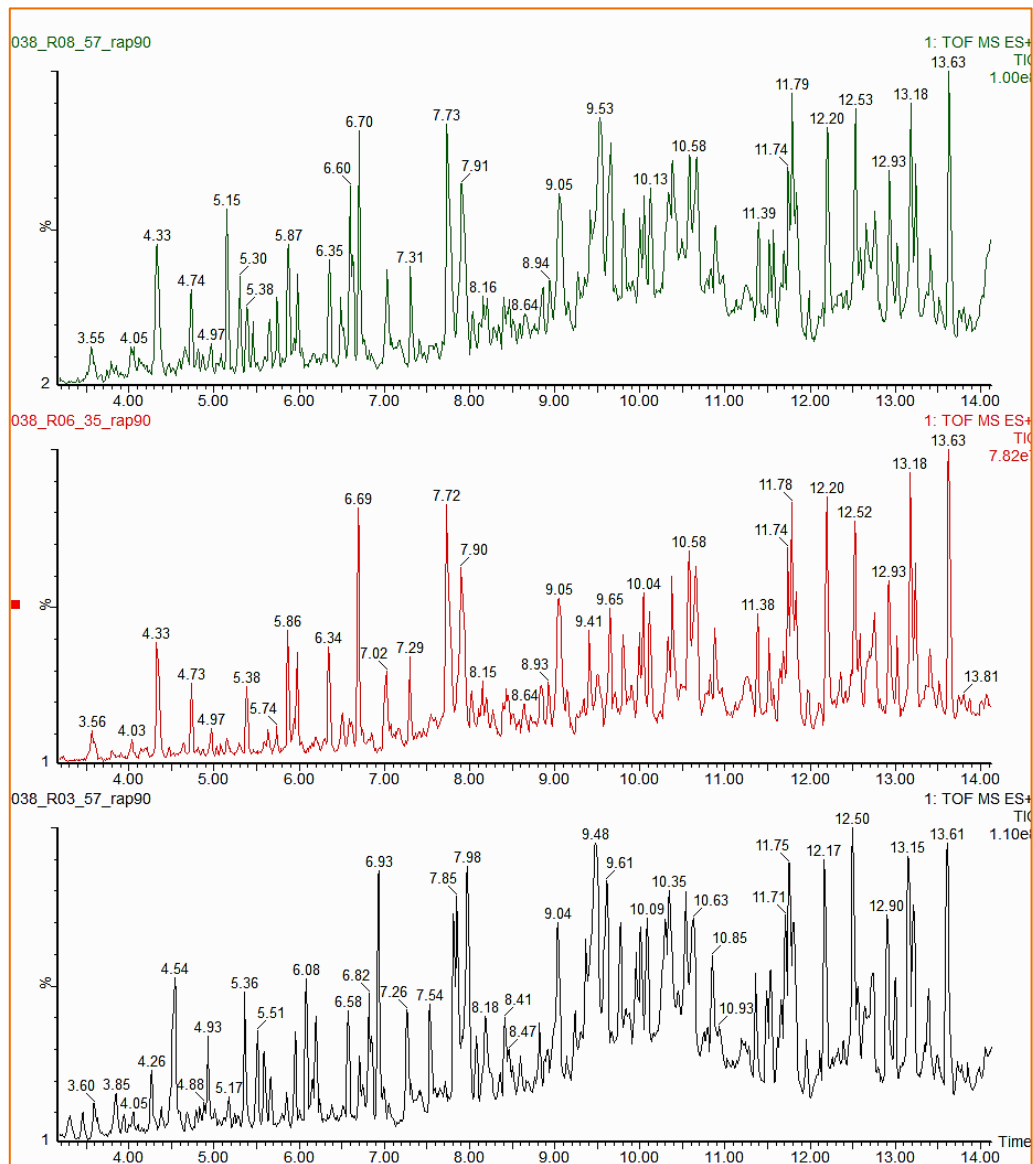


Figure 4. TIC chromatograms of RapteinTM90 tryptic digests (Peptide map)

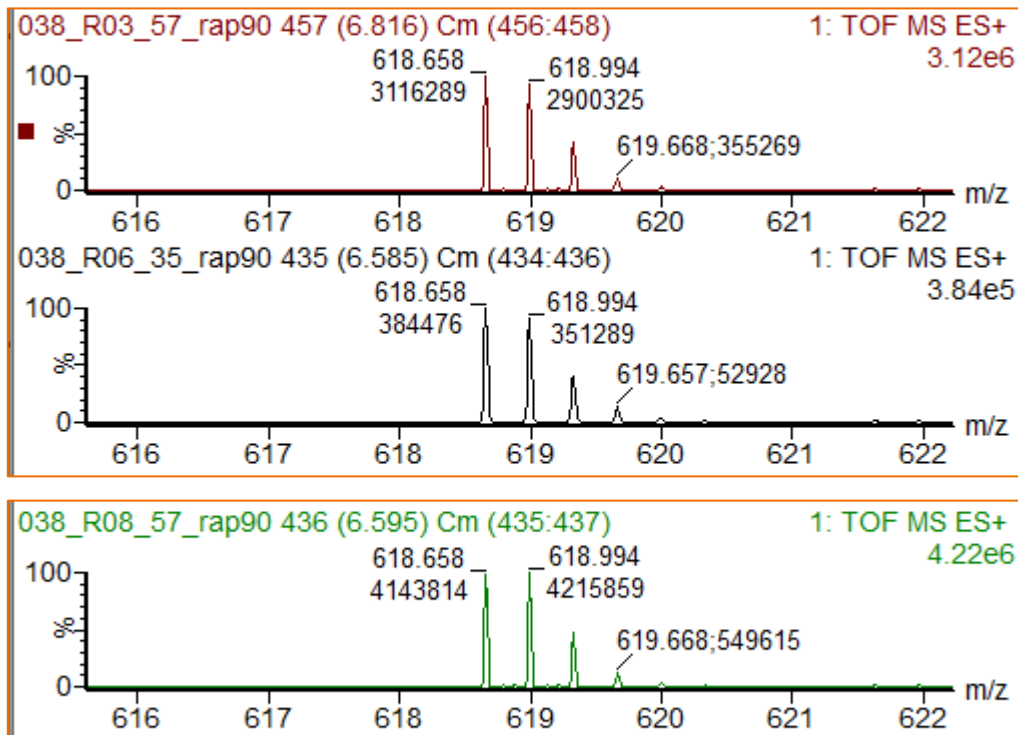


Figure 5. HR MS Spectrum of peptide 3+ charge state of QQQGQQGQQLQQVISR in all samples

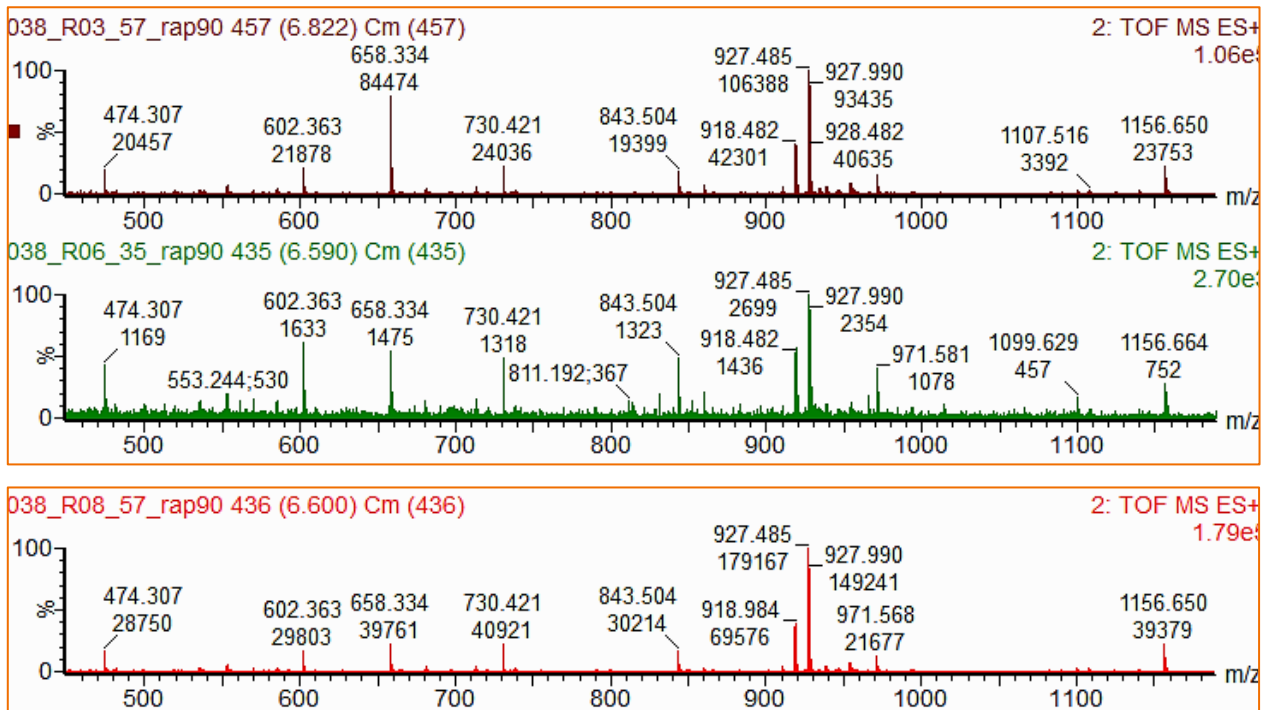


Figure 6. Mse high energy fragment spectrum comparison for peptide QQQGQQGQQLQQVISR for example y7 (1156.6), y9 (971.6), y10 (843.5), y11 (730.4), y12 (602.4), and y13 (474.3) can be seen in all samples

3.5 Mascot search

Uniprot-SwissProt is high quality manually curated database (<https://www.uniprot.org/>) with small amount of redundancy and known to contain +300 *Brassica napus* sequences. SwissProt database was searched with Mascot server parameters said in materials and methods via Mascot distiller using slightly adjusted peak picking parameters for MS and vendor (Waters) supplied peak picking parameters for MSe channels.

The search was limited to taxonomy of “other green plants” which served also as secondary functional control of searches so that we got hits also for proteins of other plants with overlapping sequences with *Brassica*.

Generally, the cruciferin was the most abundant protein found, it was found with Mascot in all samples directly. Napin was also directly found in all samples. A representative result list for (filtered for *Brassica napus*) is shown in Table 1.

Table 1: Mascot search results for a representative sample of Rapterin™90

Accession	Score	Mass (Da)	Relative abundance	Description
CRU3_BRANA	1729	56867	1.33	Cruciferin CRU1 OS=Brassica napus OX=3708 GN=CRU1 PE=3 SV=1
CRU1_BRANA	1446	54076	1.23	Cruciferin BnC1 OS=Brassica napus OX=3708 GN=BnC1 PE=3 SV=2
CRU4_BRANA	1194	51630	1.89	Cruciferin CRU4 OS=Brassica napus OX=3708 GN=CRU4 PE=1 SV=1
CRU2_BRANA	469	54542	0.52	Cruciferin BnC2 OS=Brassica napus OX=3708 GN=BnC2 PE=3 SV=2
2SS3_BRANA	154	14482	0.83	Napin-3 OS=Brassica napus OX=3708 PE=1 SV=1
2SSE_BRANA	150	21455	0.52	Napin embryo-specific OS=Brassica napus OX=3708 PE=2 SV=1
2SSB_BRANA	34	20557	0.24	Napin-B OS=Brassica napus OX=3708 GN=NAPB PE=2 SV=1

The *Brassica napus* protein sequences identified in the Rapterin™90 samples are shown in Table 1. Napin-3 (2SS3_BRANA) is known to cause allergic reaction in humans and to bind to IgE (Monsalve et al. 1997) and belongs to 2S albumin (Bra n 1) allergenic family.

The results of the bioinformatics searches performed with the sequences shown in as query sequences (Table 1) to find the matching protein sequences from sequence databases are presented in the sections below.

3.6 Sequence matches from FARRP database

Full length FASTA matches for Napin-3

NCBI-GI	opt	bits	E(2233)	%_id	%_sim	alen
75107016	907	95.9	4.70E-22	1	1	125
32363444	835	89.3	4.60E-20	0.891	0.953	129
1009438	592	67.1	2.50E-13	0.819	0.847	144
1009440	590	67	2.80E-13	0.826	0.854	144
1009436	590	67	2.80E-13	0.826	0.854	144
1009442	588	66.8	3.20E-13	0.813	0.847	144
51338758	582	66.2	4.70E-13	0.826	0.847	144
1009434	579	65.9	5.70E-13	0.813	0.84	144
17697	552	63.6	3.50E-12	0.809	0.858	141
26985163	408	50	2.60E-08	0.532	0.757	111
110349081	245	35.3	0.00096	0.348	0.705	112
28207731	222	33.2	0.0041	0.322	0.678	115
31321942	217	32.8	0.0059	0.324	0.667	111
1794252	210	32.1	0.0086	0.306	0.667	111
226437844	198	31	0.019	0.352	0.63	108
13183175	196	30.9	0.022	0.336	0.588	119
209165427	194	30.7	0.025	0.336	0.58	119
68564970	181	29.4	0.055	0.31	0.612	116
112754	181	29.4	0.056	0.235	0.574	115
24473800	171	28.5	0.1	0.348	0.652	115
5381323	160	27.5	0.21	0.283	0.593	113
21068	163	28.2	0.23	0.349	0.688	109
158121995	150	26.7	0.42	0.254	0.569	130

Matches with 80-mer FASTA for Napin-3

Hit #	NCBI-gi	Species	Best %ID	# Hits > 35%	Full-align E-val	Full-align %ID	Full-align len
1	75107016	Brassica napus	100.00 %	46of46	4.70E-22	100.00 %	125
2	32363444	Brassica juncea	92.70 %	46of46	4.60E-20	89.10 %	129

3	10094 36	Sinapis alba	91.60 %	46of46	2.80E-13	82.60 %	144
4	10094 38	Sinapis alba	91.60 %	46of46	2.50E-13	81.90 %	144
5	51338 758	Sinapis alba	91.60 %	46of46	4.70E-13	82.60 %	144
6	10094 40	Sinapis alba	91.60 %	46of46	2.80E-13	82.60 %	144
7	10094 42	Sinapis alba	90.40 %	46of46	3.20E-13	81.30 %	144
8	17697	Brassica rapa	90.00 %	46of46	3.50E-12	80.90 %	141
9	10094 34	Sinapis alba	89.20 %	46of46	5.70E-13	81.30 %	144
10	26985 163	Brassica napus	55.00 %	46of46	2.60E-08	53.20 %	111
11	11034 9081	Pistacia vera	38.76 %	18of46	0.00096	34.80 %	112
12	21068	Ricinus communis	38.71 %	17of46	0.23	34.90 %	109
13	13183 175	Sesamum indicum	37.52 %	12of46	0.022	33.60 %	119
14	20916 5427	Sesamum indicum	37.52 %	12of46	0.025	33.60 %	119
15	20860 5348	Triticum aestivum	36.60 %	2of46	4.3	28.20 %	131
16	20860 5346	Triticum aestivum	36.60 %	2of46	3.8	28.20 %	131
17	31321 942	Juglans nigra	36.29 %	7of46	0.0059	32.40 %	111
18	22643 7844	Corylus avellana	36.27 %	5of46	0.019	35.20 %	108
19	28886 0106	Triticum aestivum	36.20 %	4of46	11	36.20 %	80
20	28207 731	Carya illinoensis	36.20 %	1of46	0.0041	32.20 %	115
21	17073 8	Triticum aestivum	35.80 %	6of46	11	27.60 %	127
22	88696 7	Triticum aestivum	35.20 %	4of46	27	31.50 %	127

23	24473 800	Anacardium occidentale	35.00 %	3of46	0.1	34.80 %	115
24	28347 6402	Triticum aestivum	35.00 %	7of46	4.7	32.10 %	109

Full-length FASTA matches for Napin-B

NCBI-GI	opt	bits	E(2233)	%_id	%_sim	alen
17697	1134	150	4.80E-38	0.888	0.955	178
1009436	939	126.3	5.60E-31	0.89	0.959	145
1009440	936	125.9	7.20E-31	0.89	0.952	145
1009438	920	124	2.80E-30	0.876	0.938	145
51338758	919	123.8	3.00E-30	0.883	0.938	145
1009442	916	123.5	3.90E-30	0.869	0.938	145
1009434	915	123.4	4.20E-30	0.876	0.938	145
75107016	556	79.7	5.00E-17	0.809	0.851	141
32363444	555	79.6	5.50E-17	0.778	0.854	144
26985163	297	48.2	1.30E-07	0.5	0.694	124
13183175	190	35.4	0.0013	0.32	0.587	172
209165427	188	35.2	0.0016	0.32	0.581	172
110349081	181	34.3	0.0028	0.341	0.659	179
24473800	175	33.5	0.0044	0.331	0.64	172
226437844	150	30.5	0.038	0.323	0.61	164
5381323	142	29.6	0.074	0.23	0.539	165
208605346	139	29.5	0.14	0.266	0.524	143
208605348	139	29.6	0.17	0.265	0.551	147
21068	134	28.9	0.21	0.333	0.61	123
28207731	129	28	0.22	0.315	0.601	168
158121995	127	27.8	0.28	0.224	0.56	134
15418705	125	27.5	0.32	0.262	0.548	168
224747150	125	27.5	0.32	0.244	0.549	164
157384600	137	29.8	0.35	0.235	0.529	136
1794252	122	27.1	0.38	0.293	0.593	167
21757	128	28.2	0.38	0.252	0.523	151
170710	128	28.2	0.4	0.252	0.536	151

31321942	121	27.1	0.46	0.302	0.593	172
170722	124	27.7	0.49	0.243	0.527	148
283476402	124	27.7	0.52	0.272	0.507	136
6580762	126	28.3	0.72	0.239	0.507	142
170724	120	27.2	0.75	0.26	0.551	127
68564970	114	26.1	0.75	0.287	0.557	167
21673	119	27.1	0.83	0.276	0.535	127
288709	118	27	0.86	0.282	0.556	124
1708280	118	27	0.87	0.282	0.556	124

Matches with 80-mer FASTA for Napin-B

Hit #	NCBI-gi	Species	Best %ID	# Hits > 35%	Full-align E-val	Full-align %ID	Full-align len
1	1009440	Sinapis alba	97.50 %	99of99	7.20E-31	89.00 %	145
2	51338758	Sinapis alba	97.50 %	99of99	3.00E-30	88.30 %	145
3	1009436	Sinapis alba	97.50 %	99of99	5.60E-31	89.00 %	145
4	1009434	Sinapis alba	97.50 %	99of99	4.20E-30	87.60 %	145
5	1009438	Sinapis alba	97.50 %	99of99	2.80E-30	87.60 %	145
6	17697	Brassica rapa	96.30 %	99of99	4.80E-38	88.80 %	178
7	1009442	Sinapis alba	96.30 %	99of99	3.90E-30	86.90 %	145
8	75107016	Brassica napus	89.00 %	99of99	5.00E-17	80.90 %	141
9	32363444	Brassica juncea	84.70 %	99of99	5.50E-17	77.80 %	144
10	26985163	Brassica napus	55.00 %	73of99	1.30E-07	50.00 %	124
11	110349081	Pistacia vera	39.97 %	20of99	0.0028	34.10 %	179
12	21068	Ricinus communis	37.80 %	16of99	0.21	33.30 %	123

13	13183 175	Sesamum indicum	37.50 %	8of99	0.0013	32.00 %	172
14	20916 5427	Sesamum indicum	37.50 %	8of99	0.0016	32.00 %	172
15	24473 800	Anacardium occidentale	35.01 %	1of99	0.0044	33.10 %	172

Full-length FASTA matches for Napin embryo-specific

NCBI-GI	opt	bits	E(2233)	%_id	%_sim	alen
17697	1092	132.5	9.90E-33	0.87	0.924	185
51338758	907	112	1.10E-26	0.857	0.932	147
1009434	895	110.7	2.80E-26	0.857	0.918	147
1009438	891	110.3	3.80E-26	0.85	0.918	147
1009436	889	110.1	4.50E-26	0.844	0.925	147
1009442	887	109.8	5.20E-26	0.844	0.918	147
1009440	886	109.7	5.60E-26	0.844	0.918	147
75107016	561	73.9	2.90E-15	0.779	0.828	145
32363444	544	72.1	1.10E-14	0.753	0.822	146
26985163	200	34.2	0.0023	0.473	0.634	131
226437844	132	26.8	0.51	0.339	0.589	168
13183175	158	29.7	0.072	0.337	0.607	178
209165427	156	29.5	0.084	0.337	0.601	178
24473800	172	31.2	0.023	0.322	0.633	180
28207731	132	26.8	0.5	0.314	0.6	175
31321942	125	26.1	0.92	0.313	0.592	179
21757	179	32.3	0.023	0.299	0.503	157
170740	177	32.1	0.027	0.299	0.497	157
1794252	125	26.1	0.83	0.299	0.586	174
110349081	141	27.8	0.26	0.295	0.636	176
283476402	135	27.5	0.63	0.286	0.5	154
170710	146	28.7	0.3	0.285	0.5	158
1137166044	137	27.7	0.56	0.283	0.503	159
21068	146	28.6	0.26	0.28	0.597	186
21673	131	27.1	0.91	0.278	0.488	162
15418705	148	28.6	0.16	0.268	0.532	190

21761	131	27	0.87	0.263	0.494	156
17225991	126	26.2	0.79	0.262	0.546	130
26245447	154	29.3	0.11	0.261	0.537	203
75114094	123	25.9	1	0.261	0.551	176
5381323	141	27.8	0.26	0.257	0.561	171
159163254	124	25.9	0.84	0.254	0.562	130
31322017	154	29.3	0.1	0.247	0.551	158
224747150	149	28.7	0.15	0.247	0.52	198
170726	138	27.8	0.5	0.246	0.516	122
208605346	137	27.7	0.53	0.242	0.542	153

Matches with 80-mer FASTA for Napin embryo-specific

Hit #	NCBI-gi	Species	Best %ID	# Hits > 35%	Full-align E-val	Full-align %ID	Full-align len
1	17697	Brassica rapa	90.00 %	107of107	9.90E-33	87.00 %	185
2	51338758	Sinapis alba	88.70 %	107of107	1.10E-26	85.70 %	147
3	1009436	Sinapis alba	88.70 %	107of107	4.50E-26	84.40 %	147
4	1009434	Sinapis alba	88.70 %	107of107	2.80E-26	85.70 %	147
5	1009440	Sinapis alba	88.70 %	107of107	5.60E-26	84.40 %	147
6	1009438	Sinapis alba	88.70 %	107of107	3.80E-26	85.00 %	147
7	1009442	Sinapis alba	87.50 %	107of107	5.20E-26	84.40 %	147
8	75107016	Brassica napus	86.60 %	107of107	2.90E-15	77.90 %	145
9	32363444	Brassica juncea	83.74 %	107of107	1.10E-14	75.30 %	146
10	26985163	Brassica napus	52.50 %	79of107	0.0023	47.30 %	131
11	209165427	Sesamum indicum	38.80 %	22of107	0.084	33.70 %	178

12	13183 175	Sesamum indicum	38.80 %	22of107	0.072	33.70 %	178
13	22643 7844	Corylus avellana	38.79 %	7of107	0.51	33.90 %	168
14	11034 9081	Pistacia vera	37.54 %	12of107	0.26	29.50 %	176
15	24473 800	Anacardium occidentale	37.50 %	2of107	0.023	32.20 %	180

Full-length FASTA matches for Cruciferin BnC1

NCBI-GI	opt	bits	E(2233)	%_id	%_sim	alen
62240390	1281	172.1	8.60E-44	0.589	0.824	501
62240392	601	87.6	2.50E-18	0.572	0.814	512
523916668	349	56.5	1.90E-09	0.482	0.679	193
307159114	639	92.3	9.10E-20	0.451	0.695	508
18479082	682	97.6	2.30E-21	0.447	0.684	532
25991543	698	99.7	5.00E-22	0.444	0.712	493
258588247	655	94.3	2.40E-20	0.441	0.704	521
557792009	689	98.5	1.20E-21	0.436	0.68	541
307159112	651	93.8	3.60E-20	0.436	0.697	544
1534918238	747	105.8	6.80E-24	0.434	0.702	456
291482310	114	27.3	0.87	0.432	0.636	44
158998782	664	95.4	1.10E-20	0.43	0.663	537
158998780	663	95.3	1.10E-20	0.43	0.663	537
1126299828	662	95.2	1.30E-20	0.427	0.661	531
82469930	1069	145.8	6.60E-36	0.426	0.707	498
56788031	660	94.9	1.50E-20	0.424	0.656	538
110349085	991	136.1	5.60E-33	0.418	0.706	493
156001070	984	135.2	1.00E-32	0.416	0.706	493
30313867	750	106.1	5.80E-24	0.416	0.693	495
110349083	813	113.9	2.70E-26	0.409	0.7	504
113200131	874	121.5	1.50E-28	0.405	0.695	479
75219081	125	28.5	0.81	0.405	0.635	74
169971	464	70.7	1.40E-13	0.404	0.718	188
170730	132	29.4	0.48	0.403	0.584	77

170732	132	29.4	0.51	0.403	0.584	77
112677	684	97.9	1.80E-21	0.397	0.628	506
29839419	551	81.3	1.90E-16	0.396	0.715	480
29839255	834	116.5	4.60E-27	0.395	0.701	471
13183173	984	135.2	1.10E-32	0.391	0.669	517
18639	719	102.3	8.70E-23	0.378	0.638	503
29839254	556	82	1.30E-16	0.377	0.659	528
169973	546	80.7	2.70E-16	0.376	0.636	511
18615	545	80.6	2.90E-16	0.376	0.636	511
18609	721	102.5	7.40E-23	0.362	0.64	506
218265	721	102.5	7.40E-23	0.362	0.64	506
112380623	527	78.4	1.40E-15	0.355	0.655	516
312233065	520	77.5	2.60E-15	0.353	0.653	516
584592120	761	107.5	2.20E-24	0.344	0.682	468
584592116	761	107.5	2.20E-24	0.344	0.682	468
10566449	471	71.4	1.80E-13	0.344	0.604	538
22135348	242	43.1	2.50E-05	0.341	0.629	229
21314465	491	73.9	3.40E-14	0.336	0.607	545
5381325	797	112	9.90E-26	0.334	0.684	488
199732457	499	74.9	1.70E-14	0.334	0.609	557
224036293	499	74.9	1.60E-14	0.333	0.605	531
508732625	200	37.6	0.0041	0.333	0.519	156
170743	200	37.6	0.0042	0.333	0.519	156
21743	196	37.1	0.0061	0.333	0.513	156
169969	296	49.6	6.40E-07	0.331	0.595	538
3703107	483	72.9	6.30E-14	0.33	0.601	531
288860106	204	38.1	0.0031	0.324	0.553	188
5712199	458	69.8	5.70E-13	0.323	0.606	538
4249568	491	73.9	3.60E-14	0.321	0.558	591
18641	491	73.9	3.60E-14	0.32	0.553	591
806556	494	74.2	2.70E-14	0.318	0.557	591
732706	495	74.4	2.50E-14	0.317	0.558	590
736319	207	38.5	0.0024	0.3	0.529	227
71084277	149	31.3	0.33	0.294	0.513	228

21779	142	30.4	0.49	0.286	0.492	199
22090	174	34.4	0.034	0.278	0.545	198
46560476	144	30.8	0.25	0.277	0.672	119
375332427	159	32.7	0.067	0.275	0.614	153
347447588	159	32.7	0.067	0.275	0.614	153
21751	140	30.2	0.57	0.271	0.502	203
21930	123	28.3	0.96	0.261	0.522	180
187766751	164	33.3	0.038	0.243	0.618	152
29539111	131	29.2	0.74	0.238	0.515	344
187766749	164	33.3	0.038	0.213	0.538	338
187766747	164	33.3	0.038	0.207	0.538	338
410067729	168	33.8	0.036	0.198	0.539	479
187766755	176	34.8	0.017	0.196	0.545	455

Matches with 80-mer FASTA for Cruciferin BnC1

Hit #	NCBI-gi	Species	Best %ID	# Hits > 35%	Full-align val	Full-align %ID	Full-align len
1	62240390	Sinapis alba	76.50 %	411of411	8.60E-44	58.90 %	501
2	62240392	Sinapis alba	74.10 %	411of411	2.50E-18	57.20 %	512
3	557792009	Corylus avellana	63.70 %	374of411	1.20E-21	43.60 %	541
4	18479082	Corylus avellana	63.70 %	383of411	2.30E-21	44.70 %	532
5	523916668	Prunus dulcis	62.51 %	161of411	1.90E-09	48.20 %	193
6	307159114	Prunus dulcis	62.51 %	410of411	9.10E-20	45.10 %	508
7	25991543	Anacardium occidentale	61.30 %	367of411	5.00E-22	44.40 %	493
8	112677	Cucurbita maxima	60.50 %	294of411	1.80E-21	39.70 %	506
9	258588247	Prunus dulcis	58.79 %	391of411	2.40E-20	44.10 %	521
10	158998780	Carya illinoensis	58.79 %	347of411	1.10E-20	43.00 %	537

11	158998 782	Carya illinoensis	58.79 %	347of4 11	1.10E-20	43.00 %	537
12	112629 9828	Juglans nigra	58.79 %	343of4 11	1.30E-20	42.70 %	531
13	307159 112	Prunus dulcis	58.79 %	392of4 11	3.60E-20	43.60 %	544
14	567880 31	Juglans regia	57.52 %	351of4 11	1.50E-20	42.40 %	538
15	824699 30	Actinidia chinensis	56.30 %	342of4 11	6.60E-36	42.60 %	498
16	156001 070	Pistacia vera	56.30 %	371of4 11	1.00E-32	41.60 %	493
17	110349 085	Pistacia vera	56.30 %	379of4 11	5.60E-33	41.80 %	493
18	113200 131	Fagopyrum tataricum	55.00 %	303of4 11	1.50E-28	40.50 %	479
19	110349 083	Pistacia vera	55.00 %	346of4 11	2.70E-26	40.90 %	504
20	298392 55	Fagopyrum esculentum	55.00 %	271of4 11	4.60E-27	39.50 %	471
21	18639	Glycine max	53.80 %	277of4 11	8.70E-23	37.80 %	503
22	298394 19	Fagopyrum esculentum	53.80 %	259of4 11	1.90E-16	39.60 %	480
23	153491 8238	Bertholletia excelsa	53.80 %	352of4 11	6.80E-24	43.40 %	456
24	303138 67	Bertholletia excelsa	53.80 %	364of4 11	5.80E-24	41.60 %	495
25	298392 54	Fagopyrum esculentum	53.80 %	247of4 11	1.30E-16	37.70 %	528
26	18615	Glycine max	52.54 %	270of4 11	2.90E-16	37.60 %	511
27	169973	Glycine max	52.54 %	270of4 11	2.70E-16	37.60 %	511
28	424956 8	Glycine max	52.50 %	244of4 11	3.60E-14	32.10 %	591
29	105664 49	Glycine max	52.50 %	256of4 11	1.80E-13	34.40 %	538
30	169971	Glycine max	52.50 %	122of4 11	1.40E-13	40.40 %	188

31	806556	Glycine soja	52.50 %	244of411	2.70E-14	31.80 %	591
32	18641	Glycine max	52.50 %	244of411	3.60E-14	32.00 %	591
33	732706	Glycine max	52.50 %	223of411	2.50E-14	31.70 %	590
34	13183173	Sesamum indicum	52.46 %	320of411	1.10E-32	39.10 %	517
35	218265	Glycine max	51.29 %	230of411	7.40E-23	36.20 %	506
36	18609	Glycine max	51.29 %	230of411	7.40E-23	36.20 %	506
37	71084277	Triticum aestivum	51.20 %	66of411	0.33	29.40 %	228
38	288860106	Triticum aestivum	50.00 %	74of411	0.0031	32.40 %	188
39	22135348	Arachis hypogaea	49.40 %	50of411	2.50E-05	34.10 %	229
40	3703107	Arachis hypogaea	49.40 %	180of411	6.30E-14	33.00 %	531
41	21314465	Arachis hypogaea	49.40 %	219of411	3.40E-14	33.60 %	545
42	169969	Glycine max	48.78 %	239of411	6.40E-07	33.10 %	538
43	112380623	Arachis hypogaea	48.70 %	214of411	1.40E-15	35.50 %	516
44	312233065	Arachis hypogaea	48.70 %	208of411	2.60E-15	35.30 %	516
45	736319	Triticum aestivum	47.60 %	70of411	0.0024	30.00 %	227
46	170743	Triticum aestivum	47.50 %	72of411	0.0042	33.30 %	156
47	508732625	Triticum aestivum	47.50 %	72of411	0.0041	33.30 %	156
48	5712199	Arachis hypogaea	46.30 %	148of411	5.70E-13	32.30 %	538
49	224036293	Arachis hypogaea	46.22 %	179of411	1.60E-14	33.30 %	531
50	199732457	Arachis hypogaea	46.22 %	179of411	1.70E-14	33.40 %	557

51	5381325	Sesamum indicum	46.22 %	187of411	9.90E-26	33.40 %	488
52	21743	Triticum aestivum	44.00 %	72of411	0.0061	33.30 %	156
53	584592120	Fagopyrum esculentum	43.80 %	197of411	2.20E-24	34.40 %	468
54	584592116	Fagopyrum esculentum	43.80 %	197of411	2.20E-24	34.40 %	468
55	21779	Triticum aestivum	42.00 %	55of411	0.49	28.60 %	199
56	22090	Triticum aestivum	41.50 %	54of411	0.034	27.80 %	198
57	21751	Triticum aestivum	40.01 %	46of411	0.57	27.10 %	203
58	170732	Triticum aestivum	38.79 %	30of411	0.51	40.30 %	77
59	170730	Triticum aestivum	38.79 %	30of411	0.48	40.30 %	77
60	21930	Triticum turgidum subsp. durum	37.50 %	27of411	0.96	26.10 %	180
61	75219081	Triticum aestivum	37.46 %	26of411	0.81	40.50 %	74
62	21926	Triticum turgidum subsp. durum	37.46 %	25of411	1.2	40.50 %	74
63	62550933	Triticum aestivum	36.24 %	9of411	11	36.70 %	79

Full-length FASTA matches for Cruciferin BnC2

NCBI-GI	opt	bits	E(2233)	%_id	%_sim	alen
62240390	1913	207.6	1.90E-54	0.575	0.813	503
62240392	589	73.7	3.70E-14	0.559	0.808	515
523916668	349	49.3	2.80E-07	0.464	0.67	194
307159114	626	77.4	2.70E-15	0.444	0.68	500
258588247	623	77.1	3.50E-15	0.433	0.695	522
307159112	617	76.5	5.50E-15	0.426	0.69	545
25991543	678	82.7	6.50E-17	0.424	0.697	498
18479082	881	103.2	4.80E-23	0.423	0.675	548
1534918238	728	87.7	1.80E-18	0.417	0.698	463

557792009	882	103.3	4.50E-23	0.416	0.673	548
110349085	991	114.3	2.00E-26	0.413	0.695	499
1126299828	814	96.5	5.20E-21	0.412	0.658	532
156001070	984	113.6	3.20E-26	0.411	0.695	499
56788031	865	101.6	1.50E-22	0.411	0.662	509
82469930	1027	118	1.60E-27	0.404	0.701	505
110349083	775	92.5	7.80E-20	0.404	0.683	508
158998782	857	100.8	2.50E-22	0.402	0.657	540
158998780	852	100.3	3.60E-22	0.402	0.657	540
30313867	738	88.8	9.80E-19	0.398	0.685	502
112677	670	81.9	1.20E-16	0.388	0.631	482
13183173	964	111.6	1.40E-25	0.386	0.663	523
113200131	824	97.5	2.60E-21	0.384	0.687	485
29839419	518	66.5	5.60E-12	0.374	0.717	484
29839255	508	65.5	1.10E-11	0.369	0.69	477
169971	431	57.7	1.20E-09	0.367	0.713	188
29839254	523	67	4.10E-12	0.366	0.679	505
18639	516	66.3	5.80E-12	0.36	0.629	509
18615	681	83	5.60E-17	0.356	0.623	520
169973	676	82.5	8.00E-17	0.356	0.623	520
18609	714	86.3	5.50E-18	0.352	0.629	512
218265	714	86.3	5.50E-18	0.352	0.629	512
584592116	739	88.9	8.90E-19	0.339	0.681	454
584592120	739	88.9	8.90E-19	0.339	0.681	454
736319	247	39.2	0.0015	0.339	0.552	230
112380623	494	64.1	2.90E-11	0.332	0.63	521
312233065	487	63.4	4.70E-11	0.33	0.628	521
508732625	215	35.9	0.013	0.329	0.53	219
170743	215	35.9	0.014	0.329	0.53	219
288860106	217	36.2	0.012	0.327	0.514	220
10566449	438	58.4	1.50E-09	0.325	0.593	545
22135348	262	40.6	0.00015	0.325	0.615	234
21314465	455	60.2	4.60E-10	0.324	0.602	550
21743	215	35.9	0.014	0.324	0.525	219

5381325	781	93.1	4.80E-20	0.323	0.667	495
224036293	472	61.9	1.30E-10	0.319	0.597	536
169969	289	43.4	5.00E-05	0.317	0.583	545
199732457	472	61.9	1.40E-10	0.316	0.602	561
71084277	230	37.5	0.0047	0.313	0.542	227
22090	203	34.7	0.028	0.311	0.529	257
3703107	446	59.3	8.20E-10	0.308	0.593	536
806556	463	61	2.70E-10	0.307	0.545	600
4249568	461	60.8	3.20E-10	0.307	0.545	600
18641	461	60.8	3.10E-10	0.305	0.54	600
21751	183	32.7	0.1	0.304	0.51	253
732706	468	61.5	1.90E-10	0.302	0.544	599
5712199	425	57.1	3.70E-09	0.299	0.598	542
21779	173	31.7	0.21	0.272	0.502	239
158251953	146	28.9	1	0.239	0.574	251
187766749	163	30.6	0.25	0.237	0.612	152
187766751	163	30.6	0.25	0.237	0.612	152
187766747	163	30.6	0.25	0.237	0.612	152
410067729	167	31	0.24	0.195	0.526	435
187766755	173	31.6	0.15	0.194	0.527	459

Matches with 80-mer FASTA for Cruciferin BnC2

Hit #	NCBI-gi	Species	Best %ID	# Hits > 35%	Full-align E-val	Full-align %ID	Full-align len
1	62240390	Sinapis alba	72.80 %	417of417	1.90E-54	57.50 %	503
2	62240392	Sinapis alba	70.00 %	417of417	3.70E-14	55.90 %	515
3	5.58E+08	Corylus avellana	63.70 %	355of417	4.50E-23	41.60 %	548
4	18479082	Corylus avellana	63.70 %	377of417	4.80E-23	42.30 %	548
5	112677	Cucurbita maxima	60.50 %	244of417	1.20E-16	38.80 %	482

6	5.24E+08	Prunus dulcis	60.00 %	162of417	2.80E-07	46.40 %	194
7	25991543	Anacardium occidentale	60.00 %	360of417	6.50E-17	42.40 %	498
8	3.07E+08	Prunus dulcis	60.00 %	402of417	2.70E-15	44.40 %	500
9	1.13E+09	Juglans nigra	58.79 %	339of417	5.20E-21	41.20 %	532
10	1.1E+08	Pistacia vera	58.70 %	370of417	2.00E-26	41.30 %	499
11	1.56E+08	Pistacia vera	58.70 %	370of417	3.20E-26	41.10 %	499
12	1.59E+08	Carya illinoensis	57.52 %	342of417	2.50E-22	40.20 %	540
13	1.59E+08	Carya illinoensis	57.52 %	342of417	3.60E-22	40.20 %	540
14	56788031	Juglans regia	57.52 %	341of417	1.50E-22	41.10 %	509
15	2.59E+08	Prunus dulcis	56.30 %	399of417	3.50E-15	43.30 %	522
16	1.1E+08	Pistacia vera	56.30 %	351of417	7.80E-20	40.40 %	508
17	3.07E+08	Prunus dulcis	56.30 %	401of417	5.50E-15	42.60 %	545
18	1.13E+08	Fagopyrum tataricum	53.80 %	256of417	2.60E-21	38.40 %	485
19	736319	Triticum aestivum	53.60 %	78of417	0.0015	33.90 %	230
20	1.53E+09	Bertholletia excelsa	52.50 %	344of417	1.80E-18	41.70 %	463
21	30313867	Bertholletia excelsa	52.50 %	356of417	9.80E-19	39.80 %	502
22	13183173	Sesamum indicum	51.90 %	321of417	1.40E-25	38.60 %	523
23	82469930	Actinidia chinensis	51.29 %	336of417	1.60E-27	40.40 %	505
24	71084277	Triticum aestivum	51.25 %	80of417	0.0047	31.30 %	227
25	2.89E+08	Triticum aestivum	51.20 %	81of417	0.012	32.70 %	220

26	21743	Triticum aestivum	50.60 %	64of417	0.014	32.40 %	219
27	5.09E+08	Triticum aestivum	50.60 %	73of417	0.013	32.90 %	219
28	170743	Triticum aestivum	50.60 %	73of417	0.014	32.90 %	219
29	169973	Glycine max	50.02 %	251of417	8.00E-17	35.60 %	520
30	18615	Glycine max	50.02 %	255of417	5.60E-17	35.60 %	520
31	29839255	Fagopyrum esculentum	50.00 %	229of417	1.10E-11	36.90 %	477
32	29839254	Fagopyrum esculentum	50.00 %	216of417	4.10E-12	36.60 %	505
33	29839419	Fagopyrum esculentum	50.00 %	236of417	5.60E-12	37.40 %	484
34	18639	Glycine max	48.78 %	262of417	5.80E-12	36.00 %	509
35	18609	Glycine max	47.50 %	222of417	5.50E-18	35.20 %	512
36	218265	Glycine max	47.50 %	222of417	5.50E-18	35.20 %	512
37	806556	Glycine soja	46.30 %	228of417	2.70E-10	30.70 %	600
38	169971	Glycine max	46.30 %	108of417	1.20E-09	36.70 %	188
39	18641	Glycine max	46.30 %	227of417	3.10E-10	30.50 %	600
40	732706	Glycine max	46.30 %	215of417	1.90E-10	30.20 %	599
41	10566449	Glycine max	46.30 %	239of417	1.50E-09	32.50 %	545
42	21751	Triticum aestivum	46.30 %	67of417	0.1	30.40 %	253
43	4249568	Glycine max	46.30 %	228of417	3.20E-10	30.70 %	600
44	22090	Triticum aestivum	46.26 %	64of417	0.028	31.10 %	257
45	21779	Triticum aestivum	45.10 %	62of417	0.21	27.20 %	239

46	3.12E+08	Arachis hypogaea	45.05 %	155of417	4.70E-11	33.00 %	521
47	1.12E+08	Arachis hypogaea	45.05 %	162of417	2.90E-11	33.20 %	521
48	5.85E+08	Fagopyrum esculentum	43.80 %	200of417	8.90E-19	33.90 %	454
49	2E+08	Arachis hypogaea	43.80 %	162of417	1.40E-10	31.60 %	561
50	2.24E+08	Arachis hypogaea	43.80 %	158of417	1.30E-10	31.90 %	536
51	5381325	Sesamum indicum	43.80 %	172of417	4.80E-20	32.30 %	495
52	21314465	Arachis hypogaea	43.80 %	190of417	4.60E-10	32.40 %	550
53	5.85E+08	Fagopyrum esculentum	43.80 %	200of417	8.90E-19	33.90 %	454
54	22135348	Arachis hypogaea	43.78 %	43of417	0.00015	32.50 %	234
55	3703107	Arachis hypogaea	43.40 %	100of417	8.20E-10	30.80 %	536
56	169969	Glycine max	42.54 %	196of417	5.00E-05	31.70 %	545
57	5712199	Arachis hypogaea	40.90 %	79of417	3.70E-09	29.90 %	542
58	170732	Triticum aestivum	37.54 %	18of417	5.5	39.00 %	77
59	170730	Triticum aestivum	37.54 %	18of417	5.2	39.00 %	77
60	21926	Triticum turgidum subsp. durum	35.02 %	23of417	8.3	43.10 %	65
61	75219081	Triticum aestivum	35.02 %	23of417	7.5	25.10 %	183

Full-length FASTA matches for Cruciferin CRU1

NCBI-GI	opt	bits	E(2233)	%_id	%_sim	alen
62240390	3155	725.4	2.50E-210	0.916	0.969	510
62240392	2382	549.2	2.80E-157	0.901	0.948	523
170734	134	37.1	0.0019	0.5	0.611	54
508732627	134	37	0.0024	0.5	0.611	54

21773	134	36.9	0.0026	0.5	0.611	54
523916668	373	91.8	4.90E-20	0.497	0.692	195
62550933	116	32.8	0.049	0.493	0.638	69
886967	118	33.3	0.029	0.489	0.644	45
897811	157	43.4	1.00E-05	0.484	0.641	64
307159114	672	159.4	5.80E-40	0.47	0.713	513
258588247	829	195.2	1.00E-50	0.463	0.731	521
1706883247	109	31.3	0.11	0.463	0.611	54
25991543	1150	268.4	8.30E-73	0.462	0.723	487
307159112	835	196.6	4.20E-51	0.461	0.733	536
18479082	991	232.1	7.70E-62	0.456	0.697	528
557792009	994	232.8	4.80E-62	0.455	0.699	528
508732623	109	31.2	0.17	0.455	0.576	66
158998782	985	230.8	1.90E-61	0.447	0.686	535
56788031	1018	238.3	1.10E-63	0.445	0.685	533
158998780	991	232.1	7.50E-62	0.445	0.688	535
1126299828	980	229.6	4.30E-61	0.433	0.69	533
13183173	1008	236	5.00E-63	0.421	0.688	478
156001070	891	209.4	5.10E-55	0.419	0.702	513
110349085	887	208.5	9.50E-55	0.417	0.702	513
82469930	1097	256.3	3.60E-69	0.414	0.71	500
1534918238	947	222.2	6.50E-59	0.411	0.683	467
110349083	831	195.7	7.00E-51	0.411	0.707	518
170730	162	43.3	3.10E-05	0.405	0.582	79
170732	162	43.3	3.40E-05	0.405	0.582	79
169971	492	118.7	5.20E-28	0.398	0.754	191
30313867	954	223.7	2.40E-59	0.397	0.674	506
112677	891	209.4	5.20E-55	0.373	0.649	504
18615	769	181.5	1.30E-46	0.371	0.642	517
169973	765	180.6	2.40E-46	0.371	0.64	517
29839419	737	174.2	2.20E-44	0.368	0.747	486
929075511	126	34.8	0.054	0.364	0.606	66
929097893	122	33.9	0.1	0.364	0.621	66
18639	661	156.9	3.10E-39	0.36	0.645	516

113200131	732	173.1	4.60E-44	0.356	0.675	523
18609	520	124.8	1.50E-29	0.354	0.64	503
218265	520	124.8	1.50E-29	0.354	0.64	503
5381325	875	205.7	6.20E-54	0.35	0.68	503
288860106	309	76.6	8.40E-15	0.348	0.527	224
1079717942	130	35.8	0.027	0.348	0.545	66
22135348	290	72.7	3.30E-14	0.347	0.599	242
29839254	712	168.5	1.20E-42	0.346	0.683	540
10566449	505	121.4	1.70E-28	0.344	0.626	546
584592116	500	120.2	3.30E-28	0.343	0.667	496
29839255	690	163.5	3.40E-41	0.342	0.703	512
27806257	123	34.2	0.081	0.342	0.526	76
584592120	500	120.2	3.30E-28	0.341	0.667	496
71084277	248	62.7	1.20E-10	0.341	0.512	252
112380623	481	115.9	7.60E-27	0.335	0.634	516
169969	307	76.2	6.70E-15	0.335	0.619	546
312233065	473	114.1	2.70E-26	0.333	0.632	516
736319	258	65	2.60E-11	0.333	0.541	207
21314465	460	111.1	2.20E-25	0.332	0.595	548
224036293	482	116.1	6.40E-27	0.327	0.611	511
199732457	482	116.1	6.70E-27	0.327	0.611	511
929312453	123	34.2	0.08	0.325	0.558	77
929244458	123	34.2	0.08	0.325	0.558	77
170736	121	34.1	0.016	0.323	0.542	155
3703107	463	111.8	1.30E-25	0.321	0.607	511
21743	270	67.7	3.90E-12	0.318	0.509	267
4249568	517	124.1	2.90E-29	0.317	0.597	580
806556	515	123.6	3.90E-29	0.317	0.597	580
5712199	433	104.9	1.60E-23	0.317	0.603	511
508732625	266	66.8	7.00E-12	0.315	0.513	267
170743	266	66.8	7.20E-12	0.315	0.513	267
18641	517	124.1	2.90E-29	0.314	0.593	580
732706	508	122	1.20E-28	0.313	0.596	579
508732621	140	38.4	0.0009	0.31	0.527	203

22090	248	62.7	1.10E-10	0.306	0.536	222
21751	231	58.9	1.40E-09	0.305	0.492	266
226437844	93	28.1	0.57	0.304	0.696	56
1063270	119	33.6	0.025	0.301	0.523	193
21757	150	40.6	0.0002	0.298	0.528	178
170738	133	36.7	0.0033	0.298	0.49	208
1137166044	184	48.4	9.20E-07	0.297	0.523	195
170708	118	33.3	0.031	0.295	0.525	200
170740	144	39.2	0.00052	0.294	0.514	177
170710	142	38.8	0.00078	0.294	0.506	235
208605346	156	42	7.00E-05	0.292	0.469	209
170718	181	47.7	1.60E-06	0.291	0.474	234
21765	179	47.2	2.20E-06	0.291	0.474	234
73912496	186	48.7	1.10E-06	0.29	0.484	217
170712	164	43.8	2.20E-05	0.29	0.514	183
21673	188	49.3	5.20E-07	0.288	0.481	243
1079717864	123	34.2	0.086	0.284	0.505	95
170724	172	45.6	6.20E-06	0.283	0.483	240
170702	114	32.4	0.061	0.282	0.521	188
1304264	133	36.8	0.0025	0.281	0.517	178
170728	117	33.4	0.019	0.28	0.506	164
75317968	148	40.1	0.00037	0.279	0.524	208
170722	168	44.8	9.90E-06	0.276	0.53	185
21930	176	46.6	3.10E-06	0.275	0.573	171
170726	120	33.8	0.022	0.275	0.495	204
21755	174	46.1	4.30E-06	0.274	0.536	179
170720	168	44.7	1.10E-05	0.274	0.525	179
886963	111	31.8	0.067	0.274	0.555	146
208605348	157	42.1	8.10E-05	0.272	0.508	250
288709	123	34.5	0.014	0.271	0.479	192
1708280	123	34.5	0.014	0.271	0.479	192
21761	157	42.2	6.40E-05	0.268	0.52	179
21779	188	49	1.30E-06	0.266	0.476	418
75219081	166	44.3	1.50E-05	0.266	0.561	173

208605344	108	31	0.2	0.264	0.455	231
21783	147	39.9	0.00041	0.262	0.504	240
283476402	143	39	0.00057	0.259	0.487	228
886965	126	35.2	0.0075	0.259	0.496	228
21926	160	42.9	4.10E-05	0.241	0.557	174
187766751	172	45.5	8.30E-06	0.228	0.559	347
335331566	124	34.6	0.016	0.221	0.505	321
187766747	172	45.5	8.30E-06	0.219	0.565	347
187766749	172	45.5	8.30E-06	0.219	0.559	347
410067729	171	45.2	1.30E-05	0.219	0.556	347
108743976	104	30	0.49	0.216	0.56	334
187766755	175	46.2	6.60E-06	0.214	0.554	370

Matches with 80-mer FASTA for Cruciferin CRU1

Hit #	NCBI-gi	Species	Best %ID	# Hits > 35%	Full-align E-val	Full-align %ID	Full-align len
1	gi 62240390	Sinapis alba	98.80 %	430of430	2.50E-210	91.60 %	510
2	gi 62240392	Sinapis alba	97.50 %	430of430	2.80E-157	90.10 %	523
3	gi 158998780	Carya illinoensis	65.00 %	355of430	7.50E-62	44.50 %	535
4	gi 158998782	Carya illinoensis	65.00 %	358of430	1.90E-61	44.70 %	535
5	gi 56788031	Juglans regia	63.79 %	368of430	1.10E-63	44.50 %	533
6	gi 1126299828	Juglans nigra	63.79 %	373of430	4.30E-61	43.30 %	533
7	gi 523916668	Prunus dulcis	60.04 %	168of430	4.90E-20	49.70 %	195
8	gi 307159114	Prunus dulcis	60.04 %	425of430	5.80E-40	47.00 %	513
9	gi 25991543	Anacardium occidentale	60.04 %	379of430	8.30E-73	46.20 %	487
10	gi 557792009	Corylus avellana	58.79 %	391of430	4.80E-62	45.50 %	528

11	gi 18479082	Corylus avellana	58.79 %	394of430	7.70E-62	45.60 %	528
12	gi 307159112	Prunus dulcis	58.40 %	430of430	4.20E-51	46.10 %	536
13	gi 258588247	Prunus dulcis	58.40 %	423of430	1.00E-50	46.30 %	521
14	gi 82469930	Actinidia chinensis	56.30 %	327of430	3.60E-69	41.40 %	500
15	gi 736319	Triticum aestivum	56.26 %	70of430	2.60E-11	33.30 %	207
16	gi 288860106	Triticum aestivum	55.60 %	79of430	8.40E-15	34.80 %	224
17	gi 110349085	Pistacia vera	55.00 %	359of430	9.50E-55	41.70 %	513
18	gi 156001070	Pistacia vera	55.00 %	361of430	5.10E-55	41.90 %	513
19	gi 110349083	Pistacia vera	55.00 %	345of430	7.00E-51	41.10 %	518
20	gi 71084277	Triticum aestivum	55.00 %	75of430	1.20E-10	34.10 %	252
21	gi 113200131	Fagopyrum tataricum	53.80 %	255of430	4.60E-44	35.60 %	523
22	gi 13183173	Sesamum indicum	53.80 %	343of430	5.00E-63	42.10 %	478
23	gi 112677	Cucurbita maxima	52.50 %	273of430	5.20E-55	37.30 %	504
24	gi 1534918238	Bertholletia excelsa	52.50 %	309of430	6.50E-59	41.10 %	467
25	gi 30313867	Bertholletia excelsa	52.50 %	309of430	2.40E-59	39.70 %	506
26	gi 29839254	Fagopyrum esculentum	51.25 %	240of430	1.20E-42	34.60 %	540
27	gi 10566449	Glycine max	51.25 %	264of430	1.70E-28	34.40 %	546
28	gi 18639	Glycine max	51.20 %	267of430	3.10E-39	36.00 %	516
29	gi 18641	Glycine max	50.60 %	239of430	2.90E-29	31.40 %	580
30	gi 4249568	Glycine max	50.60 %	256of430	2.90E-29	31.70 %	580

31	gi 806556	Glycine soja	50.60 %	256of430	3.90E-29	31.70 %	580
32	gi 22090	Triticum aestivum	50.02 %	69of430	1.10E-10	30.60 %	222
33	gi 29839419	Fagopyrum esculentum	50.00 %	236of430	2.20E-44	36.80 %	486
34	gi 170743	Triticum aestivum	50.00 %	70of430	7.20E-12	31.50 %	267
35	gi 21743	Triticum aestivum	50.00 %	69of430	3.90E-12	31.80 %	267
36	gi 18615	Glycine max	50.00 %	267of430	1.30E-46	37.10 %	517
37	gi 29839255	Fagopyrum esculentum	50.00 %	213of430	3.40E-41	34.20 %	512
38	gi 508732625	Triticum aestivum	50.00 %	70of430	7.00E-12	31.50 %	267
39	gi 169969	Glycine max	50.00 %	242of430	6.70E-15	33.50 %	546
40	gi 169973	Glycine max	50.00 %	267of430	2.40E-46	37.10 %	517
41	gi 732706	Glycine max	49.40 %	237of430	1.20E-28	31.30 %	579
42	gi 21751	Triticum aestivum	48.78 %	71of430	1.40E-09	30.50 %	266
43	gi 218265	Glycine max	48.70 %	244of430	1.50E-29	35.40 %	503
44	gi 18609	Glycine max	48.70 %	244of430	1.50E-29	35.40 %	503
45	gi 5381325	Sesamum indicum	48.10 %	238of430	6.20E-54	35.00 %	503
46	gi 199732457	Arachis hypogaea	47.50 %	187of430	6.70E-27	32.70 %	511
47	gi 224036293	Arachis hypogaea	47.50 %	187of430	6.40E-27	32.70 %	511
48	gi 5712199	Arachis hypogaea	47.50 %	145of430	1.60E-23	31.70 %	511
49	gi 22135348	Arachis hypogaea	47.50 %	77of430	3.30E-14	34.70 %	242
50	gi 169971	Glycine max	47.50 %	116of430	5.20E-28	39.80 %	191

51	gi 21314465	Arachis hypogaea	47.50 %	219of430	2.20E-25	33.20 %	548
52	gi 21779	Triticum aestivum	47.50 %	68of430	1.30E-06	26.60 %	418
53	gi 3703107	Arachis hypogaea	46.90 %	174of430	1.30E-25	32.10 %	511
54	gi 584592120	Fagopyrum esculentum	46.30 %	218of430	3.30E-28	34.10 %	496
55	gi 584592116	Fagopyrum esculentum	46.30 %	228of430	3.30E-28	34.30 %	496
56	gi 112380623	Arachis hypogaea	46.22 %	186of430	7.60E-27	33.50 %	516
57	gi 312233065	Arachis hypogaea	46.22 %	170of430	2.70E-26	33.30 %	516
58	gi 21930	Triticum turgidum subsp. durum	43.80 %	35of430	3.10E-06	27.50 %	171
59	gi 170738	Triticum aestivum	43.79 %	20of430	0.0033	29.80 %	208
60	gi 170730	Triticum aestivum	43.71 %	38of430	3.10E-05	40.50 %	79
61	gi 170732	Triticum aestivum	43.71 %	38of430	3.40E-05	40.50 %	79
62	gi 75219081	Triticum aestivum	42.52 %	37of430	1.50E-05	26.60 %	173
63	gi 62550933	Triticum aestivum	42.52 %	29of430	0.049	49.30 %	69
64	gi 283476402	Triticum aestivum	41.29 %	36of430	0.00057	25.90 %	228
65	gi 170736	Triticum aestivum	41.28 %	35of430	0.016	32.30 %	155
66	gi 508732621	Triticum aestivum	41.28 %	33of430	0.0009	31.00 %	203
67	gi 1137166044	Triticum monococcum subsp. aegilopoides	40.01 %	39of430	9.20E-07	29.70 %	195
68	gi 897811	Triticum aestivum	40.01 %	38of430	1.00E-05	48.40 %	64
69	gi 208605346	Triticum aestivum	40.00 %	21of430	7.00E-05	29.20 %	209
70	gi 208605348	Triticum aestivum	40.00 %	21of430	8.10E-05	27.20 %	250

71	gi 21757	Triticum aestivum	39.99 %	35of430	0.0002	29.80 %	178
72	gi 21761	Triticum aestivum	38.79 %	14of430	6.40E-05	26.80 %	179
73	gi 21926	Triticum turgidum subsp. durum	38.78 %	36of430	4.10E-05	24.10 %	174
74	gi 170724	Triticum aestivum	38.76 %	18of430	6.20E-06	28.30 %	240
75	gi 170708	Triticum aestivum	38.75 %	19of430	0.031	29.50 %	200
76	gi 73912496	Triticum aestivum	38.72 %	27of430	1.10E-06	29.00 %	217
77	gi 1063270	Triticum aestivum	38.72 %	1of430	0.025	30.10 %	193
78	gi 170702	Triticum aestivum	38.72 %	17of430	0.061	28.20 %	188
79	gi 508732623	Triticum aestivum	37.54 %	16of430	0.17	45.50 %	66
80	gi 21673	Triticum aestivum	37.52 %	30of430	5.20E-07	28.80 %	243
81	gi 170740	Triticum urartu	37.52 %	30of430	0.00052	29.40 %	177
82	gi 21783	Triticum aestivum	37.00 %	3of430	0.00041	26.20 %	240
83	gi 75317968	Triticum aestivum	36.27 %	2of430	0.00037	27.90 %	208
84	gi 170726	Triticum aestivum	36.24 %	10of430	0.022	27.50 %	204
85	gi 21765	Triticum aestivum	35.04 %	3of430	2.20E-06	29.10 %	234
86	gi 170718	Triticum aestivum	35.04 %	3of430	1.60E-06	29.10 %	234
87	gi 170712	Triticum aestivum	35.02 %	15of430	2.20E-05	29.00 %	183

Full-length FASTA matches for Cruciferin CRU4

NCBI-GI	opt	bits	E(2233)	%_id	%_sim	alen
62240390	1388	219.9	3.30E-58	0.55	0.781	471
62240392	1355	215	1.10E-56	0.533	0.768	482

110349085	1303	207.2	2.10E-54	0.456	0.743	471
82469930	1300	206.7	2.80E-54	0.425	0.755	461
156001070	1296	206.1	4.30E-54	0.454	0.743	471
30313867	1240	197.7	1.50E-51	0.43	0.728	463
1534918238	1228	195.9	4.60E-51	0.437	0.744	430
13183173	1218	194.4	1.60E-50	0.421	0.701	489
5381325	1072	172.4	5.90E-44	0.362	0.75	428
110349083	1043	168	1.30E-42	0.449	0.728	481
584592120	1013	163.6	2.70E-41	0.366	0.745	415
584592116	1012	163.4	3.00E-41	0.366	0.745	415
25991543	983	159	6.30E-40	0.459	0.735	464
112677	889	144.9	1.20E-35	0.409	0.691	447
307159112	673	112.3	8.70E-26	0.409	0.664	538
158998782	668	111.6	1.30E-25	0.433	0.701	515
158998780	667	111.5	1.50E-25	0.431	0.697	515
258588247	666	111.3	1.70E-25	0.414	0.672	515
56788031	663	110.9	2.20E-25	0.433	0.709	499
1126299828	662	110.7	2.50E-25	0.439	0.703	501
557792009	658	110.1	3.80E-25	0.441	0.719	501
18479082	654	109.5	5.80E-25	0.444	0.715	502
29839419	643	107.8	1.90E-24	0.378	0.701	482
307159114	640	107.4	2.40E-24	0.449	0.707	492
29839254	639	107.2	3.10E-24	0.355	0.655	507
113200131	636	106.8	3.80E-24	0.416	0.748	452
29839255	589	99.7	5.00E-22	0.397	0.737	448
169973	546	93.3	4.30E-20	0.381	0.671	486
18615	545	93.1	4.80E-20	0.381	0.671	486
18639	530	90.9	2.20E-19	0.386	0.675	471
218265	524	90	4.20E-19	0.375	0.682	472
18609	524	90	4.20E-19	0.375	0.682	472
224036293	510	87.8	1.90E-18	0.348	0.635	488
199732457	510	87.8	2.00E-18	0.351	0.635	504
112380623	498	86	6.70E-18	0.347	0.655	490
169969	498	86	6.80E-18	0.347	0.633	502

21314465	496	85.7	8.80E-18	0.349	0.629	518
3703107	492	85.1	1.20E-17	0.339	0.643	487
312233065	491	85	1.40E-17	0.345	0.653	490
10566449	491	85	1.40E-17	0.357	0.643	502
169971	479	83.5	1.90E-17	0.396	0.728	202
732706	484	83.9	3.30E-17	0.327	0.599	544
18641	484	83.9	3.30E-17	0.325	0.594	545
4249568	484	83.9	3.30E-17	0.328	0.598	545
806556	484	83.9	3.30E-17	0.327	0.6	545
22135348	464	81.2	8.00E-17	0.384	0.664	211
5712199	472	82.1	1.10E-16	0.333	0.623	504
523916668	299	56.5	1.80E-09	0.48	0.68	175
71084277	154	34.1	0.045	0.285	0.527	207
13183177	150	33.6	0.046	0.226	0.532	359
158251953	145	33	0.056	0.228	0.58	312
410067729	145	32.9	0.06	0.206	0.513	433
187766755	144	32.8	0.063	0.201	0.512	457
187766747	141	32.4	0.067	0.205	0.54	346
187766751	141	32.4	0.067	0.21	0.536	347
187766749	141	32.4	0.067	0.21	0.539	347
9967357	140	32.1	0.12	0.24	0.558	416
18536	140	32.1	0.14	0.24	0.558	416
288860106	136	31.4	0.32	0.294	0.512	170
9967361	128	30.3	0.43	0.232	0.582	323
21914823	127	30.2	0.46	0.235	0.566	327
21666498	126	30	0.5	0.232	0.566	327
980951548	127	30.1	0.53	0.233	0.521	305
15425631	126	30	0.61	0.236	0.581	322
736319	127	30	0.8	0.328	0.557	174
980951568	123	29.5	0.8	0.228	0.54	324
980951518	123	29.5	0.81	0.217	0.51	314
169950562	123	29.5	0.81	0.217	0.51	314

Matches with 80-mer FASTA for Cruciferin CRU4

Hit #	NCBI-gi	Species	Best %ID	# Hits > 35%	Full-align E-val	Full-align %ID	Full-align len
1	62240390	Sinapis alba	70.01 %	386of386	3.30E-58	55.00 %	471
2	62240392	Sinapis alba	65.03 %	386of386	1.10E-56	53.30 %	482
3	110349085	Pistacia vera	61.30 %	379of386	2.10E-54	45.60 %	471
4	156001070	Pistacia vera	61.30 %	375of386	4.30E-54	45.40 %	471
5	110349083	Pistacia vera	60.04 %	365of386	1.30E-42	44.90 %	481
6	25991543	Anacardium occidentale	59.30 %	377of386	6.30E-40	45.90 %	464
7	18479082	Corylus avellana	58.76 %	386of386	5.80E-25	44.40 %	502
8	557792009	Corylus avellana	58.76 %	386of386	3.80E-25	44.10 %	501
9	112677	Cucurbita maxima	58.00 %	330of386	1.20E-35	40.90 %	447
10	307159112	Prunus dulcis	57.52 %	380of386	8.70E-26	40.90 %	538
11	258588247	Prunus dulcis	57.52 %	367of386	1.70E-25	41.40 %	515
12	113200131	Fagopyrum tataricum	56.30 %	297of386	3.80E-24	41.60 %	452
13	307159114	Prunus dulcis	56.29 %	386of386	2.40E-24	44.90 %	492
14	523916668	Prunus dulcis	56.29 %	126of386	1.80E-09	48.00 %	175
15	158998780	Carya illinoensis	55.60 %	386of386	1.50E-25	43.10 %	515
16	158998782	Carya illinoensis	55.60 %	386of386	1.30E-25	43.30 %	515
17	1126299828	Juglans nigra	55.60 %	379of386	2.50E-25	43.90 %	501
18	29839254	Fagopyrum esculentum	55.00 %	233of386	3.10E-24	35.50 %	507

19	29839255	Fagopyrum esculentum	55.00 %	293of38 6	5.00E-22	39.70 %	448
20	13183173	Sesamum indicum	54.99 %	369of38 6	1.60E-50	42.10 %	489
21	56788031	Juglans regia	54.30 %	386of38 6	2.20E-25	43.30 %	499
22	29839419	Fagopyrum esculentum	53.80 %	229of38 6	1.90E-24	37.80 %	482
23	82469930	Actinidia chinensis	52.54 %	348of38 6	2.80E-54	42.50 %	461
24	10566449	Glycine max	52.50 %	262of38 6	1.40E-17	35.70 %	502
25	30313867	Bertholletia excelsa	52.50 %	386of38 6	1.50E-51	43.00 %	463
26	1534918238	Bertholletia excelsa	52.50 %	379of38 6	4.60E-51	43.70 %	430
27	169971	Glycine max	51.25 %	120of38 6	1.90E-17	39.60 %	202
28	169973	Glycine max	51.20 %	256of38 6	4.30E-20	38.10 %	486
29	18639	Glycine max	51.20 %	303of38 6	2.20E-19	38.60 %	471
30	806556	Glycine soja	51.20 %	237of38 6	3.30E-17	32.70 %	545
31	4249568	Glycine max	51.20 %	237of38 6	3.30E-17	32.80 %	545
32	732706	Glycine max	51.20 %	226of38 6	3.30E-17	32.70 %	544
33	18615	Glycine max	51.20 %	256of38 6	4.80E-20	38.10 %	486
34	18641	Glycine max	51.20 %	226of38 6	3.30E-17	32.50 %	545
35	169969	Glycine max	50.00 %	244of38 6	6.80E-18	34.70 %	502
36	21314465	Arachis hypogaea	48.78 %	232of38 6	8.80E-18	34.90 %	518
37	224036293	Arachis hypogaea	48.75 %	204of38 6	1.90E-18	34.80 %	488
38	199732457	Arachis hypogaea	48.75 %	215of38 6	2.00E-18	35.10 %	504

39	5381325	Sesamum indicum	48.70 %	189of386	5.90E-44	36.20 %	428
40	18609	Glycine max	48.70 %	254of386	4.20E-19	37.50 %	472
41	218265	Glycine max	48.70 %	254of386	4.20E-19	37.50 %	472
42	312233065	Arachis hypogaea	47.50 %	190of386	1.40E-17	34.50 %	490
43	112380623	Arachis hypogaea	47.50 %	192of386	6.70E-18	34.70 %	490
44	5712199	Arachis hypogaea	47.50 %	188of386	1.10E-16	33.30 %	504
45	3703107	Arachis hypogaea	46.30 %	211of386	1.20E-17	33.90 %	487
46	22135348	Arachis hypogaea	45.03 %	100of386	8.00E-17	38.40 %	211
47	584592116	Fagopyrum esculentum	43.80 %	203of386	3.00E-41	36.60 %	415
48	584592120	Fagopyrum esculentum	43.80 %	203of386	2.70E-41	36.60 %	415
49	736319	Triticum aestivum	39.00 %	12of386	0.8	32.80 %	174
50	21743	Triticum aestivum	37.80 %	7of386	2.5	29.50 %	173
51	170743	Triticum aestivum	37.80 %	7of386	2.4	28.60 %	185
52	508732625	Triticum aestivum	37.80 %	7of386	2.3	28.60 %	185
53	208605346	Triticum aestivum	35.40 %	1of386	29	25.80 %	93
54	208605348	Triticum aestivum	35.40 %	1of386	39	26.40 %	91
55	73912496	Triticum aestivum	35.40 %	1of386	64	34.50 %	84

3.7 Sequence matches from FARRP Celiac Disease Database

There were no exact peptide matches for any of the query sequences from in the FARRP Celiac Disease 1013 peptide dataset.

Some matches were found with the full-length FASTA search against the 72 protein sequences in the Celiac Disease dataset of the FARRP database. However, none of the

matches had the required sequence identity ($> 45\%$) or E-value ($< 10^{-16}$) needed for labelling the proteins as having potential to elicit Celiac Disease.

Full-length FASTA matches for Napin-3

NCBI-GI	opt	z-sc	E(72)	%_id	%_sim	alen
166557	138	82.2	0.65	0.297	0.532	111
75107166	132	80.8	0.77	0.32	0.53	100

Full-length FASTA matches for Napin-B

NCBI-GI	opt	z-sc	E(72)	%_id	%_sim	alen
166557	140	87.6	0.32	0.24	0.486	183
436409542	134	83.1	0.58	0.256	0.518	168

Full-length FASTA matches for Napin embryo-specific

NCBI-GI	opt	z-sc	E(72)	%_id	%_sim	alen
170710	146	81	0.75	0.285	0.5	158
7209247	141	79.7	0.89	0.28	0.523	132

Full-length FASTA matches for Cruciferin BnC1

NCBI-GI	opt	z-sc	E(72)	%_id	%_sim	alen
736319	207	101	0.059	0.3	0.529	227
117650782	200	97.8	0.088	0.333	0.519	156
118772075	152	92.3	0.18	0.364	0.533	165
146261042	174	85.9	0.41	0.304	0.571	217
294719862	168	80.9	0.76	0.333	0.549	162
114842970	168	80.7	0.78	0.311	0.541	183
262070686	134	79.6	0.9	0.395	0.579	76

Full-length FASTA matches for Cruciferin BnC2

NCBI-GI	opt	z-sc	E(72)	%_id	%_sim	alen
118772075	236	123.1	0.0034	0.326	0.548	221
294719862	251	109.3	0.02	0.317	0.561	230
736319	247	107.3	0.026	0.339	0.552	230
114842970	244	105.9	0.031	0.315	0.51	241
146261040	226	98.8	0.077	0.314	0.559	229

117650782	204	88.6	0.29	0.329	0.534	219
146261042	189	83.6	0.54	0.296	0.534	277
21751	183	83.1	0.58	0.304	0.51	253
1699227	43	78.9	0.99	0.375	0.625	16

Full-length FASTA matches for Cruciferin CRU1

NCBI-GI	opt	z-sc	E(72)	%_id	%_sim	alen
117650782	264	118.5	0.0061	0.341	0.52	223
146261040	260	116.9	0.0076	0.331	0.5	272
294719862	258	115.3	0.0093	0.315	0.516	254
736319	258	115.1	0.0095	0.336	0.528	214
146261042	251	113.4	0.012	0.335	0.533	227
114842970	251	111.6	0.015	0.329	0.516	219
118772075	211	108.8	0.021	0.314	0.51	245
21751	231	105.2	0.034	0.305	0.492	266
7209265	188	94.8	0.13	0.288	0.481	243
7209261	178	90.4	0.23	0.299	0.549	144
21765	179	89.2	0.27	0.291	0.474	234
73912496	186	88	0.31	0.29	0.484	217
7209263	168	85.8	0.41	0.274	0.525	179
7209259	168	85.7	0.41	0.272	0.539	180
26185821	169	85.7	0.42	0.273	0.57	172
7209247	168	85.5	0.43	0.283	0.527	184
7209257	166	84.4	0.49	0.303	0.549	142
147883552	160	80.8	0.77	0.283	0.5	180

Full-length FASTA matches for Cruciferin CRU4

NCBI-GI	opt	z-sc	E(72)	%_id	%_sim	alen
118772075	145	95.6	0.12	0.294	0.504	228
146261040	150	87.3	0.34	0.282	0.512	209

3.8 BLASTP matches from the NCBI-NR database

For all the query sequences together, there were 265 distinct NCBI protein hits found with the E-value < 0.05 criterion. Of these, ten proteins were part of the FARRP allergenic

protein database and were already found in during the searches against the FARRP database (NCBI Accession numbers: AAX77383.1, AAX77384.1, CAA62908.1, CAA62909.1, CAA62910.1, CAA62911.1, CAA62912.1, P15322.2, P80207.1, and P80208.1). Of the rest of the 255 NCBI proteins that were homologous to the query proteins, majority were hypothetical proteins, or proteins without a known function assigned. In particular, the BLAST search results against NCBI did not find similarity with any allergens not already found in the search against the FARRP database.

Query sequence	Hit (NCBI) Accession	% identity	E-value	NCBI Gene Title	Update date
2SS3_BRANA	CAG7884491.1	63.281	7.19E-45	unnamed protein product [Brassica rapa]	13/07/2021
2SS3_BRANA	CAG7887786.1	87.234	4.60E-78	unnamed protein product [Brassica rapa]	13/07/2021
2SS3_BRANA	CAG7887789.1	82.979	8.26E-66	unnamed protein product [Brassica rapa]	13/07/2021
2SS3_BRANA	CAG7887791.1	77.857	1.19E-58	unnamed protein product [Brassica rapa]	13/07/2021
2SS3_BRANA	CAG7898617.1	55.97	1.56E-38	unnamed protein product [Brassica rapa]	13/07/2021
2SS3_BRANA	P15322.2	81.944	2.87E-62	RecName: Full=Allergen Sin a 1; AltName: Full=Allergen Sin a I; AltName: Allergen=Sin a 1; Contains: RecName: Full=Allergen Sin a 1 small chain; Contains: RecName: Full=Allergen Sin a 1 large chain; Flags: Precursor	02/06/2021
2SS3_BRANA	P38057.1	84.496	3.48E-59	RecName: Full=Trypsin inhibitor; AltName: Full=TISA; Contains: RecName: Full=Trypsin inhibitor small chain; Contains: RecName: Full=Trypsin inhibitor large chain	02/06/2021
2SS3_BRANA	P80207.1	82.171	1.77E-49	RecName: Full=Allergen Bra j 1-E; AltName: Full=Allergen Bra j I; AltName: Allergen=Bra j 1-E; Contains: RecName: Full=Allergen Bra j 1-E small chain; Contains: RecName: Full=Allergen Bra j 1-E large chain	02/06/2021
2SS3_BRANA	WP_159188241.1	79.104	1.55E-56	alpha-amylase inhibitor/seed storage family protein, partial [Klebsiella pneumoniae]	16/05/2021
2SS3_BRANA	P01091.1	74.627	2.30E-52	RecName: Full=Napin-1; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin-1 small chain; Contains: RecName: Full=Napin-1 large chain; Flags: Precursor	07/04/2021
2SS3_BRANA	P80208.1	100	6.38E-82	RecName: Full=Napin-3; AltName: Full=1.7S seed storage protein; AltName: Full=Napin BrIII; AltName: Full=Napin nIII; Contains: RecName: Full=Napin-3 small chain; Contains: RecName: Full=Napin-3 large chain	07/04/2021
2SS3_BRANA	KAG5414099.1	77.372	5.11E-60	hypothetical protein IGI04_001666 [Brassica rapa subsp. trilocularis]	30/03/2021
2SS3_BRANA	KAG5414099.1	80.469	7.56E-59	hypothetical protein IGI04_001666 [Brassica rapa subsp. trilocularis]	30/03/2021
2SS3_BRANA	KAG5414099.1	84.722	1.85E-71	hypothetical protein IGI04_001666 [Brassica rapa subsp. trilocularis]	30/03/2021
2SS3_BRANA	KAG5414331.1	80.142	1.48E-62	hypothetical protein IGI04_001898 [Brassica rapa subsp. trilocularis]	30/03/2021
2SS3_BRANA	CAF2150198.1	77.465	2.61E-59	unnamed protein product [Brassica napus]	05/03/2021
2SS3_BRANA	CAF2245202.1	55.97	2.16E-38	unnamed protein product [Brassica napus]	05/03/2021

2SS3_BRANA	KAG2248443.1	78.417	2.83E-59	hypothetical protein Bca52824_088071 [Brassica carinata]	29/01/2021
2SS3_BRANA	KAG2248447.1	84.722	1.11E-75	hypothetical protein Bca52824_088075 [Brassica carinata]	29/01/2021
2SS3_BRANA	KAG2248450.1	86.525	3.31E-77	hypothetical protein Bca52824_088078 [Brassica carinata]	29/01/2021
2SS3_BRANA	KAG2248451.1	77.477	9.06E-42	hypothetical protein Bca52824_088079 [Brassica carinata]	29/01/2021
2SS3_BRANA	KAG2248453.1	82.883	2.28E-52	hypothetical protein Bca52824_088081 [Brassica carinata]	29/01/2021
2SS3_BRANA	KAG2319316.1	62.308	2.92E-42	hypothetical protein Bca52824_012529 [Brassica carinata]	29/01/2021
2SS3_BRANA	KAG2239066.1	78.014	7.02E-62	hypothetical protein Bca52824_089926 [Brassica carinata]	28/01/2021
2SS3_BRANA	KAG2245378.1	73.427	2.47E-55	hypothetical protein Bca52824_092802 [Brassica carinata]	28/01/2021
2SS3_BRANA	KAG2245379.1	72.917	1.30E-56	hypothetical protein Bca52824_092803 [Brassica carinata]	28/01/2021
2SS3_BRANA	KAG2245382.1	75	4.17E-58	hypothetical protein Bca52824_092806 [Brassica carinata]	28/01/2021
2SS3_BRANA	XP_009131634. 2	73.427	1.54E-53	napin embryo-specific [Brassica rapa]	07/12/2020
2SS3_BRANA	XP_009137640. 1	63.281	3.31E-44	napin-B-like [Brassica rapa]	07/12/2020
2SS3_BRANA	XP_009143128. 1	86.525	1.35E-77	napin [Brassica rapa]	07/12/2020
2SS3_BRANA	XP_009143139. 1	77.622	3.83E-59	napin-like [Brassica rapa]	07/12/2020
2SS3_BRANA	XP_009143149. 2	84.722	1.49E-75	napin-like [Brassica rapa]	07/12/2020
2SS3_BRANA	XP_009143159. 1	82.979	9.64E-66	napin-like [Brassica rapa]	07/12/2020
2SS3_BRANA	XP_009143171. 2	82.979	7.09E-66	napin-like [Brassica rapa]	07/12/2020
2SS3_BRANA	XP_009145761. 1	80.851	1.36E-62	napin-B [Brassica rapa]	07/12/2020
2SS3_BRANA	XP_033133133. 1	55.97	1.04E-38	napin-B-like [Brassica rapa]	07/12/2020
2SS3_BRANA	P09893.1	65.517	4.19E-47	RecName: Full=Napin embryo- specific; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin embryo-specific small chain; Contains: RecName: Full=Napin embryo-specific large chain; Flags: Precursor	02/12/2020
2SS3_BRANA	KAF8093902.1	76.429	1.20E-59	hypothetical protein N665_0375s0019 [Sinapis alba]	22/10/2020
2SS3_BRANA	KAF8094368.1	60.769	7.85E-45	hypothetical protein N665_0365s0054 [Sinapis alba]	22/10/2020
2SS3_BRANA	KAF8114599.1	78.472	9.09E-62	hypothetical protein N665_0036s0123 [Sinapis alba]	22/10/2020
2SS3_BRANA	KAF8114601.1	77.778	1.29E-60	hypothetical protein N665_0036s0125 [Sinapis alba]	22/10/2020
2SS3_BRANA	KAF8114602.1	82.639	1.21E-64	hypothetical protein N665_0036s0126 [Sinapis alba]	22/10/2020

2SS3_BRANA	KAF8114603.1	81.25	1.64E-64	hypothetical protein N665_0036s0127 [Sinapis alba]	22/10/2020
2SS3_BRANA	KAF8114604.1	77.193	2.23E-40	hypothetical protein N665_0036s0128 [Sinapis alba]	22/10/2020
2SS3_BRANA	KAF8114606.1	81.944	4.08E-65	hypothetical protein N665_0036s0130 [Sinapis alba]	22/10/2020
2SS3_BRANA	KAF3489542.1	85.496	2.31E-68	hypothetical protein F2Q69_00052222 [Brassica cretica]	24/03/2020
2SS3_BRANA	KAF3501402.1	94.444	1.22E-64	hypothetical protein F2Q69_00041762, partial [Brassica cretica]	24/03/2020
2SS3_BRANA	KAF3505652.1	77.477	1.90E-40	hypothetical protein F2Q69_00008109 [Brassica cretica]	24/03/2020
2SS3_BRANA	KAF3533809.1	71.942	3.12E-49	hypothetical protein DY000_02038913 [Brassica cretica]	24/03/2020
2SS3_BRANA	KAF3533809.1	79.433	1.10E-59	hypothetical protein DY000_02038913 [Brassica cretica]	24/03/2020
2SS3_BRANA	KAF3540886.1	84.028	3.39E-74	hypothetical protein F2Q69_00019398 [Brassica cretica]	24/03/2020
2SS3_BRANA	KAF3543628.1	71.918	6.03E-50	hypothetical protein DY000_02000764 [Brassica cretica]	24/03/2020
2SS3_BRANA	KAF3601452.1	82.27	1.49E-64	hypothetical protein F2Q69_00034152 [Brassica cretica]	24/03/2020
2SS3_BRANA	KAF3601461.1	76.429	6.08E-62	hypothetical protein F2Q69_00034154 [Brassica cretica]	24/03/2020
2SS3_BRANA	KAF2550171.1	95.455	1.93E-50	hypothetical protein F2Q68_00033573 [Brassica cretica]	21/02/2020
2SS3_BRANA	P01090.2	80.282	4.59E-63	RecName: Full=Napin-2; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin-2 small chain; Contains: RecName: Full=Napin-2 large chain; Flags: Precursor	11/12/2019
2SS3_BRANA	P27740.1	78.723	1.54E-61	RecName: Full=Napin-B; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin-B small chain; Contains: RecName: Full=Napin-B large chain; Flags: Precursor	11/12/2019
2SS3_BRANA	VDC75280.1	82.979	1.44E-65	unnamed protein product [Brassica rapa]	16/11/2018
2SS3_BRANA	VDD49875.1	80.42	5.93E-62	unnamed protein product [Brassica oleracea]	16/11/2018
2SS3_BRANA	VDD49877.1	80.42	6.00E-62	unnamed protein product [Brassica oleracea]	16/11/2018
2SS3_BRANA	RID78909.1	80.702	1.02E-50	hypothetical protein BRARA_A01689 [Brassica rapa]	13/09/2018
2SS3_BRANA	XP_013681845.1	72.603	4.78E-51	napin embryo-specific-like [Brassica napus]	04/10/2017
2SS3_BRANA	XP_013688210.1	80.282	5.41E-63	napin-2 [Brassica napus]	04/10/2017
2SS3_BRANA	XP_013708806.1	55.97	1.70E-38	napin-B-like [Brassica napus]	04/10/2017
2SS3_BRANA	XP_013729988.1	72.603	7.48E-51	napin embryo-specific [Brassica napus]	04/10/2017
2SS3_BRANA	XP_013738176.1	63.281	7.49E-45	napin-B-like [Brassica napus]	04/10/2017

2SS3_BRANA	XP_013742722. 1	76.429	1.27E-61	napin-like [Brassica napus]	04/10/2017
2SS3_BRANA	XP_013743463. 1	79.433	1.54E-61	napin-B [Brassica napus]	04/10/2017
2SS3_BRANA	CDY29278.1	78.723	1.12E-63	BnaC01g19300D [Brassica napus]	12/07/2017
2SS3_BRANA	CDY29280.1	80.142	1.23E-64	BnaC01g19320D [Brassica napus]	12/07/2017
2SS3_BRANA	CDY29281.1	77.857	2.49E-62	BnaC01g19330D [Brassica napus]	12/07/2017
2SS3_BRANA	XP_018453699. 1	76.642	4.08E-57	PREDICTED: napin-2 [Raphanus sativus]	04/10/2016
2SS3_BRANA	XP_018469054. 1	74.815	2.38E-59	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SS3_BRANA	XP_018469273. 1	74.126	1.83E-56	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SS3_BRANA	XP_018469298. 1	79.412	3.53E-59	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SS3_BRANA	XP_018469309. 1	74.648	1.72E-56	PREDICTED: napin [Raphanus sativus]	04/10/2016
2SS3_BRANA	XP_018469312. 1	75.735	3.11E-60	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SS3_BRANA	XP_018481895. 1	76.119	3.36E-55	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SS3_BRANA	CAA62908.1	78.472	2.46E-60	allergen sin a 1.0108, partial [Sinapis alba]	14/07/2016
2SS3_BRANA	CAA62909.1	80.556	6.89E-61	allergen sin a 1.0104, partial [Sinapis alba]	14/07/2016
2SS3_BRANA	CAA62910.1	81.944	7.79E-64	allergen sin a 1.0105, partial [Sinapis alba]	14/07/2016
2SS3_BRANA	CAA62911.1	79.167	7.20E-61	allergen sin a 1.0106, partial [Sinapis alba]	14/07/2016
2SS3_BRANA	CAA62912.1	81.944	1.38E-63	allergen sin a 1.0107, partial [Sinapis alba]	14/07/2016
2SS3_BRANA	XP_013588759. 1	75.714	4.61E-61	PREDICTED: napin-like [Brassica oleracea var. oleracea]	25/08/2015
2SS3_BRANA	XP_013589349. 1	81.119	7.55E-62	PREDICTED: napin-like [Brassica oleracea var. oleracea]	25/08/2015
2SS3_BRANA	XP_013592507. 1	86.525	3.10E-77	PREDICTED: napin [Brassica oleracea var. oleracea]	25/08/2015
2SS3_BRANA	XP_013621452. 1	80.142	3.26E-62	PREDICTED: napin-2 [Brassica oleracea var. oleracea]	25/08/2015
2SS3_BRANA	XP_013623354. 1	72.414	4.10E-51	PREDICTED: napin embryo-specific [Brassica oleracea var. oleracea]	25/08/2015
2SS3_BRANA	CAA32653.1	78.873	3.91E-61	unnamed protein product [Brassica napus]	18/04/2005
2SS3_BRANA	CAA46171.1	78.723	5.68E-61	2S storage protein [Brassica rapa]	18/04/2005
2SS3_BRANA	CAA46172.1	78.723	1.21E-60	2S storage protein [Brassica oleracea]	18/04/2005
2SS3_BRANA	CAA46173.1	75.887	7.74E-62	2S storage protein [Brassica nigra]	18/04/2005
2SS3_BRANA	CAA52813.1	84.173	1.90E-58	2S storage prepropeptide [Brassica carinata]	18/04/2005
2SS3_BRANA	AAS68184.1	86.517	8.60E-38	napin 1.7S, partial [Brassica napus var. napus]	24/03/2004
2SS3_BRANA	AAB37413.1	88.636	1.76E-37	napin large chain L1a=calmodulin antagonist/calcium-dependent protein kinase substrate [Brassica	03/12/1996

				napus=kohlrabi, rapifera, seeds, Peptide, 86 aa]	
2SS3_BRANA	AAB37414.1	82.558	2.90E-37	napin large chain L1B=calmodulin antagonist/calcium-dependent protein kinase substrate [Brassica napus=kohlrabi, rapifera, seeds, Peptide, 88 aa]	03/12/1996
2SS3_BRANA	AAB37416.1	97.727	9.31E-52	napin large chain L2A=calmodulin antagonist/calcium-dependent protein kinase substrate [Brassica napus=kohlrabi, rapifera, seeds, Peptide, 88 aa]	03/12/1996
2SS3_BRANA	AAA63470.1	78.832	1.95E-56	storage protein, partial [Raphanus sativus]	07/03/1995
2SS3_BRANA	AAA63471.1	72.028	4.69E-52	storage protein, partial [Raphanus sativus]	07/03/1995
2SS3_BRANA	AAA63472.1	74.126	3.42E-56	storage protein, partial [Raphanus sativus]	07/03/1995
2SS3_BRANA	AAA32998.1	72.727	9.85E-54	napin [Brassica rapa subsp. oleifera]	12/08/1993
2SS3_BRANA	CAA46174.1	78.873	1.03E-61	2S storage protein [Brassica juncea]	06/08/1992
2SS3_BRANA	AAA33006.1	80.282	5.53E-63	napin prepropeptide [Brassica napus]	07/11/1984
2SSB_BRANA	CAG7884491.1	72.571	3.71E-81	unnamed protein product [Brassica rapa]	13/07/2021
2SSB_BRANA	CAG7887786.1	90	2.16E-111	unnamed protein product [Brassica rapa]	13/07/2021
2SSB_BRANA	CAG7887789.1	91.667	6.88E-114	unnamed protein product [Brassica rapa]	13/07/2021
2SSB_BRANA	CAG7887791.1	88.827	1.55E-107	unnamed protein product [Brassica rapa]	13/07/2021
2SSB_BRANA	CAG7898617.1	65.169	1.93E-71	unnamed protein product [Brassica rapa]	13/07/2021
2SSB_BRANA	KAG7546006.1	68	5.74E-70	Bifunctional inhibitor/plant lipid transfer protein/seed storage helical domain [Arabidopsis suecica]	12/07/2021
2SSB_BRANA	P15322.2	86.897	1.57E-70	RecName: Full=Allergen Sin a 1; AltName: Full=Allergen Sin a 1; AltName: Allergen=Sin a 1; Contains: RecName: Full=Allergen Sin a 1 small chain; Contains: RecName: Full=Allergen Sin a 1 large chain; Flags: Precursor	02/06/2021
2SSB_BRANA	WP_159188241.1	96.774	3.78E-107	alpha-amylase inhibitor/seed storage family protein, partial [Klebsiella pneumoniae]	16/05/2021
2SSB_BRANA	P01091.1	91.791	8.03E-72	RecName: Full=Napin-1; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin-1 small chain; Contains: RecName: Full=Napin-1 large chain; Flags: Precursor	07/04/2021
2SSB_BRANA	KAG5414099.1	87.222	6.79E-100	hypothetical protein IGI04_001666 [Brassica rapa subsp. trilobularis]	30/03/2021
2SSB_BRANA	KAG5414099.1	87.654	7.85E-89	hypothetical protein IGI04_001666 [Brassica rapa subsp. trilobularis]	30/03/2021
2SSB_BRANA	KAG5414099.1	85.03	2.61E-89	hypothetical protein IGI04_001666 [Brassica rapa subsp. trilobularis]	30/03/2021
2SSB_BRANA	KAG5414331.1	98.876	4.09E-127	hypothetical protein IGI04_001898 [Brassica rapa subsp. trilobularis]	30/03/2021

2SSB_BRANA	CAF2120161.1	92.424	1.39E-74	unnamed protein product [Brassica napus]	05/03/2021
2SSB_BRANA	CAF2150198.1	88.462	9.13E-106	unnamed protein product [Brassica napus]	05/03/2021
2SSB_BRANA	KAG2248443.1	85.165	7.65E-101	hypothetical protein Bca52824_088071 [Brassica carinata]	29/01/2021
2SSB_BRANA	KAG2248447.1	87.978	9.65E-111	hypothetical protein Bca52824_088075 [Brassica carinata]	29/01/2021
2SSB_BRANA	KAG2248450.1	89.444	4.26E-110	hypothetical protein Bca52824_088078 [Brassica carinata]	29/01/2021
2SSB_BRANA	KAG2319316.1	72.626	7.09E-77	hypothetical protein Bca52824_012529 [Brassica carinata]	29/01/2021
2SSB_BRANA	KAG2239066.1	93.82	6.02E-112	hypothetical protein Bca52824_089926 [Brassica carinata]	28/01/2021
2SSB_BRANA	KAG2245378.1	75.758	3.98E-96	hypothetical protein Bca52824_092802 [Brassica carinata]	28/01/2021
2SSB_BRANA	KAG2245379.1	79.781	1.06E-90	hypothetical protein Bca52824_092803 [Brassica carinata]	28/01/2021
2SSB_BRANA	KAG2245382.1	76.768	2.58E-98	hypothetical protein Bca52824_092806 [Brassica carinata]	28/01/2021
2SSB_BRANA	XP_009131634.2	86.885	1.39E-97	napin embryo-specific [Brassica rapa]	07/12/2020
2SSB_BRANA	XP_009137640.1	73.714	3.16E-84	napin-B-like [Brassica rapa]	07/12/2020
2SSB_BRANA	XP_009143128.1	91.111	3.13E-112	napin [Brassica rapa]	07/12/2020
2SSB_BRANA	XP_009143139.1	86.885	1.34E-105	napin-like [Brassica rapa]	07/12/2020
2SSB_BRANA	XP_009143149.2	87.978	2.62E-108	napin-like [Brassica rapa]	07/12/2020
2SSB_BRANA	XP_009143159.1	90	6.31E-110	napin-like [Brassica rapa]	07/12/2020
2SSB_BRANA	XP_009143171.2	91.111	5.53E-113	napin-like [Brassica rapa]	07/12/2020
2SSB_BRANA	XP_009145761.1	98.324	3.09E-125	napin-B [Brassica rapa]	07/12/2020
2SSB_BRANA	XP_033133133.1	65.363	6.26E-70	napin-B-like [Brassica rapa]	07/12/2020
2SSB_BRANA	P09893.1	82.162	8.56E-89	RecName: Full=Napin embryo-specific; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin embryo-specific small chain; Contains: RecName: Full=Napin embryo-specific large chain; Flags: Precursor	02/12/2020
2SSB_BRANA	KAF8079776.1	68.539	1.12E-73	hypothetical protein N665_1002s0026 [Sinapis alba]	22/10/2020
2SSB_BRANA	KAF8093902.1	92.697	4.80E-110	hypothetical protein N665_0375s0019 [Sinapis alba]	22/10/2020
2SSB_BRANA	KAF8094368.1	71.508	4.00E-81	hypothetical protein N665_0365s0054 [Sinapis alba]	22/10/2020
2SSB_BRANA	KAF8114599.1	86.339	4.45E-100	hypothetical protein N665_0036s0123 [Sinapis alba]	22/10/2020
2SSB_BRANA	KAF8114601.1	85.792	3.46E-99	hypothetical protein N665_0036s0125 [Sinapis alba]	22/10/2020

2SSB_BRANA	KAF8114602.1	88.525	1.83E-100	hypothetical protein N665_0036s0126 [Sinapis alba]	22/10/2020
2SSB_BRANA	KAF8114603.1	89.071	4.58E-110	hypothetical protein N665_0036s0127 [Sinapis alba]	22/10/2020
2SSB_BRANA	KAF8114606.1	89.071	8.74E-111	hypothetical protein N665_0036s0130 [Sinapis alba]	22/10/2020
2SSB_BRANA	KAF3489542.1	87.218	1.20E-73	hypothetical protein F2Q69_00052222 [Brassica cretica]	24/03/2020
2SSB_BRANA	KAF3501402.1	81.461	4.83E-93	hypothetical protein F2Q69_00041762, partial [Brassica cretica]	24/03/2020
2SSB_BRANA	KAF3533809.1	97.26	3.17E-87	hypothetical protein DY000_02038913 [Brassica cretica]	24/03/2020
2SSB_BRANA	KAF3533809.1	96.951	4.19E-100	hypothetical protein DY000_02038913 [Brassica cretica]	24/03/2020
2SSB_BRANA	KAF3540886.1	88.485	6.68E-97	hypothetical protein F2Q69_00019398 [Brassica cretica]	24/03/2020
2SSB_BRANA	KAF3543628.1	82.703	1.33E-90	hypothetical protein DY000_02000764 [Brassica cretica]	24/03/2020
2SSB_BRANA	KAF3601452.1	88.333	9.09E-110	hypothetical protein F2Q69_00034152 [Brassica cretica]	24/03/2020
2SSB_BRANA	KAF3601461.1	85.556	3.36E-105	hypothetical protein F2Q69_00034154 [Brassica cretica]	24/03/2020
2SSB_BRANA	CAA7025286.1	66.286	7.54E-70	unnamed protein product [Microthlaspi erraticum]	18/01/2020
2SSB_BRANA	CAA7025291.1	66.857	4.87E-70	unnamed protein product [Microthlaspi erraticum]	18/01/2020
2SSB_BRANA	CAA7025292.1	65.714	1.80E-68	unnamed protein product [Microthlaspi erraticum]	18/01/2020
2SSB_BRANA	CAA7025293.1	67.416	2.22E-68	unnamed protein product [Microthlaspi erraticum]	18/01/2020
2SSB_BRANA	P01090.2	96.629	1.91E-124	RecName: Full=Napin-2; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin-2 small chain; Contains: RecName: Full=Napin-2 large chain; Flags: Precursor	11/12/2019
2SSB_BRANA	P27740.1	100	6.97E-129	RecName: Full=Napin-B; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin-B small chain; Contains: RecName: Full=Napin-B large chain; Flags: Precursor	11/12/2019
2SSB_BRANA	VVB11364.1	63.889	3.25E-68	unnamed protein product [Arabis nemorensis]	06/08/2019
2SSB_BRANA	VVB15957.1	68.889	2.87E-75	unnamed protein product [Arabis nemorensis]	06/08/2019
2SSB_BRANA	VDC75280.1	80	3.30E-107	unnamed protein product [Brassica rapa]	16/11/2018
2SSB_BRANA	VDD49875.1	86.885	1.42E-109	unnamed protein product [Brassica oleracea]	16/11/2018
2SSB_BRANA	VDD49877.1	86.339	5.65E-109	unnamed protein product [Brassica oleracea]	16/11/2018
2SSB_BRANA	XP_006413103.1	68.306	6.90E-72	napin [Eutrema salsugineum]	26/02/2018
2SSB_BRANA	XP_024004324.1	69.318	6.52E-69	napin-2-like [Eutrema salsugineum]	26/02/2018

2SSB_BRANA	XP_013681845.1	83.243	9.17E-92	napin embryo-specific-like [Brassica napus]	04/10/2017
2SSB_BRANA	XP_013688210.1	97.191	3.76E-125	napin-2 [Brassica napus]	04/10/2017
2SSB_BRANA	XP_013708806.1	65.73	2.20E-72	napin-B-like [Brassica napus]	04/10/2017
2SSB_BRANA	XP_013729988.1	84.324	1.54E-93	napin embryo-specific [Brassica napus]	04/10/2017
2SSB_BRANA	XP_013738176.1	72.571	3.35E-81	napin-B-like [Brassica napus]	04/10/2017
2SSB_BRANA	XP_013742722.1	85.556	5.39E-105	napin-like [Brassica napus]	04/10/2017
2SSB_BRANA	XP_013743463.1	99.438	7.54E-128	napin-B [Brassica napus]	04/10/2017
2SSB_BRANA	CDY29278.1	89.888	8.36E-111	BnaC01g19300D [Brassica napus]	12/07/2017
2SSB_BRANA	CDY29280.1	91.011	4.15E-112	BnaC01g19320D [Brassica napus]	12/07/2017
2SSB_BRANA	CDY29281.1	89.326	2.32E-110	BnaC01g19330D [Brassica napus]	12/07/2017
2SSB_BRANA	XP_018449981.1	69.274	3.32E-73	PREDICTED: napin-B-like [Raphanus sativus]	04/10/2016
2SSB_BRANA	XP_018453699.1	88.268	4.15E-103	PREDICTED: napin-2 [Raphanus sativus]	04/10/2016
2SSB_BRANA	XP_018469054.1	81.111	4.64E-97	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SSB_BRANA	XP_018469273.1	85.792	6.53E-98	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SSB_BRANA	XP_018469298.1	85	3.73E-103	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SSB_BRANA	XP_018469309.1	86.264	9.16E-98	PREDICTED: napin [Raphanus sativus]	04/10/2016
2SSB_BRANA	XP_018469312.1	85.393	2.27E-103	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SSB_BRANA	XP_018481895.1	83.523	1.99E-97	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SSB_BRANA	CAA62908.1	84.138	4.29E-70	allergen sin a 1.0108, partial [Sinapis alba]	14/07/2016
2SSB_BRANA	CAA62909.1	86.207	3.05E-69	allergen sin a 1.0104, partial [Sinapis alba]	14/07/2016
2SSB_BRANA	CAA62910.1	87.586	1.44E-80	allergen sin a 1.0105, partial [Sinapis alba]	14/07/2016
2SSB_BRANA	CAA62911.1	84.828	1.23E-70	allergen sin a 1.0106, partial [Sinapis alba]	14/07/2016
2SSB_BRANA	CAA62912.1	87.586	8.88E-72	allergen sin a 1.0107, partial [Sinapis alba]	14/07/2016
2SSB_BRANA	XP_013588759.1	85	2.47E-104	PREDICTED: napin-like [Brassica oleracea var. oleracea]	25/08/2015
2SSB_BRANA	XP_013589349.1	87.432	1.69E-109	PREDICTED: napin-like [Brassica oleracea var. oleracea]	25/08/2015
2SSB_BRANA	XP_013592507.1	89.444	4.45E-110	PREDICTED: napin [Brassica oleracea var. oleracea]	25/08/2015
2SSB_BRANA	XP_013621452.1	97.753	4.23E-126	PREDICTED: napin-2 [Brassica oleracea var. oleracea]	25/08/2015

2SSB_BRANA	XP_013623354.1	83.243	3.20E-92	PREDICTED: napin embryo-specific [Brassica oleracea var. oleracea]	25/08/2015
2SSB_BRANA	KFK43625.1	67.222	3.25E-70	hypothetical protein AALP_AA1G150300 [Arabis alpina]	21/08/2014
2SSB_BRANA	CAA32653.1	96.067	6.86E-112	unnamed protein product [Brassica napus]	18/04/2005
2SSB_BRANA	CAA46171.1	88.764	5.79E-107	2S storage protein [Brassica rapa]	18/04/2005
2SSB_BRANA	CAA46172.1	96.067	7.06E-123	2S storage protein [Brassica oleracea]	18/04/2005
2SSB_BRANA	CAA46173.1	88.764	1.71E-109	2S storage protein [Brassica nigra]	18/04/2005
2SSB_BRANA	CAA52813.1	73.889	1.40E-76	2S storage prepropeptide [Brassica carinata]	18/04/2005
2SSB_BRANA	AAS68184.1	97.17	3.31E-68	napin 1.7S, partial [Brassica napus var. napus]	24/03/2004
2SSB_BRANA	AAA63470.1	82.39	6.55E-85	storage protein, partial [Raphanus sativus]	07/03/1995
2SSB_BRANA	AAA63471.1	81.579	2.46E-70	storage protein, partial [Raphanus sativus]	07/03/1995
2SSB_BRANA	AAA63472.1	85.057	5.89E-91	storage protein, partial [Raphanus sativus]	07/03/1995
2SSB_BRANA	AAA32998.1	85.792	1.04E-96	napin [Brassica rapa subsp. oleifera]	12/08/1993
2SSB_BRANA	CAA46174.1	94.944	2.01E-110	2S storage protein [Brassica juncea]	06/08/1992
2SSB_BRANA	AAA33006.1	96.629	1.18E-124	napin prepropeptide [Brassica napus]	07/11/1984
2SSE_BRANA	CAG7884491.1	68.681	1.36E-73	unnamed protein product [Brassica rapa]	13/07/2021
2SSE_BRANA	CAG7887786.1	87.027	2.74E-100	unnamed protein product [Brassica rapa]	13/07/2021
2SSE_BRANA	CAG7887789.1	87.568	7.43E-101	unnamed protein product [Brassica rapa]	13/07/2021
2SSE_BRANA	CAG7887791.1	84.324	6.79E-97	unnamed protein product [Brassica rapa]	13/07/2021
2SSE_BRANA	KAG7617507.1	60.428	8.27E-61	Bifunctional inhibitor/plant lipid transfer protein/seed storage helical domain superfamily [Arabidopsis thaliana x Arabidopsis arenosa]	13/07/2021
2SSE_BRANA	KAG7621966.1	60.963	5.06E-61	Bifunctional inhibitor/plant lipid transfer protein/seed storage helical domain [Arabidopsis suecica]	13/07/2021
2SSE_BRANA	KAG7546006.1	61.878	8.18E-63	Bifunctional inhibitor/plant lipid transfer protein/seed storage helical domain [Arabidopsis suecica]	12/07/2021
2SSE_BRANA	P15322.2	84.459	7.29E-65	RecName: Full=Allergen Sin a 1; AltName: Full=Allergen Sin a I; AltName: Allergen=Sin a 1; Contains: RecName: Full=Allergen Sin a 1 small chain; Contains: RecName: Full=Allergen Sin a 1 large chain; Flags: Precursor	02/06/2021
2SSE_BRANA	WP_159188241.1	84.568	4.30E-84	alpha-amylase inhibitor/seed storage family protein, partial [Klebsiella pneumoniae]	16/05/2021
2SSE_BRANA	P01091.1	76.596	8.13E-62	RecName: Full=Napin-1; AltName: Full=1.7S seed storage protein;	07/04/2021

				Contains: RecName: Full=Napin-1 small chain; Contains: RecName: Full=Napin-1 large chain; Flags: Precursor	
2SSE_BRANA	KAG5414099.1	84.699	1.33E-90	hypothetical protein IGI04_001666 [Brassica rapa subsp. trilocularis]	30/03/2021
2SSE_BRANA	KAG5414099.1	81.977	1.28E-79	hypothetical protein IGI04_001666 [Brassica rapa subsp. trilocularis]	30/03/2021
2SSE_BRANA	KAG5414099.1	85.207	5.89E-80	hypothetical protein IGI04_001666 [Brassica rapa subsp. trilocularis]	30/03/2021
2SSE_BRANA	KAG5414331.1	83.243	2.79E-99	hypothetical protein IGI04_001898 [Brassica rapa subsp. trilocularis]	30/03/2021
2SSE_BRANA	CAF2120161.1	97.727	1.62E-81	unnamed protein product [Brassica napus]	05/03/2021
2SSE_BRANA	CAF2150198.1	87.568	1.67E-97	unnamed protein product [Brassica napus]	05/03/2021
2SSE_BRANA	KAG2248443.1	86.486	1.63E-97	hypothetical protein Bca52824_088071 [Brassica carinata]	29/01/2021
2SSE_BRANA	KAG2248447.1	85.484	3.47E-101	hypothetical protein Bca52824_088075 [Brassica carinata]	29/01/2021
2SSE_BRANA	KAG2248450.1	86.486	7.19E-99	hypothetical protein Bca52824_088078 [Brassica carinata]	29/01/2021
2SSE_BRANA	KAG2319316.1	63.636	3.81E-67	hypothetical protein Bca52824_012529 [Brassica carinata]	29/01/2021
2SSE_BRANA	KAG2239066.1	82.703	2.15E-99	hypothetical protein Bca52824_089926 [Brassica carinata]	28/01/2021
2SSE_BRANA	KAG2245378.1	75.124	4.92E-91	hypothetical protein Bca52824_092802 [Brassica carinata]	28/01/2021
2SSE_BRANA	KAG2245379.1	82.162	1.01E-85	hypothetical protein Bca52824_092803 [Brassica carinata]	28/01/2021
2SSE_BRANA	KAG2245382.1	76.119	1.22E-91	hypothetical protein Bca52824_092806 [Brassica carinata]	28/01/2021
2SSE_BRANA	XP_009131634.2	95.161	2.82E-102	napin embryo-specific [Brassica rapa]	07/12/2020
2SSE_BRANA	XP_009137640.1	68.132	2.09E-75	napin-B-like [Brassica rapa]	07/12/2020
2SSE_BRANA	XP_009143128.1	87.027	1.93E-100	napin [Brassica rapa]	07/12/2020
2SSE_BRANA	XP_009143139.1	85.484	1.17E-95	napin-like [Brassica rapa]	07/12/2020
2SSE_BRANA	XP_009143149.2	85.484	9.69E-99	napin-like [Brassica rapa]	07/12/2020
2SSE_BRANA	XP_009143159.1	88.108	6.36E-99	napin-like [Brassica rapa]	07/12/2020
2SSE_BRANA	XP_009143171.2	88.108	1.15E-101	napin-like [Brassica rapa]	07/12/2020
2SSE_BRANA	XP_009145761.1	84.865	6.02E-100	napin-B [Brassica rapa]	07/12/2020
2SSE_BRANA	P09893.1	100	2.65E-134	RecName: Full=Napin embryo-specific; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin embryo-specific small chain; Contains: RecName: Full=Napin embryo-specific large chain; Flags: Precursor	02/12/2020

2SSE_BRANA	KAF8079776.1	61.828	8.44E-64	hypothetical protein N665_1002s0026 [Sinapis alba]	22/10/2020
2SSE_BRANA	KAF8093902.1	80.108	1.78E-96	hypothetical protein N665_0375s0019 [Sinapis alba]	22/10/2020
2SSE_BRANA	KAF8094368.1	64.706	4.14E-73	hypothetical protein N665_0365s0054 [Sinapis alba]	22/10/2020
2SSE_BRANA	KAF8114599.1	82.796	2.50E-90	hypothetical protein N665_0036s0123 [Sinapis alba]	22/10/2020
2SSE_BRANA	KAF8114601.1	82.796	9.24E-92	hypothetical protein N665_0036s0125 [Sinapis alba]	22/10/2020
2SSE_BRANA	KAF8114602.1	86.022	1.62E-94	hypothetical protein N665_0036s0126 [Sinapis alba]	22/10/2020
2SSE_BRANA	KAF8114603.1	83.333	2.07E-99	hypothetical protein N665_0036s0127 [Sinapis alba]	22/10/2020
2SSE_BRANA	KAF8114606.1	84.409	6.55E-102	hypothetical protein N665_0036s0130 [Sinapis alba]	22/10/2020
2SSE_BRANA	KAF3489542.1	84.672	8.75E-63	hypothetical protein F2Q69_00052222 [Brassica cretica]	24/03/2020
2SSE_BRANA	KAF3501402.1	79.235	4.07E-86	hypothetical protein F2Q69_00041762, partial [Brassica cretica]	24/03/2020
2SSE_BRANA	KAF3533809.1	78.919	1.05E-86	hypothetical protein DY000_02038913 [Brassica cretica]	24/03/2020
2SSE_BRANA	KAF3533809.1	79.747	2.98E-74	hypothetical protein DY000_02038913 [Brassica cretica]	24/03/2020
2SSE_BRANA	KAF3540886.1	86.31	1.26E-87	hypothetical protein F2Q69_00019398 [Brassica cretica]	24/03/2020
2SSE_BRANA	KAF3543628.1	96.237	1.73E-128	hypothetical protein DY000_02000764 [Brassica cretica]	24/03/2020
2SSE_BRANA	KAF3601452.1	88.108	7.68E-101	hypothetical protein F2Q69_00034152 [Brassica cretica]	24/03/2020
2SSE_BRANA	KAF3601461.1	82.703	2.12E-95	hypothetical protein F2Q69_00034154 [Brassica cretica]	24/03/2020
2SSE_BRANA	CAA7025286.1	61.17	3.02E-61	unnamed protein product [Microthlaspi erraticum]	18/01/2020
2SSE_BRANA	CAA7025291.1	62.234	1.32E-62	unnamed protein product [Microthlaspi erraticum]	18/01/2020
2SSE_BRANA	CAA7025292.1	60.106	3.28E-62	unnamed protein product [Microthlaspi erraticum]	18/01/2020
2SSE_BRANA	CAA7025293.1	62.304	8.41E-64	unnamed protein product [Microthlaspi erraticum]	18/01/2020
2SSE_BRANA	P01090.2	82.703	5.94E-98	RecName: Full=Napin-2; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin-2 small chain; Contains: RecName: Full=Napin-2 large chain; Flags: Precursor	11/12/2019
2SSE_BRANA	P27740.1	82.162	2.17E-98	RecName: Full=Napin-B; AltName: Full=1.7S seed storage protein; Contains: RecName: Full=Napin-B small chain; Contains: RecName: Full=Napin-B large chain; Flags: Precursor	11/12/2019
2SSE_BRANA	VVB11364.1	58.511	1.52E-60	unnamed protein product [Arabis nemorensis]	06/08/2019
2SSE_BRANA	VVB15957.1	62.234	3.60E-63	unnamed protein product [Arabis nemorensis]	06/08/2019

2SSE_BRANA	NP_194447.1	60.428	1.09E-60	seed storage albumin 4 [Arabidopsis thaliana]	14/02/2019
2SSE_BRANA	VDC75280.1	76.19	9.47E-96	unnamed protein product [Brassica rapa]	16/11/2018
2SSE_BRANA	VDC83563.1	59.239	2.14E-61	unnamed protein product [Brassica rapa]	16/11/2018
2SSE_BRANA	VDD49875.1	86.559	2.75E-101	unnamed protein product [Brassica oleracea]	16/11/2018
2SSE_BRANA	VDD49877.1	86.022	1.25E-100	unnamed protein product [Brassica oleracea]	16/11/2018
2SSE_BRANA	XP_006413103.1	64.211	3.70E-64	napin [Eutrema salsugineum]	26/02/2018
2SSE_BRANA	XP_024004324.1	63.736	8.57E-62	napin-2-like [Eutrema salsugineum]	26/02/2018
2SSE_BRANA	XP_006285843.1	60	6.65E-63	2S seed storage protein 2 [Capsella rubella]	02/02/2018
2SSE_BRANA	XP_013681845.1	96.774	1.25E-129	napin embryo-specific-like [Brassica napus]	04/10/2017
2SSE_BRANA	XP_013688210.1	83.243	1.35E-98	napin-2 [Brassica napus]	04/10/2017
2SSE_BRANA	XP_013708806.1	58.065	1.48E-61	napin-B-like [Brassica napus]	04/10/2017
2SSE_BRANA	XP_013729988.1	97.849	2.24E-131	napin embryo-specific [Brassica napus]	04/10/2017
2SSE_BRANA	XP_013738176.1	68.681	1.66E-73	napin-B-like [Brassica napus]	04/10/2017
2SSE_BRANA	XP_013742722.1	82.703	4.43E-95	napin-like [Brassica napus]	04/10/2017
2SSE_BRANA	XP_013743463.1	82.703	2.17E-98	napin-B [Brassica napus]	04/10/2017
2SSE_BRANA	CDY29278.1	83.784	5.39E-101	BnaC01g19300D [Brassica napus]	12/07/2017
2SSE_BRANA	CDY29280.1	84.324	2.56E-101	BnaC01g19320D [Brassica napus]	12/07/2017
2SSE_BRANA	CDY29281.1	85.946	4.15E-101	BnaC01g19330D [Brassica napus]	12/07/2017
2SSE_BRANA	XP_018449981.1	61.497	5.91E-67	PREDICTED: napin-B-like [Raphanus sativus]	04/10/2016
2SSE_BRANA	XP_018453699.1	81.081	2.08E-93	PREDICTED: napin-2 [Raphanus sativus]	04/10/2016
2SSE_BRANA	XP_018469054.1	79.459	1.92E-90	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SSE_BRANA	XP_018469273.1	82.258	2.13E-86	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SSE_BRANA	XP_018469298.1	83.243	3.00E-95	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SSE_BRANA	XP_018469309.1	84.865	4.03E-88	PREDICTED: napin [Raphanus sativus]	04/10/2016
2SSE_BRANA	XP_018469312.1	82.514	3.77E-95	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SSE_BRANA	XP_018481895.1	82.123	1.06E-89	PREDICTED: napin-like [Raphanus sativus]	04/10/2016
2SSE_BRANA	CAA62908.1	79.73	1.03E-60	allergen sin a 1.0108, partial [Sinapis alba]	14/07/2016

2SSE_BRANA	CAA62909.1	84.459	3.41E-64	allergen sin a 1.0104, partial [Sinapis alba]	14/07/2016
2SSE_BRANA	CAA62910.1	83.108	1.78E-72	allergen sin a 1.0105, partial [Sinapis alba]	14/07/2016
2SSE_BRANA	CAA62911.1	80.405	4.09E-61	allergen sin a 1.0106, partial [Sinapis alba]	14/07/2016
2SSE_BRANA	CAA62912.1	83.108	1.38E-63	allergen sin a 1.0107, partial [Sinapis alba]	14/07/2016
2SSE_BRANA	XP_013588759.1	82.162	1.76E-94	PREDICTED: napin-like [Brassica oleracea var. oleracea]	25/08/2015
2SSE_BRANA	XP_013589349.1	87.097	4.32E-101	PREDICTED: napin-like [Brassica oleracea var. oleracea]	25/08/2015
2SSE_BRANA	XP_013592507.1	87.568	2.13E-100	PREDICTED: napin [Brassica oleracea var. oleracea]	25/08/2015
2SSE_BRANA	XP_013621452.1	83.784	1.30E-99	PREDICTED: napin-2 [Brassica oleracea var. oleracea]	25/08/2015
2SSE_BRANA	XP_013623354.1	96.774	1.68E-130	PREDICTED: napin embryo-specific [Brassica oleracea var. oleracea]	25/08/2015
2SSE_BRANA	CAA32653.1	82.162	1.11E-96	unnamed protein product [Brassica napus]	18/04/2005
2SSE_BRANA	CAA46171.1	85.946	5.45E-99	2S storage protein [Brassica rapa]	18/04/2005
2SSE_BRANA	CAA46172.1	82.162	1.15E-96	2S storage protein [Brassica oleracea]	18/04/2005
2SSE_BRANA	CAA46173.1	83.243	1.68E-98	2S storage protein [Brassica nigra]	18/04/2005
2SSE_BRANA	CAA52813.1	71.429	3.69E-67	2S storage prepropeptide [Brassica carinata]	18/04/2005
2SSE_BRANA	AAA63470.1	82.317	7.56E-80	storage protein, partial [Raphanus sativus]	07/03/1995
2SSE_BRANA	AAA63472.1	81.356	2.64E-79	storage protein, partial [Raphanus sativus]	07/03/1995
2SSE_BRANA	AAA32998.1	94.624	5.27E-103	napin [Brassica rapa subsp. oleifera]	12/08/1993
2SSE_BRANA	CAA46174.1	81.622	7.24E-97	2S storage protein [Brassica juncea]	06/08/1992
2SSE_BRANA	AAA33006.1	82.703	4.77E-98	napin prepropeptide [Brassica napus]	07/11/1984
CRU1_BRANA	CAG7873300.1	97.143	0	unnamed protein product [Brassica rapa]	13/07/2021
CRU1_BRANA	CAG7894591.1	88.98	0	unnamed protein product [Brassica rapa]	13/07/2021
CRU1_BRANA	KAG7591037.1	69.388	0	Cupin 1 [Arabidopsis thaliana x Arabidopsis arenosa]	13/07/2021
CRU1_BRANA	KAG7604853.1	79.01	0	RmlC-like cupin domain superfamily [Arabidopsis thaliana x Arabidopsis arenosa]	13/07/2021
CRU1_BRANA	KAG7612221.1	79.283	0	Cupin 1 [Arabidopsis suecica]	13/07/2021
CRU1_BRANA	KAG7652970.1	68.367	0	RmlC-like cupin domain superfamily [Arabidopsis suecica]	13/07/2021
CRU1_BRANA	KAG7532809.1	77.014	0	Cupin 1 [Arabidopsis thaliana x Arabidopsis arenosa]	12/07/2021
CRU1_BRANA	KAG7536518.1	76.654	0	RmlC-like cupin domain superfamily [Arabidopsis suecica]	12/07/2021
CRU1_BRANA	P11090.1	98.776	0	RecName: Full=Cruciferin; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin subunit alpha;	02/06/2021

				Contains: RecName: Full=Cruciferin subunit beta; Flags: Precursor	
CRU1_BRAN A	P33522.1	69.002	0	RecName: Full=Cruciferin CRU4; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin CRU4 alpha chain; Contains: RecName: Full=Cruciferin CRU4 beta chain; Flags: Precursor	02/06/2021
CRU1_BRAN A	P33523.2	100	0	RecName: Full=Cruciferin BnC1; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin BnC1 subunit alpha; Contains: RecName: Full=Cruciferin BnC1 subunit beta; Flags: Precursor	02/06/2021
CRU1_BRAN A	P33524.2	86.29	0	RecName: Full=Cruciferin BnC2; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin BnC2 subunit alpha; Contains: RecName: Full=Cruciferin BnC2 subunit beta; Flags: Precursor	02/06/2021
CRU1_BRAN A	Q02498.1	55.645	1.74E-180	RecName: Full=Cruciferin PGCRURSE5; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin PGCRURSE5 alpha chain; Contains: RecName: Full=Cruciferin PGCRURSE5 beta chain; Flags: Precursor	02/06/2021
CRU1_BRAN A	KAG5374765.1	67.835	0	hypothetical protein IGI04_039361 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU1_BRAN A	KAG5395280.1	97.551	0	hypothetical protein IGI04_025243 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU1_BRAN A	KAG5411171.1	81.02	0	hypothetical protein IGI04_007490 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU1_BRAN A	CAF2091563.1	97.551	0	unnamed protein product [Brassica napus]	05/03/2021
CRU1_BRAN A	CAF2310147.1	67.629	0	unnamed protein product [Brassica napus]	05/03/2021
CRU1_BRAN A	CAE5956469.1	68.367	0	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU1_BRAN A	CAE6221440.1	76.163	0	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU1_BRAN A	CAE6221461.1	77.912	0	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU1_BRAN A	KAG2262042.1	90.816	0	hypothetical protein Bca52824_069121 [Brassica carinata]	29/01/2021
CRU1_BRAN A	KAG2267406.1	68.79	0	hypothetical protein Bca52824_061961 [Brassica carinata]	29/01/2021
CRU1_BRAN A	KAG2301891.1	88.163	0	hypothetical protein Bca52824_030542 [Brassica carinata]	29/01/2021
CRU1_BRAN A	XP_009101736.1	97.143	0	cruciferin BnC1 [Brassica rapa]	07/12/2020
CRU1_BRAN A	XP_009119353.1	67.629	0	cruciferin CRU4 [Brassica rapa]	07/12/2020
CRU1_BRAN A	XP_009123931.2	88.391	0	cruciferin BnC2 [Brassica rapa]	07/12/2020

CRU1_BRAN A	3KGL_A	99.358	0	Chain A, Cruciferin	01/12/2020
CRU1_BRAN A	KAF8093127.1	87.551	0	hypothetical protein N665_0390s0034 [Sinapis alba]	22/10/2020
CRU1_BRAN A	KAF8104437.1	90.447	0	hypothetical protein N665_0172s0067 [Sinapis alba]	22/10/2020
CRU1_BRAN A	KAF8111721.1	69.492	0	hypothetical protein N665_0073s0077 [Sinapis alba]	22/10/2020
CRU1_BRAN A	CAD5333907.1	78.812	0	unnamed protein product [Arabidopsis thaliana]	11/09/2020
CRU1_BRAN A	KAF3486646.1	90.403	0	hypothetical protein F2Q69_00055158 [Brassica cretica]	24/03/2020
CRU1_BRAN A	KAF3596484.1	98.98	0	hypothetical protein DY000_02024393 [Brassica cretica]	24/03/2020
CRU1_BRAN A	KAF2534322.1	98.876	0	hypothetical protein F2Q70_00031286 [Brassica cretica]	21/02/2020
CRU1_BRAN A	KAF2549000.1	69.002	0	hypothetical protein F2Q70_00019310 [Brassica cretica]	21/02/2020
CRU1_BRAN A	KAF2550280.1	99.235	0	hypothetical protein F2Q68_00035701 [Brassica cretica]	21/02/2020
CRU1_BRAN A	CAA7017480.1	82.653	0	unnamed protein product [Microthlaspi erraticum]	18/01/2020
CRU1_BRAN A	CAA7017481.1	83.806	0	unnamed protein product [Microthlaspi erraticum]	18/01/2020
CRU1_BRAN A	CAA0407416.1	78.854	0	unnamed protein product [Arabidopsis thaliana]	12/12/2019
CRU1_BRAN A	VYS69229.1	78.812	0	unnamed protein product [Arabidopsis thaliana]	12/11/2019
CRU1_BRAN A	VVA89872.1	69.043	0	unnamed protein product [Arabis nemorensis]	06/08/2019
CRU1_BRAN A	VVB07153.1	76.846	0	unnamed protein product [Arabis nemorensis]	06/08/2019
CRU1_BRAN A	NP_001289907. 1	81.174	0	uncharacterized protein LOC104725055 precursor [Camelina sativa]	05/05/2019
CRU1_BRAN A	NP_001289908. 1	68.367	0	12S seed storage protein CRB precursor [Camelina sativa]	05/05/2019
CRU1_BRAN A	NP_001289909. 1	67.959	0	uncharacterized protein LOC104754510 precursor [Camelina sativa]	05/05/2019
CRU1_BRAN A	NP_171884.1	68.367	0	cruciferin 2 [Arabidopsis thaliana]	14/02/2019
CRU1_BRAN A	NP_199225.1	78.812	0	RmlC-like cupins superfamily protein [Arabidopsis thaliana]	14/02/2019
CRU1_BRAN A	NP_851128.1	77.556	0	RmlC-like cupins superfamily protein [Arabidopsis thaliana]	14/02/2019
CRU1_BRAN A	VDD24973.1	90.657	0	unnamed protein product [Brassica oleracea]	16/11/2018
CRU1_BRAN A	RID60621.1	97.347	0	hypothetical protein BRARA_F03764 [Brassica rapa]	13/09/2018
CRU1_BRAN A	RID75743.1	82.041	0	hypothetical protein BRARA_B02771 [Brassica rapa]	13/09/2018
CRU1_BRAN A	XP_006403137. 1	82.317	0	cruciferin BnC1 isoform X3 [Eutrema salsugineum]	26/02/2018

CRU1_BRAN A	XP_006403138. 1	80.612	0	cruciferin BnC1 isoform X1 [Eutrema salsugineum]	26/02/2018
CRU1_BRAN A	XP_006418193. 1	68	0	12S seed storage protein CRB [Eutrema salsugineum]	26/02/2018
CRU1_BRAN A	XP_024013253. 1	81.837	0	cruciferin BnC1 isoform X2 [Eutrema salsugineum]	26/02/2018
CRU1_BRAN A	XP_006279075. 1	80.285	0	12S seed storage protein CRA1 isoform X1 [Capsella rubella]	02/02/2018
CRU1_BRAN A	XP_006281468. 1	80.285	0	12S seed storage protein CRA1 [Capsella rubella]	02/02/2018
CRU1_BRAN A	XP_006282361. 1	79.878	0	12S seed storage protein CRA1 [Capsella rubella]	02/02/2018
CRU1_BRAN A	XP_006303676. 1	68.776	0	12S seed storage protein CRB [Capsella rubella]	02/02/2018
CRU1_BRAN A	XP_023634754. 1	80.081	0	12S seed storage protein CRA1 isoform X2 [Capsella rubella]	02/02/2018
CRU1_BRAN A	XP_013703356. 1	87.903	0	cruciferin BnC2 [Brassica napus]	04/10/2017
CRU1_BRAN A	XP_013706380. 1	97.143	0	cruciferin [Brassica napus]	04/10/2017
CRU1_BRAN A	XP_013734592. 1	56.653	9.63E- 180	cruciferin CRU1-like [Brassica napus]	04/10/2017
CRU1_BRAN A	XP_022557043. 1	99.388	0	cruciferin BnC1 [Brassica napus]	04/10/2017
CRU1_BRAN A	CDY14908.1	86.735	0	BnaA02g22500D [Brassica napus]	12/07/2017
CRU1_BRAN A	CDY18193.1	67.728	0	BnaC05g02160D [Brassica napus]	12/07/2017
CRU1_BRAN A	CDY22309.1	93.265	0	BnaA06g36310D [Brassica napus]	12/07/2017
CRU1_BRAN A	CDY38381.1	55.04	1.13E- 179	BnaC01g09900D [Brassica napus]	12/07/2017
CRU1_BRAN A	CDY65916.1	92.449	0	BnaC07g48660D [Brassica napus]	12/07/2017
CRU1_BRAN A	XP_002889479. 1	68.571	0	12S seed storage protein CRB [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU1_BRAN A	XP_020889541. 1	78.02	0	12S seed storage protein CRA1 [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU1_BRAN A	XP_020889551. 1	74.038	0	LOW QUALITY PROTEIN: 12S seed storage protein CRA1-like [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU1_BRAN A	XP_010441951. 1	81.174	0	PREDICTED: 12S seed storage protein CRA1 [Camelina sativa]	29/11/2016
CRU1_BRAN A	XP_010457405. 1	68.98	0	PREDICTED: 12S seed storage protein CRB isoform X1 [Camelina sativa]	29/11/2016
CRU1_BRAN A	XP_010481774. 1	79.837	0	PREDICTED: 12S seed storage protein CRA1-like [Camelina sativa]	29/11/2016
CRU1_BRAN A	XP_010482688. 1	64.95	0	PREDICTED: 12S seed storage protein CRB-like [Camelina sativa]	29/11/2016
CRU1_BRAN A	XP_010522580. 1	66.004	0	PREDICTED: 12S seed storage protein CRB-like [Tarenaya hassleriana]	18/11/2016
CRU1_BRAN A	XP_010556853. 2	64.741	0	PREDICTED: 12S seed storage protein CRA1-like [Tarenaya hassleriana]	18/11/2016

CRU1_BRAN A	XP_018449576. 1	69.133	0	PREDICTED: cruciferin CRU4 [Raphanus sativus]	04/10/2016
CRU1_BRAN A	XP_018469192. 1	56.653	0	PREDICTED: cruciferin PGCRURSE5 [Raphanus sativus]	04/10/2016
CRU1_BRAN A	XP_018484881. 1	92.857	0	PREDICTED: cruciferin BnC1 isoform X1 [Raphanus sativus]	04/10/2016
CRU1_BRAN A	XP_018484882. 1	90.204	0	PREDICTED: cruciferin BnC1 isoform X2 [Raphanus sativus]	04/10/2016
CRU1_BRAN A	XP_018484883. 1	89.388	0	PREDICTED: cruciferin BnC1 isoform X3 [Raphanus sativus]	04/10/2016
CRU1_BRAN A	ABD14346.1	97.089	0	cruciferin-like protein, partial [Brassica napus]	26/07/2016
CRU1_BRAN A	CAA40980.1	68.119	0	cruciferin cru4 subunit, partial [Brassica napus]	26/07/2016
CRU1_BRAN A	BAC80213.1	94.433	0	cruciferin, partial [Brassica napus]	25/07/2016
CRU1_BRAN A	EFH39867.1	78.02	0	hypothetical protein ARALYDRAFT_494580 [Arabidopsis lyrata subsp. lyrata]	25/07/2016
CRU1_BRAN A	OAO92112.1	79.01	0	CRU1 [Arabidopsis thaliana]	25/05/2016
CRU1_BRAN A	XP_013585668. 1	69.002	0	PREDICTED: cruciferin CRU4 [Brassica oleracea var. oleracea]	25/08/2015
CRU1_BRAN A	XP_013596349. 1	99.184	0	PREDICTED: cruciferin BnC1 [Brassica oleracea var. oleracea]	25/08/2015
CRU1_BRAN A	KFK29566.1	79.125	0	hypothetical protein AALP_AA7G151400 [Arabis alpina]	21/08/2014
CRU1_BRAN A	KFK31664.1	74.903	0	hypothetical protein AALP_AA6G142800 [Arabis alpina]	21/08/2014
CRU1_BRAN A	KFK42731.1	67.635	0	hypothetical protein AALP_AA1G032400 [Arabis alpina]	21/08/2014
CRU1_BRAN A	AFQ32289.1	80.972	0	12S seed storage protein [Camelina sativa]	27/08/2012
CRU1_BRAN A	AFQ32291.1	80.567	0	12S seed storage protein [Camelina sativa]	27/08/2012
CRU1_BRAN A	AFQ32292.1	80.769	0	12S seed storage protein [Camelina sativa]	27/08/2012
CRU1_BRAN A	AAA32777.1	78.812	0	12S storage protein CRA1 [Arabidopsis thaliana]	06/08/1990
CRU1_BRAN A	AAA32778.1	68.163	0	12S storage protein CRB [Arabidopsis thaliana]	06/08/1990
CRU1_BRAN A	AAA32988.1	99.184	0	cruciferin precursor [Brassica napus]	15/03/1989
CRU2_BRAN A	CAG7873300.1	88.306	0	unnamed protein product [Brassica rapa]	13/07/2021
CRU2_BRAN A	CAG7894591.1	96.774	0	unnamed protein product [Brassica rapa]	13/07/2021
CRU2_BRAN A	KAG7591037.1	68.347	0	Cupin 1 [Arabidopsis thaliana x Arabidopsis arenosa]	13/07/2021
CRU2_BRAN A	KAG7604853.1	75.342	0	RmlC-like cupin domain superfamily [Arabidopsis thaliana x Arabidopsis arenosa]	13/07/2021
CRU2_BRAN A	KAG7612221.1	75.591	0	Cupin 1 [Arabidopsis suecica]	13/07/2021

CRU2_BRAN A	KAG7652970.1	68.145	0	RmlC-like cupin domain superfamily [Arabidopsis suecica]	13/07/2021
CRU2_BRAN A	KAG7532809.1	73.981	0	Cupin 1 [Arabidopsis thaliana x Arabidopsis arenosa]	12/07/2021
CRU2_BRAN A	KAG7536518.1	73.269	0	RmlC-like cupin domain superfamily [Arabidopsis suecica]	12/07/2021
CRU2_BRAN A	P11090.1	85.685	0	RecName: Full=Cruciferin; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin subunit alpha; Contains: RecName: Full=Cruciferin subunit beta; Flags: Precursor	02/06/2021
CRU2_BRAN A	P33522.1	67.925	0	RecName: Full=Cruciferin CRU4; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin CRU4 alpha chain; Contains: RecName: Full=Cruciferin CRU4 beta chain; Flags: Precursor	02/06/2021
CRU2_BRAN A	P33523.2	86.29	0	RecName: Full=Cruciferin BnC1; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin BnC1 subunit alpha; Contains: RecName: Full=Cruciferin BnC1 subunit beta; Flags: Precursor	02/06/2021
CRU2_BRAN A	P33524.2	100	0	RecName: Full=Cruciferin BnC2; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin BnC2 subunit alpha; Contains: RecName: Full=Cruciferin BnC2 subunit beta; Flags: Precursor	02/06/2021
CRU2_BRAN A	Q02498.1	54.582	2.62E- 175	RecName: Full=Cruciferin PGCRURSE5; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin PGCRURSE5 alpha chain; Contains: RecName: Full=Cruciferin PGCRURSE5 beta chain; Flags: Precursor	02/06/2021
CRU2_BRAN A	KAG5374765.1	67.006	0	hypothetical protein IGI04_039361 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU2_BRAN A	KAG5395280.1	88.71	0	hypothetical protein IGI04_025243 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU2_BRAN A	KAG5411171.1	86.089	0	hypothetical protein IGI04_007490 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU2_BRAN A	CAF2091563.1	88.306	0	unnamed protein product [Brassica napus]	05/03/2021
CRU2_BRAN A	CAF2310147.1	66.802	0	unnamed protein product [Brassica napus]	05/03/2021
CRU2_BRAN A	CAE5956469.1	68.145	0	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU2_BRAN A	CAE6221440.1	72.797	0	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU2_BRAN A	CAE6221461.1	74.802	0	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU2_BRAN A	KAG2262042.1	82.661	0	hypothetical protein Bca52824_069121 [Brassica carinata]	29/01/2021

CRU2_BRAN A	KAG2267406.1	67.505	0	hypothetical protein Bca52824_061961 [Brassica carinata]	29/01/2021
CRU2_BRAN A	KAG2301891.1	88.508	0	hypothetical protein Bca52824_030542 [Brassica carinata]	29/01/2021
CRU2_BRAN A	XP_009101736. 1	88.306	0	cruciferin BnC1 [Brassica rapa]	07/12/2020
CRU2_BRAN A	XP_009119353. 1	66.802	0	cruciferin CRU4 [Brassica rapa]	07/12/2020
CRU2_BRAN A	XP_009123931. 2	97.177	0	cruciferin BnC2 [Brassica rapa]	07/12/2020
CRU2_BRAN A	3KGL_A	86.681	0	Chain A, Cruciferin	01/12/2020
CRU2_BRAN A	KAF8093127.1	89.113	0	hypothetical protein N665_0390s0034 [Sinapis alba]	22/10/2020
CRU2_BRAN A	KAF8104437.1	84.274	0	hypothetical protein N665_0172s0067 [Sinapis alba]	22/10/2020
CRU2_BRAN A	KAF8111721.1	67.782	0	hypothetical protein N665_0073s0077 [Sinapis alba]	22/10/2020
CRU2_BRAN A	CAD5333907.1	75.147	0	unnamed protein product [Arabidopsis thaliana]	11/09/2020
CRU2_BRAN A	KAF3486646.1	80.835	0	hypothetical protein F2Q69_00055158 [Brassica cretica]	24/03/2020
CRU2_BRAN A	KAF3596484.1	86.492	0	hypothetical protein DY000_02024393 [Brassica cretica]	24/03/2020
CRU2_BRAN A	KAF2534322.1	84.53	0	hypothetical protein F2Q70_00031286 [Brassica cretica]	21/02/2020
CRU2_BRAN A	KAF2549000.1	67.925	0	hypothetical protein F2Q70_00019310 [Brassica cretica]	21/02/2020
CRU2_BRAN A	KAF2550280.1	85.678	0	hypothetical protein F2Q68_00035701 [Brassica cretica]	21/02/2020
CRU2_BRAN A	CAA7017480.1	79.032	0	unnamed protein product [Microthlaspi erraticum]	18/01/2020
CRU2_BRAN A	CAA7017481.1	79.4	0	unnamed protein product [Microthlaspi erraticum]	18/01/2020
CRU2_BRAN A	CAA0407416.1	75.195	0	unnamed protein product [Arabidopsis thaliana]	12/12/2019
CRU2_BRAN A	VYS69229.1	75.342	0	unnamed protein product [Arabidopsis thaliana]	12/11/2019
CRU2_BRAN A	VVA89872.1	68.008	0	unnamed protein product [Arabis nemorensis]	06/08/2019
CRU2_BRAN A	VVB07153.1	75.148	0	unnamed protein product [Arabis nemorensis]	06/08/2019
CRU2_BRAN A	NP_001289907. 1	77.4	0	uncharacterized protein LOC104725055 precursor [Camelina sativa]	05/05/2019
CRU2_BRAN A	NP_001289908. 1	67.339	0	12S seed storage protein CRB precursor [Camelina sativa]	05/05/2019
CRU2_BRAN A	NP_001289909. 1	67.137	0	uncharacterized protein LOC104754510 precursor [Camelina sativa]	05/05/2019
CRU2_BRAN A	NP_171884.1	68.347	0	cruciferin 2 [Arabidopsis thaliana]	14/02/2019
CRU2_BRAN A	NP_199225.1	75.342	0	RmlC-like cupins superfamily protein [Arabidopsis thaliana]	14/02/2019

CRU2_BRAN A	NP_851128.1	74.447	0	RmlC-like cupins superfamily protein [Arabidopsis thaliana]	14/02/2019
CRU2_BRAN A	VDD24973.1	95.156	0	unnamed protein product [Brassica oleracea]	16/11/2018
CRU2_BRAN A	RID60621.1	88.911	0	hypothetical protein BRARA_F03764 [Brassica rapa]	13/09/2018
CRU2_BRAN A	RID75743.1	87.702	0	hypothetical protein BRARA_B02771 [Brassica rapa]	13/09/2018
CRU2_BRAN A	RID78004.1	55.777	1.92E- 172	hypothetical protein BRARA_A00867 [Brassica rapa]	13/09/2018
CRU2_BRAN A	XP_006403137. 1	80.12	0	cruciferin BnC1 isoform X3 [Eutrema salsugineum]	26/02/2018
CRU2_BRAN A	XP_006403138. 1	78.629	0	cruciferin BnC1 isoform X1 [Eutrema salsugineum]	26/02/2018
CRU2_BRAN A	XP_006418193. 1	66.112	0	12S seed storage protein CRB [Eutrema salsugineum]	26/02/2018
CRU2_BRAN A	XP_024013253. 1	79.435	0	cruciferin BnC1 isoform X2 [Eutrema salsugineum]	26/02/2018
CRU2_BRAN A	XP_006279075. 1	77.711	0	12S seed storage protein CRA1 isoform X1 [Capsella rubella]	02/02/2018
CRU2_BRAN A	XP_006281468. 1	77.51	0	12S seed storage protein CRA1 [Capsella rubella]	02/02/2018
CRU2_BRAN A	XP_006282361. 1	76.506	0	12S seed storage protein CRA1 [Capsella rubella]	02/02/2018
CRU2_BRAN A	XP_006303676. 1	68.145	0	12S seed storage protein CRB [Capsella rubella]	02/02/2018
CRU2_BRAN A	XP_023634754. 1	77.51	0	12S seed storage protein CRA1 isoform X2 [Capsella rubella]	02/02/2018
CRU2_BRAN A	XP_013703356. 1	98.387	0	cruciferin BnC2 [Brassica napus]	04/10/2017
CRU2_BRAN A	XP_013706380. 1	87.903	0	cruciferin [Brassica napus]	04/10/2017
CRU2_BRAN A	XP_022557043. 1	86.492	0	cruciferin BnC1 [Brassica napus]	04/10/2017
CRU2_BRAN A	CDY14908.1	91.532	0	BnaA02g22500D [Brassica napus]	12/07/2017
CRU2_BRAN A	CDY18193.1	67.505	0	BnaC05g02160D [Brassica napus]	12/07/2017
CRU2_BRAN A	CDY22309.1	84.274	0	BnaA06g36310D [Brassica napus]	12/07/2017
CRU2_BRAN A	CDY38381.1	52.59	4.27E- 172	BnaC01g09900D [Brassica napus]	12/07/2017
CRU2_BRAN A	CDY65916.1	83.065	0	BnaC07g48660D [Brassica napus]	12/07/2017
CRU2_BRAN A	XP_002889479. 1	68.347	0	12S seed storage protein CRB [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU2_BRAN A	XP_020889541. 1	74.755	0	12S seed storage protein CRA1 [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU2_BRAN A	XP_020889551. 1	70.342	0	LOW QUALITY PROTEIN: 12S seed storage protein CRA1-like [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU2_BRAN A	XP_010441951. 1	77.4	0	PREDICTED: 12S seed storage protein CRA1 [Camelina sativa]	29/11/2016

CRU2_BRAN A	XP_010457405. 1	67.742	0	PREDICTED: 12S seed storage protein CRB isoform X1 [Camelina sativa]	29/11/2016
CRU2_BRAN A	XP_010481774. 1	76.4	0	PREDICTED: 12S seed storage protein CRA1-like [Camelina sativa]	29/11/2016
CRU2_BRAN A	XP_010482688. 1	63.992	0	PREDICTED: 12S seed storage protein CRB-like [Camelina sativa]	29/11/2016
CRU2_BRAN A	XP_010522580. 1	62.205	0	PREDICTED: 12S seed storage protein CRB-like [Tarenaya hassleriana]	18/11/2016
CRU2_BRAN A	XP_010556853. 2	62.205	0	PREDICTED: 12S seed storage protein CRA1-like [Tarenaya hassleriana]	18/11/2016
CRU2_BRAN A	XP_018449576. 1	67.432	0	PREDICTED: cruciferin CRU4 [Raphanus sativus]	04/10/2016
CRU2_BRAN A	XP_018469192. 1	54.98	2.44E-177	PREDICTED: cruciferin PGCRURSE5 [Raphanus sativus]	04/10/2016
CRU2_BRAN A	XP_018484881. 1	84.879	0	PREDICTED: cruciferin BnC1 isoform X1 [Raphanus sativus]	04/10/2016
CRU2_BRAN A	XP_018484882. 1	81.855	0	PREDICTED: cruciferin BnC1 isoform X2 [Raphanus sativus]	04/10/2016
CRU2_BRAN A	XP_018484883. 1	82.661	0	PREDICTED: cruciferin BnC1 isoform X3 [Raphanus sativus]	04/10/2016
CRU2_BRAN A	ABD14346.1	88.397	0	cruciferin-like protein, partial [Brassica napus]	26/07/2016
CRU2_BRAN A	CAA40980.1	66.968	0	cruciferin cru4 subunit, partial [Brassica napus]	26/07/2016
CRU2_BRAN A	BAC80213.1	95.137	0	cruciferin, partial [Brassica napus]	25/07/2016
CRU2_BRAN A	EFH39867.1	74.56	0	hypothetical protein ARALYDRAFT_494580 [Arabidopsis lyrata subsp. lyrata]	25/07/2016
CRU2_BRAN A	OAO92112.1	75.538	0	CRU1 [Arabidopsis thaliana]	25/05/2016
CRU2_BRAN A	XP_013585668. 1	67.715	0	PREDICTED: cruciferin CRU4 [Brassica oleracea var. oleracea]	25/08/2015
CRU2_BRAN A	XP_013596349. 1	86.694	0	PREDICTED: cruciferin BnC1 [Brassica oleracea var. oleracea]	25/08/2015
CRU2_BRAN A	KFK29566.1	77.734	0	hypothetical protein AALP_AA7G151400 [Arabis alpina]	21/08/2014
CRU2_BRAN A	KFK31664.1	73.152	0	hypothetical protein AALP_AA6G142800 [Arabis alpina]	21/08/2014
CRU2_BRAN A	KFK42731.1	65.164	0	hypothetical protein AALP_AA1G032400 [Arabis alpina]	21/08/2014
CRU2_BRAN A	AFQ32289.1	77.2	0	12S seed storage protein [Camelina sativa]	27/08/2012
CRU2_BRAN A	AFQ32291.1	77	0	12S seed storage protein [Camelina sativa]	27/08/2012
CRU2_BRAN A	AFQ32292.1	77.4	0	12S seed storage protein [Camelina sativa]	27/08/2012
CRU2_BRAN A	AAA32777.1	75.342	0	12S storage protein CRA1 [Arabidopsis thaliana]	06/08/1990
CRU2_BRAN A	AAA32778.1	68.145	0	12S storage protein CRB [Arabidopsis thaliana]	06/08/1990
CRU2_BRAN A	AAA32988.1	85.887	0	cruciferin precursor [Brassica napus]	15/03/1989

CRU3_BRAN A	CAG7873300.1	58.599	1.44E-179	unnamed protein product [Brassica rapa]	13/07/2021
CRU3_BRAN A	CAG7894591.1	56.4	4.46E-179	unnamed protein product [Brassica rapa]	13/07/2021
CRU3_BRAN A	CAG7898569.1	84.54	0	unnamed protein product [Brassica rapa]	13/07/2021
CRU3_BRAN A	KAG7604853.1	54	0	RmlC-like cupin domain superfamily [Arabidopsis thaliana x Arabidopsis arenosa]	13/07/2021
CRU3_BRAN A	KAG7612221.1	53.8	0	Cupin 1 [Arabidopsis suecica]	13/07/2021
CRU3_BRAN A	KAG7536518.1	54.812	1.22E-176	RmlC-like cupin domain superfamily [Arabidopsis suecica]	12/07/2021
CRU3_BRAN A	KAG7541137.1	82.812	0	RmlC-like cupin domain superfamily [Arabidopsis thaliana x Arabidopsis arenosa]	12/07/2021
CRU3_BRAN A	KAG7545843.1	81.238	0	Cupin 1 [Arabidopsis suecica]	12/07/2021
CRU3_BRAN A	P33523.2	58.686	3.09E-180	RecName: Full=Cruciferin BnC1; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin BnC1 subunit alpha; Contains: RecName: Full=Cruciferin BnC1 subunit beta; Flags: Precursor	02/06/2021
CRU3_BRAN A	P33525.1	100	0	RecName: Full=Cruciferin CRU1; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin CRU1 alpha chain; Contains: RecName: Full=Cruciferin CRU1 beta chain; Flags: Precursor	02/06/2021
CRU3_BRAN A	Q02498.1	89.412	0	RecName: Full=Cruciferin PGCRURSE5; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin PGCRURSE5 alpha chain; Contains: RecName: Full=Cruciferin PGCRURSE5 beta chain; Flags: Precursor	02/06/2021
CRU3_BRAN A	KAG5395280.1	59.023	1.16E-180	hypothetical protein IGI04_025243 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU3_BRAN A	KAG5413258.1	99.411	0	hypothetical protein IGI04_000825 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU3_BRAN A	CAF2091563.1	58.599	5.34E-180	unnamed protein product [Brassica napus]	05/03/2021
CRU3_BRAN A	CAF2148186.1	99.804	0	unnamed protein product [Brassica napus]	05/03/2021
CRU3_BRAN A	CAF2244408.1	84.344	0	unnamed protein product [Brassica napus]	05/03/2021
CRU3_BRAN A	CAE6171351.1	82.012	0	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU3_BRAN A	CAE6221440.1	55.932	1.68E-180	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU3_BRAN A	KAG2256511.1	79.924	0	hypothetical protein Bca52824_075805 [Brassica carinata]	29/01/2021
CRU3_BRAN A	KAG2301891.1	55.2	1.17E-180	hypothetical protein Bca52824_030542 [Brassica carinata]	29/01/2021

CRU3_BRAN A	KAG2319363.1	88.845	0	hypothetical protein Bca52824_012576 [Brassica carinata]	29/01/2021
CRU3_BRAN A	XP_009101736. 1	56.175	0	cruciferin BnC1 [Brassica rapa]	07/12/2020
CRU3_BRAN A	XP_009109088. 1	84.344	0	cruciferin PGCRURSE5 [Brassica rapa]	07/12/2020
CRU3_BRAN A	XP_009123931. 2	56.2	4.94E- 179	cruciferin BnC2 [Brassica rapa]	07/12/2020
CRU3_BRAN A	XP_009129556. 1	97.642	0	cruciferin CRU1 [Brassica rapa]	07/12/2020
CRU3_BRAN A	3KGL_A	58.65	5.71E- 179	Chain A, Cruciferin	01/12/2020
CRU3_BRAN A	KAF8093127.1	55.8	5.62E- 178	hypothetical protein N665_0390s0034 [Sinapis alba]	22/10/2020
CRU3_BRAN A	KAF8094326.1	84.825	0	hypothetical protein N665_0365s0013 [Sinapis alba]	22/10/2020
CRU3_BRAN A	KAF8104437.1	59.873	7.39E- 179	hypothetical protein N665_0172s0067 [Sinapis alba]	22/10/2020
CRU3_BRAN A	KAF8114478.1	85.88	0	hypothetical protein N665_0036s0013 [Sinapis alba]	22/10/2020
CRU3_BRAN A	CAD5333907.1	53.8	0	unnamed protein product [Arabidopsis thaliana]	11/09/2020
CRU3_BRAN A	KAF3486646.1	55.556	1.12E- 177	hypothetical protein F2Q69_00055158 [Brassica cretica]	24/03/2020
CRU3_BRAN A	KAF3528743.1	93.883	0	hypothetical protein DY000_02037184, partial [Brassica cretica]	24/03/2020
CRU3_BRAN A	KAF3570360.1	77.104	0	hypothetical protein F2Q69_00060459 [Brassica cretica]	24/03/2020
CRU3_BRAN A	KAF3596484.1	58.439	8.77E- 179	hypothetical protein DY000_02024393 [Brassica cretica]	24/03/2020
CRU3_BRAN A	KAF2540365.1	95.294	0	hypothetical protein F2Q68_00029333 [Brassica cretica]	21/02/2020
CRU3_BRAN A	KAF2586251.1	93.732	0	hypothetical protein F2Q70_00034448, partial [Brassica cretica]	21/02/2020
CRU3_BRAN A	KAF2591500.1	84.736	0	hypothetical protein F2Q70_00039788 [Brassica cretica]	21/02/2020
CRU3_BRAN A	CAA7017480.1	54.224	1.36E- 178	unnamed protein product [Microthlaspi erraticum]	18/01/2020
CRU3_BRAN A	CAA7017481.1	53.2	2.89E- 178	unnamed protein product [Microthlaspi erraticum]	18/01/2020
CRU3_BRAN A	CAA7050133.1	76.667	0	unnamed protein product [Microthlaspi erraticum]	18/01/2020
CRU3_BRAN A	CAA0407416.1	55.417	1.49E- 180	unnamed protein product [Arabidopsis thaliana]	12/12/2019
CRU3_BRAN A	VYS69229.1	53.438	0	unnamed protein product [Arabidopsis thaliana]	12/11/2019
CRU3_BRAN A	VVA89834.1	81.437	0	unnamed protein product [Arabis nemorensis]	06/08/2019
CRU3_BRAN A	NP_001289907. 1	55.208	0	uncharacterized protein LOC104725055 precursor [Camelina sativa]	05/05/2019
CRU3_BRAN A	NP_194581.1	85	0	cruciferin 3 [Arabidopsis thaliana]	14/02/2019

CRU3_BRAN A	NP_199225.1	53.242	0	RmlC-like cupins superfamily protein [Arabidopsis thaliana]	14/02/2019
CRU3_BRAN A	RID50768.1	83.645	0	hypothetical protein BRARA_H01475, partial [Brassica rapa]	13/09/2018
CRU3_BRAN A	RID60621.1	56.773	0	hypothetical protein BRARA_F03764 [Brassica rapa]	13/09/2018
CRU3_BRAN A	RID78004.1	98.625	0	hypothetical protein BRARA_A00867 [Brassica rapa]	13/09/2018
CRU3_BRAN A	XP_006412944. 1	79.846	0	cruciferin PGCRURSE5 [Eutrema salsugineum]	26/02/2018
CRU3_BRAN A	XP_024010080. 1	89.381	0	LOW QUALITY PROTEIN: cruciferin CRU1 [Eutrema salsugineum]	26/02/2018
CRU3_BRAN A	XP_006282820. 1	81.25	0	12S seed storage protein CRC [Capsella rubella]	02/02/2018
CRU3_BRAN A	XP_013656366. 1	84.736	0	cruciferin CRU1-like [Brassica napus]	04/10/2017
CRU3_BRAN A	XP_013696793. 1	99.607	0	cruciferin CRU1 [Brassica napus]	04/10/2017
CRU3_BRAN A	XP_013703356. 1	56.859	5.26E- 179	cruciferin BnC2 [Brassica napus]	04/10/2017
CRU3_BRAN A	XP_013706380. 1	58.386	9.41E- 180	cruciferin [Brassica napus]	04/10/2017
CRU3_BRAN A	XP_013734582. 1	94.499	0	cruciferin CRU1-like [Brassica napus]	04/10/2017
CRU3_BRAN A	XP_013734592. 1	94.695	0	cruciferin CRU1-like [Brassica napus]	04/10/2017
CRU3_BRAN A	XP_022557043. 1	58.65	8.67E- 179	cruciferin BnC1 [Brassica napus]	04/10/2017
CRU3_BRAN A	CDY14908.1	54	3.14E- 179	BnaA02g22500D [Brassica napus]	12/07/2017
CRU3_BRAN A	CDY22309.1	56.476	3.11E- 178	BnaA06g36310D [Brassica napus]	12/07/2017
CRU3_BRAN A	CDY35196.1	96.071	0	BnaA01g08350D [Brassica napus]	12/07/2017
CRU3_BRAN A	CDY38381.1	91.945	0	BnaC01g09900D [Brassica napus]	12/07/2017
CRU3_BRAN A	CDY65916.1	55.839	3.98E- 178	BnaC07g48660D [Brassica napus]	12/07/2017
CRU3_BRAN A	XP_002869496. 1	85.546	0	12S seed storage protein CRC isoform X1 [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU3_BRAN A	XP_020874599. 1	85.546	0	12S seed storage protein CRC isoform X2 [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU3_BRAN A	XP_020889541. 1	56.809	0	12S seed storage protein CRA1 [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU3_BRAN A	XP_010433207. 1	78.937	0	PREDICTED: 12S seed storage protein CRC [Camelina sativa]	29/11/2016
CRU3_BRAN A	XP_010441951. 1	54.812	1.85E- 180	PREDICTED: 12S seed storage protein CRA1 [Camelina sativa]	29/11/2016
CRU3_BRAN A	XP_010447969. 1	79.452	0	PREDICTED: 12S seed storage protein CRC-like [Camelina sativa]	29/11/2016
CRU3_BRAN A	XP_010481774. 1	53.586	0	PREDICTED: 12S seed storage protein CRA1-like [Camelina sativa]	29/11/2016

CRU3_BRAN A	XP_019087322. 1	76.641	0	PREDICTED: 12S seed storage protein CRC-like [Camelina sativa]	29/11/2016
CRU3_BRAN A	XP_010522580. 1	57.265	0	PREDICTED: 12S seed storage protein CRB-like [Tarenaya hassleriana]	18/11/2016
CRU3_BRAN A	XP_010555095. 1	65.121	0	PREDICTED: cruciferin PGCRURSE5 [Tarenaya hassleriana]	18/11/2016
CRU3_BRAN A	XP_010556853. 2	55.446	0	PREDICTED: 12S seed storage protein CRA1-like [Tarenaya hassleriana]	18/11/2016
CRU3_BRAN A	XP_018469192. 1	91.961	0	PREDICTED: cruciferin PGCRURSE5 [Raphanus sativus]	04/10/2016
CRU3_BRAN A	XP_018484881. 1	57.325	7.66E-178	PREDICTED: cruciferin BnC1 isoform X1 [Raphanus sativus]	04/10/2016
CRU3_BRAN A	XP_018484882. 1	56.263	6.15E-177	PREDICTED: cruciferin BnC1 isoform X2 [Raphanus sativus]	04/10/2016
CRU3_BRAN A	XP_018484883. 1	55.839	6.92E-178	PREDICTED: cruciferin BnC1 isoform X3 [Raphanus sativus]	04/10/2016
CRU3_BRAN A	ABD14346.1	58.599	2.66E-178	cruciferin-like protein, partial [Brassica napus]	26/07/2016
CRU3_BRAN A	BAC80213.1	58.686	4.80E-177	cruciferin, partial [Brassica napus]	25/07/2016
CRU3_BRAN A	EFH39867.1	56.383	0	hypothetical protein ARALYDRAFT_494580 [Arabidopsis lyrata subsp. lyrata]	25/07/2016
CRU3_BRAN A	AAK07609.1	94.303	0	cruciferin subunit [Brassica napus]	14/07/2016
CRU3_BRAN A	OAO92112.1	53.438	0	CRU1 [Arabidopsis thaliana]	25/05/2016
CRU3_BRAN A	OAO99762.1	85	0	CRU3 [Arabidopsis thaliana]	25/05/2016
CRU3_BRAN A	XP_013585447. 1	94.706	0	PREDICTED: cruciferin CRU1 [Brassica oleracea var. oleracea]	25/08/2015
CRU3_BRAN A	XP_013596349. 1	58.65	5.20E-179	PREDICTED: cruciferin BnC1 [Brassica oleracea var. oleracea]	25/08/2015
CRU3_BRAN A	XP_013603560. 1	81.676	0	PREDICTED: cruciferin CRU1-like isoform X1 [Brassica oleracea var. oleracea]	25/08/2015
CRU3_BRAN A	XP_013603561. 1	81.8	0	PREDICTED: cruciferin CRU1-like isoform X2 [Brassica oleracea var. oleracea]	25/08/2015
CRU3_BRAN A	ESQ37783.1	85.546	0	hypothetical protein EUTSA_v10029458mg [Eutrema salsugineum]	23/03/2015
CRU3_BRAN A	KFK29566.1	55.556	1.74E-176	hypothetical protein AALP_AA7G151400 [Arabis alpina]	21/08/2014
CRU3_BRAN A	AFQ32289.1	54.812	1.21E-180	12S seed storage protein [Camelina sativa]	27/08/2012
CRU3_BRAN A	AFQ32291.1	55.864	1.77E-180	12S seed storage protein [Camelina sativa]	27/08/2012
CRU3_BRAN A	AFQ32292.1	54.812	1.21E-180	12S seed storage protein [Camelina sativa]	27/08/2012
CRU3_BRAN A	AAX77383.1	86.301	0	11S globulin precursor [Sinapis alba]	24/01/2006
CRU3_BRAN A	AAX77384.1	91.765	0	11S globulin precursor [Sinapis alba]	24/01/2006

CRU3_BRAN A	AAL91248.1	85	0	AT4g28520/F20O9_210 [Arabidopsis thaliana]	24/03/2002
CRU3_BRAN A	AAA32989.1	99.601	0	cruciferin precursor, partial [Brassica napus]	15/09/1990
CRU3_BRAN A	AAA32777.1	53.438	0	12S storage protein CRA1 [Arabidopsis thaliana]	06/08/1990
CRU4_BRAN A	CAG7873300.1	69.723	0	unnamed protein product [Brassica rapa]	13/07/2021
CRU4_BRAN A	CAG7894591.1	70.103	0	unnamed protein product [Brassica rapa]	13/07/2021
CRU4_BRAN A	KAG7591037.1	84.749	0	Cupin 1 [Arabidopsis thaliana x Arabidopsis arenosa]	13/07/2021
CRU4_BRAN A	KAG7604853.1	70.921	0	RmlC-like cupin domain superfamily [Arabidopsis thaliana x Arabidopsis arenosa]	13/07/2021
CRU4_BRAN A	KAG7612221.1	71.579	0	Cupin 1 [Arabidopsis suecica]	13/07/2021
CRU4_BRAN A	KAG7652970.1	84.532	0	RmlC-like cupin domain superfamily [Arabidopsis suecica]	13/07/2021
CRU4_BRAN A	KAG7532809.1	68.856	0	Cupin 1 [Arabidopsis thaliana x Arabidopsis arenosa]	12/07/2021
CRU4_BRAN A	KAG7536518.1	68.553	0	RmlC-like cupin domain superfamily [Arabidopsis suecica]	12/07/2021
CRU4_BRAN A	KAG7541137.1	54.397	3.26E-164	RmlC-like cupin domain superfamily [Arabidopsis thaliana x Arabidopsis arenosa]	12/07/2021
CRU4_BRAN A	P11090.1	68.565	0	RecName: Full=Cruciferin; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin subunit alpha; Contains: RecName: Full=Cruciferin subunit beta; Flags: Precursor	02/06/2021
CRU4_BRAN A	P33522.1	100	0	RecName: Full=Cruciferin CRU4; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin CRU4 alpha chain; Contains: RecName: Full=Cruciferin CRU4 beta chain; Flags: Precursor	02/06/2021
CRU4_BRAN A	P33523.2	68.987	0	RecName: Full=Cruciferin BnC1; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin BnC1 subunit alpha; Contains: RecName: Full=Cruciferin BnC1 subunit beta; Flags: Precursor	02/06/2021
CRU4_BRAN A	P33524.2	67.886	0	RecName: Full=Cruciferin BnC2; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin BnC2 subunit alpha; Contains: RecName: Full=Cruciferin BnC2 subunit beta; Flags: Precursor	02/06/2021
CRU4_BRAN A	Q02498.1	54.957	4.70E-165	RecName: Full=Cruciferin PGCRURSE5; AltName: Full=11S globulin; AltName: Full=12S storage protein; Contains: RecName: Full=Cruciferin PGCRURSE5 alpha chain; Contains: RecName:	02/06/2021

				Full=Cruciferin PGCRURSE5 beta chain; Flags: Precursor	
CRU4_BRAN A	KAG5374765.1	97.849	0	hypothetical protein IGI04_039361 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU4_BRAN A	KAG5395280.1	70.149	0	hypothetical protein IGI04_025243 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU4_BRAN A	KAG5411171.1	62.733	0	hypothetical protein IGI04_007490 [Brassica rapa subsp. trilocularis]	30/03/2021
CRU4_BRAN A	CAF2091563.1	69.723	0	unnamed protein product [Brassica napus]	05/03/2021
CRU4_BRAN A	CAF2310147.1	97.634	0	unnamed protein product [Brassica napus]	05/03/2021
CRU4_BRAN A	CAE5956469.1	84.532	0	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU4_BRAN A	CAE6221440.1	68.191	0	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU4_BRAN A	CAE6221461.1	69.247	0	unnamed protein product [Arabidopsis arenosa]	12/02/2021
CRU4_BRAN A	KAG2262042.1	72.21	0	hypothetical protein Bca52824_069121 [Brassica carinata]	29/01/2021
CRU4_BRAN A	KAG2267406.1	99.14	0	hypothetical protein Bca52824_061961 [Brassica carinata]	29/01/2021
CRU4_BRAN A	KAG2301891.1	72.211	0	hypothetical protein Bca52824_030542 [Brassica carinata]	29/01/2021
CRU4_BRAN A	XP_009101736.1	69.023	0	cruciferin BnC1 [Brassica rapa]	07/12/2020
CRU4_BRAN A	XP_009119353.1	97.634	0	cruciferin CRU4 [Brassica rapa]	07/12/2020
CRU4_BRAN A	XP_009123931.2	69.815	0	cruciferin BnC2 [Brassica rapa]	07/12/2020
CRU4_BRAN A	3KGL_A	69.528	0	Chain A, Cruciferin	01/12/2020
CRU4_BRAN A	KAF8093127.1	71.667	0	hypothetical protein N665_0390s0034 [Sinapis alba]	22/10/2020
CRU4_BRAN A	KAF8104437.1	69.895	0	hypothetical protein N665_0172s0067 [Sinapis alba]	22/10/2020
CRU4_BRAN A	KAF8111721.1	87.361	0	hypothetical protein N665_0073s0077 [Sinapis alba]	22/10/2020
CRU4_BRAN A	CAD5333907.1	71.13	0	unnamed protein product [Arabidopsis thaliana]	11/09/2020
CRU4_BRAN A	KAF3486646.1	66.735	0	hypothetical protein F2Q69_00055158 [Brassica cretica]	24/03/2020
CRU4_BRAN A	KAF3596484.1	69.556	0	hypothetical protein DY000_02024393 [Brassica cretica]	24/03/2020
CRU4_BRAN A	KAF2549000.1	98.925	0	hypothetical protein F2Q70_00019310 [Brassica cretica]	21/02/2020
CRU4_BRAN A	KAF2550280.1	69.565	0	hypothetical protein F2Q68_00035701 [Brassica cretica]	21/02/2020
CRU4_BRAN A	CAA7017480.1	68.344	0	unnamed protein product [Microthlaspi erraticum]	18/01/2020
CRU4_BRAN A	CAA7017481.1	70.878	0	unnamed protein product [Microthlaspi erraticum]	18/01/2020
CRU4_BRAN A	CAA0407416.1	70.815	0	unnamed protein product [Arabidopsis thaliana]	12/12/2019

CRU4_BRAN A	VYS69229.1	70.921	0	unnamed protein product [Arabidopsis thaliana]	12/11/2019
CRU4_BRAN A	VVA89872.1	85.313	0	unnamed protein product [Arabis nemorensis]	06/08/2019
CRU4_BRAN A	VVB07153.1	71.215	0	unnamed protein product [Arabis nemorensis]	06/08/2019
CRU4_BRAN A	NP_001289907.1	72.185	0	uncharacterized protein LOC104725055 precursor [Camelina sativa]	05/05/2019
CRU4_BRAN A	NP_001289908.1	84.052	0	12S seed storage protein CRB precursor [Camelina sativa]	05/05/2019
CRU4_BRAN A	NP_001289909.1	82.826	0	uncharacterized protein LOC104754510 precursor [Camelina sativa]	05/05/2019
CRU4_BRAN A	NP_171884.1	84.096	0	cruciferin 2 [Arabidopsis thaliana]	14/02/2019
CRU4_BRAN A	NP_199225.1	70.921	0	RmlC-like cupins superfamily protein [Arabidopsis thaliana]	14/02/2019
CRU4_BRAN A	NP_851128.1	72.222	0	RmlC-like cupins superfamily protein [Arabidopsis thaliana]	14/02/2019
CRU4_BRAN A	RID60621.1	69.647	0	hypothetical protein BRARA_F03764 [Brassica rapa]	13/09/2018
CRU4_BRAN A	RID75743.1	63.975	0	hypothetical protein BRARA_B02771 [Brassica rapa]	13/09/2018
CRU4_BRAN A	XP_006403137.1	73.895	0	cruciferin BnC1 isoform X3 [Eutrema salsugineum]	26/02/2018
CRU4_BRAN A	XP_006403138.1	69.502	0	cruciferin BnC1 isoform X1 [Eutrema salsugineum]	26/02/2018
CRU4_BRAN A	XP_006418193.1	84.701	0	12S seed storage protein CRB [Eutrema salsugineum]	26/02/2018
CRU4_BRAN A	XP_024013253.1	70.208	0	cruciferin BnC1 isoform X2 [Eutrema salsugineum]	26/02/2018
CRU4_BRAN A	XP_006279075.1	71.619	0	12S seed storage protein CRA1 isoform X1 [Capsella rubella]	02/02/2018
CRU4_BRAN A	XP_006281468.1	71.492	0	12S seed storage protein CRA1 [Capsella rubella]	02/02/2018
CRU4_BRAN A	XP_006282361.1	71.175	0	12S seed storage protein CRA1 [Capsella rubella]	02/02/2018
CRU4_BRAN A	XP_006303676.1	84.13	0	12S seed storage protein CRB [Capsella rubella]	02/02/2018
CRU4_BRAN A	XP_023634754.1	71.492	0	12S seed storage protein CRA1 isoform X2 [Capsella rubella]	02/02/2018
CRU4_BRAN A	XP_013703356.1	69.309	0	cruciferin BnC2 [Brassica napus]	04/10/2017
CRU4_BRAN A	XP_013706380.1	69.444	0	cruciferin [Brassica napus]	04/10/2017
CRU4_BRAN A	XP_013734592.1	54.219	6.52E-164	cruciferin CRU1-like [Brassica napus]	04/10/2017
CRU4_BRAN A	XP_022557043.1	69.345	0	cruciferin BnC1 [Brassica napus]	04/10/2017
CRU4_BRAN A	CDY14908.1	74.348	0	BnaA02g22500D [Brassica napus]	12/07/2017
CRU4_BRAN A	CDY18193.1	97.419	0	BnaC05g02160D [Brassica napus]	12/07/2017

CRU4_BRAN A	CDY22309.1	73.378	0	BnaA06g36310D [Brassica napus]	12/07/2017
CRU4_BRAN A	CDY35196.1	54.219	1.06E-163	BnaA01g08350D [Brassica napus]	12/07/2017
CRU4_BRAN A	CDY38381.1	54.741	5.06E-166	BnaC01g09900D [Brassica napus]	12/07/2017
CRU4_BRAN A	CDY65916.1	72.036	0	BnaC07g48660D [Brassica napus]	12/07/2017
CRU4_BRAN A	XP_002889479.1	84.967	0	12S seed storage protein CRB [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU4_BRAN A	XP_020889541.1	70.64	0	12S seed storage protein CRA1 [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU4_BRAN A	XP_020889551.1	65.361	0	LOW QUALITY PROTEIN: 12S seed storage protein CRA1-like [Arabidopsis lyrata subsp. lyrata]	11/05/2017
CRU4_BRAN A	XP_010441951.1	71.93	0	PREDICTED: 12S seed storage protein CRA1 [Camelina sativa]	29/11/2016
CRU4_BRAN A	XP_010457405.1	84.348	0	PREDICTED: 12S seed storage protein CRB isoform X1 [Camelina sativa]	29/11/2016
CRU4_BRAN A	XP_010481774.1	70.69	0	PREDICTED: 12S seed storage protein CRA1-like [Camelina sativa]	29/11/2016
CRU4_BRAN A	XP_010482688.1	79.749	0	PREDICTED: 12S seed storage protein CRB-like [Camelina sativa]	29/11/2016
CRU4_BRAN A	XP_010522580.1	71.824	0	PREDICTED: 12S seed storage protein CRB-like [Tarenaya hassleriana]	18/11/2016
CRU4_BRAN A	XP_010556853.2	69.099	0	PREDICTED: 12S seed storage protein CRA1-like [Tarenaya hassleriana]	18/11/2016
CRU4_BRAN A	XP_018449576.1	91.435	0	PREDICTED: cruciferin CRU4 [Raphanus sativus]	04/10/2016
CRU4_BRAN A	XP_018469192.1	55.437	3.17E-165	PREDICTED: cruciferin PGCRURSE5 [Raphanus sativus]	04/10/2016
CRU4_BRAN A	XP_018484881.1	71.674	0	PREDICTED: cruciferin BnC1 isoform X1 [Raphanus sativus]	04/10/2016
CRU4_BRAN A	XP_018484882.1	73.111	0	PREDICTED: cruciferin BnC1 isoform X2 [Raphanus sativus]	04/10/2016
CRU4_BRAN A	XP_018484883.1	74.33	0	PREDICTED: cruciferin BnC1 isoform X3 [Raphanus sativus]	04/10/2016
CRU4_BRAN A	ABD14346.1	69.528	0	cruciferin-like protein, partial [Brassica napus]	26/07/2016
CRU4_BRAN A	CAA40980.1	99.516	0	cruciferin cru4 subunit, partial [Brassica napus]	26/07/2016
CRU4_BRAN A	BAC80213.1	70.021	0	cruciferin, partial [Brassica napus]	25/07/2016
CRU4_BRAN A	EFH39867.1	70.824	0	hypothetical protein ARALYDRAFT_494580 [Arabidopsis lyrata subsp. lyrata]	25/07/2016
CRU4_BRAN A	OAO92112.1	70.711	0	CRU1 [Arabidopsis thaliana]	25/05/2016
CRU4_BRAN A	XP_013585668.1	99.355	0	PREDICTED: cruciferin CRU4 [Brassica oleracea var. oleracea]	25/08/2015
CRU4_BRAN A	XP_013596349.1	69.345	0	PREDICTED: cruciferin BnC1 [Brassica oleracea var. oleracea]	25/08/2015

CRU4_BRAN A	KFK29566.1	66.467	0	hypothetical protein AALP_AA7G151400 [Arabis alpina]	21/08/2014
CRU4_BRAN A	KFK31664.1	62.016	0	hypothetical protein AALP_AA6G142800 [Arabis alpina]	21/08/2014
CRU4_BRAN A	KFK42731.1	83.26	0	hypothetical protein AALP_AA1G032400 [Arabis alpina]	21/08/2014
CRU4_BRAN A	AFQ32289.1	71.93	0	12S seed storage protein [Camelina sativa]	27/08/2012
CRU4_BRAN A	AFQ32291.1	71.586	0	12S seed storage protein [Camelina sativa]	27/08/2012
CRU4_BRAN A	AFQ32292.1	71.93	0	12S seed storage protein [Camelina sativa]	27/08/2012
CRU4_BRAN A	AAA32777.1	70.502	0	12S storage protein CRA1 [Arabidopsis thaliana]	06/08/1990
CRU4_BRAN A	AAA32778.1	83.878	0	12S storage protein CRB [Arabidopsis thaliana]	06/08/1990
CRU4_BRAN A	AAA32988.1	68.71	0	cruciferin precursor [Brassica napus]	15/03/1989

Table 2: NCBI-protein sequences homologous to the Raptein™90 proteins found using BLASTP algorithm

4. Conclusions and summary

The presence of cruciferin and napin proteins was confirmed on a peptide level in all samples. The samples contain relatively complex set of proteoforms. Cruciferin and napin proteins, both exist as several proteoforms (Janitha 2012, Suneru 2016).

The sequence searches with FARRP allergen protein database version 21 provided several hits characterizing the possible allergenic effects of the proteins found in Raptein™90. The full-length FASTA search results should be interpreted with > 35 % as the minimum identity threshold to an allergenic protein to infer any indication of possible allergenic cross-reactivity, although typically a minimum of > 50 % sequence identity may be required for a reliable allergenic indication. Likewise, the sequence similarity found in 80-mer FASTA searches may need to be interpreted in combination with the full-length FASTA searches. The BLASTP searches against the NCBI protein database found 265 sequences homologous to the query sequences, but did not include any new allergenic proteins apart from ten that were already found during the FARRP database searches.

The Raptein™90 proteins did not match any peptides using the word search against the CD peptide dataset, which the primary tool to indicate elicitation of CD search. Likewise, the full-length FASTA search against the CD protein dataset also did not indicate high sequence similarity with the Raptein™90 proteins with the criteria of E-value < 10⁻¹⁵ and identity > 45 %. This result indicates that the Raptein™90 proteins are unlikely to elicit CD.

5. References

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**GRAS NOTICE OF
CANOLA PROTEIN (RAPESEED PROTEIN)**

Appendix 5

**GMP+ certificate
of the rapeseed press cake supplier**

Prozess

ZERTIFIKAT



Die Zertifizierungsstelle



AGRIZERT Zertifizierungs GmbH
Siebenmorgenweg 6-8
53229 Bonn

(akkreditiert nach DIN EN 17065
GMP+ International Reg.-Nr.: CI000033)

bestätigt, dass berechtigterweise davon auszugehen ist, dass die Prozesse

der Herstellung von Einzelfuttermitteln

beim Teilnehmer

Teutoburger Ölmühle GmbH
Gutenbergstraße 16a
49479 Ibbenbüren

den zutreffenden Anforderungen und Voraussetzungen aus dem Standard

GMP+ B2
Herstellung von Futtermittelinhaltsstoffen

des GMP+ FC scheme (basierend auf GMP+ C6) der GMP+ International
(www.gmpplus.org) entsprechen.



Zertifikat-Registrier-Nr.:
Zertifikatsgültigkeit:
GMP+ International Reg.-Nr.:

GMPAGZ0550
01.12.2020 – 30.11.2023
GMP027298

Bonn, 24.11.2020


Zertifizierungsstelle

ERT

BUREAU VERITAS
Certification**Process Certificate**

Awarded to

Grupa Wilmar Marek Wilczyński S.K.A.

Al. Niepodległości 2E 55-020 Żórawina, Poland

Registration-code: GMP052235

Bureau Veritas Inspection and Certification The Netherlands B.V. declares that there is justifiable confidence that Grupa Wilmar Marek Wilczyński S.K.A. meets the applicable requirements and conditions for Production of feed materials GMO Controlled. Therefore Grupa Wilmar Marek Wilczyński S.K.A. is certified for the standard(s) GMP+ MI105 GMO Controlled, of the GMP+ FC scheme (based on GMP+ C6) of GMP+ International.

Standard(s)

GMP+ MI105 GMO Controlled

GMO Controlled

Original cycle start date: **18 February 2020**Certification / Recertification cycle start date: **18 February 2020**

Subject to the continued satisfactory operation of the organization's Feed Responsibility Assurance, this certificate is valid until: **17 February 2023**

Certificate No. **NL022094** Version: **01** Revision date: **18 February 2020**
Sebastiaan ter Horst
Director Certification

Issuing office: Bureau Veritas Inspection & Certification The Netherlands B.V.
Computerweg 2, 3821 AB Amersfoort, The Netherlands
Bureau Veritas Inspection and Certification The Netherlands B.V. is registered under CI000020



**GRAS NOTICE OF
CANOLA PROTEIN (RAPESEED PROTEIN)**

Appendix 5

**GMP+ certificate
of the rapeseed press cake supplier**

Prozess

ZERTIFIKAT



Die Zertifizierungsstelle



AGRIZERT Zertifizierungs GmbH
Siebenmorgenweg 6-8
53229 Bonn

(akkreditiert nach DIN EN 17065
GMP+ International Reg.-Nr.: CI000033)

bestätigt, dass berechtigterweise davon auszugehen ist, dass die Prozesse

der Herstellung von Einzelfuttermitteln

beim Teilnehmer

Teutoburger Ölmühle GmbH
Gutenbergstraße 16a
49479 Ibbenbüren

den zutreffenden Anforderungen und Voraussetzungen aus dem Standard

GMP+ B2
Herstellung von Futtermittelinhaltsstoffen

des GMP+ FC scheme (basierend auf GMP+ C6) der GMP+ International
(www.gmpplus.org) entsprechen.



Zertifikat-Registrier-Nr.:

GMPAGZ0550

Zertifikatsgültigkeit:

01.12.2020 – 30.11.2023

GMP+ International Reg.-Nr.:

GMP027298

Bonn, 24.11.2020


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Appendix 6

Protein separation by SDS PAGE

REPORT

Sample		Description of the study	
1.1. Company name Napiferyn BioTech sp. z o.o.		2.1. Type of the study (tittle): Protein separation by SDS PAGE	
1.2. Name of the sample R-03#35, 1 mg/ml, koncentrat błonnikowo-białkowy - B21/20/001 R-06#60, 1 mg/ml, koncentrat błonnikowo-białkowy - B21/20/002 R-09#41, 1 mg/ml, koncentrat błonnikowo-białkowy - B21/20/003 R-13#60, 1 mg/ml, koncentrat błonnikowo-białkowy - B21/20/004 R-15#66, 1 mg/ml, koncentrat błonnikowo-białkowy - B21/20/005 R-08#64, 1 mg/ml, koncentrat błonnikowo-białkowy - B21/20/006 R-03#57, 1 mg/ml, izolat białkowy - B21/20/007 R-06#35, 1 mg/ml, izolat białkowy - B21/20/008 R-08#57, 1 mg/ml, izolat białkowy - B21/20/009 R-12#52, 1 mg/ml, izolat białkowy - B21/20/010 R-15#59, 1 mg/ml, izolat białkowy - B21/20/011			
1.3. Sample delivery date: 2021-09-13		2.2. Constructor of research: (name and surname) Martyna Leszczewicz, Natalia Broncel	2.3. Experimental completion date: 2021-09-28
RESULTS			
3.1. Description Protein electrophoresis in polyacrylamide gel under denaturing conditions (SDS-PAGE) was performed according to the Laemmli method (Laemmli U. Cleavage of structural proteins during the assembly of the head of bacteriophage T4. Nature 227, 680–685 (1970). http://doi.org/10.1038/227680a0). The analysis was carried out in a 20% polyacrylamide gel. Samples separations were performed under reducing (with β -mercaptoethanol, BME) and non-reducing conditions (without BME). The molecular weight (MW) of proteins were estimated based on molecular weight markers (11-245 kDa).			
3.2. Results The SDS-PAGE analysis of proteins isolates and concentrates were performed according to the method developed in Industrial Biotechnology Laboratory. The results are presented in Figures 1-2 and Table 1-2.			

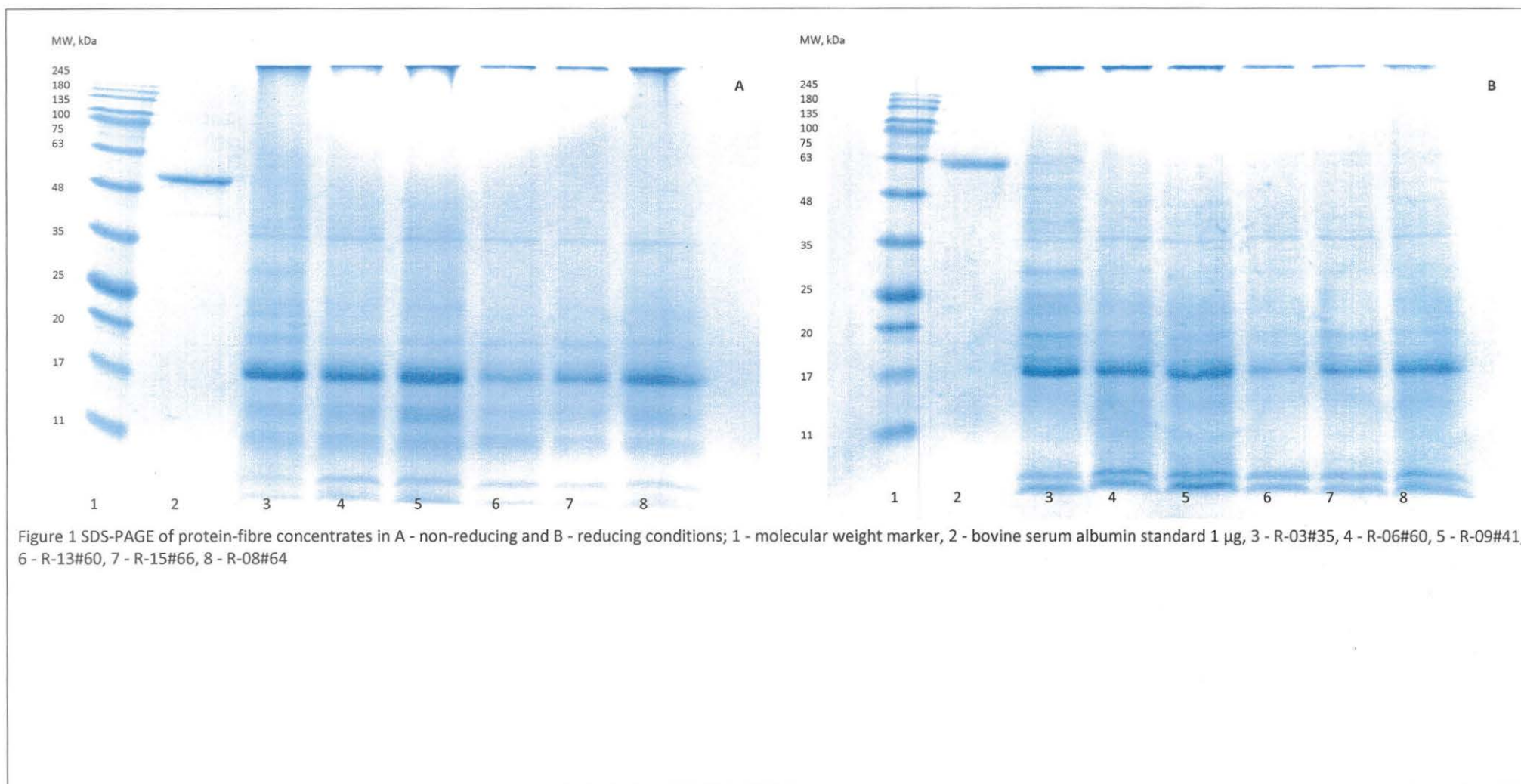


Table 1 Molecular weight, banding range, number of protein bands and the total number of bands in protein-fibre concentrates

Molecular weight range [kDa]	Non-reducing conditions						Reducing conditions					
	Line No.											
	3	4	5	6	7	8	3	4	5	6	7	8
	No. of protein bands											
<11	3	3	3	3	3	3	2	2	2	2	2	2
11-17	1	1	1	1	1	1	nd	1	1	nd	1	1
17-20	2	2	2	2	2	2	4	3	3	3	3	3
20-25	2	1	1	nd	nd	1	3	2	2	nd	nd	2
25-35	1	nd	nd	nd	nd	nd	1	nd	nd	nd	nd	nd
35-48	2	2	3	2	2	2	3	2	2	2	2	3
48-63	nd	nd	nd	nd	nd	nd	3	1	1	1	3	1
63-245	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
>245	1	1	1	1	1	1	1	1	1	1	1	1
Total bands	12	10	11	9	9	10	17	12	12	9	12	13

nd – not detected

The protein profiles of concentrates are similar in reducing and non-reducing conditions. In non-reducing conditions, we observed from 9 to 12 bands (Fig. 1 A). Their molecular weight has been estimated and detailed in Table 1. However, the highest intensity in each sample was showed by a protein of approximately 17 kDa. In reducing conditions, every sample contained from 9 to 17 different proteins (Fig. 1B, Table 1). The most intensive bands were observed for proteins with molecular weight around 17 kDa and lower than 11 kDa. The samples columns in both SDS-PAGE results contain intensive bands at the beginning of the separation gel (> 245 kDa). This phenomenon might be the result of the migration of fibre-bound protein which is too large and not sufficiently charged to migrate freely in the gel.

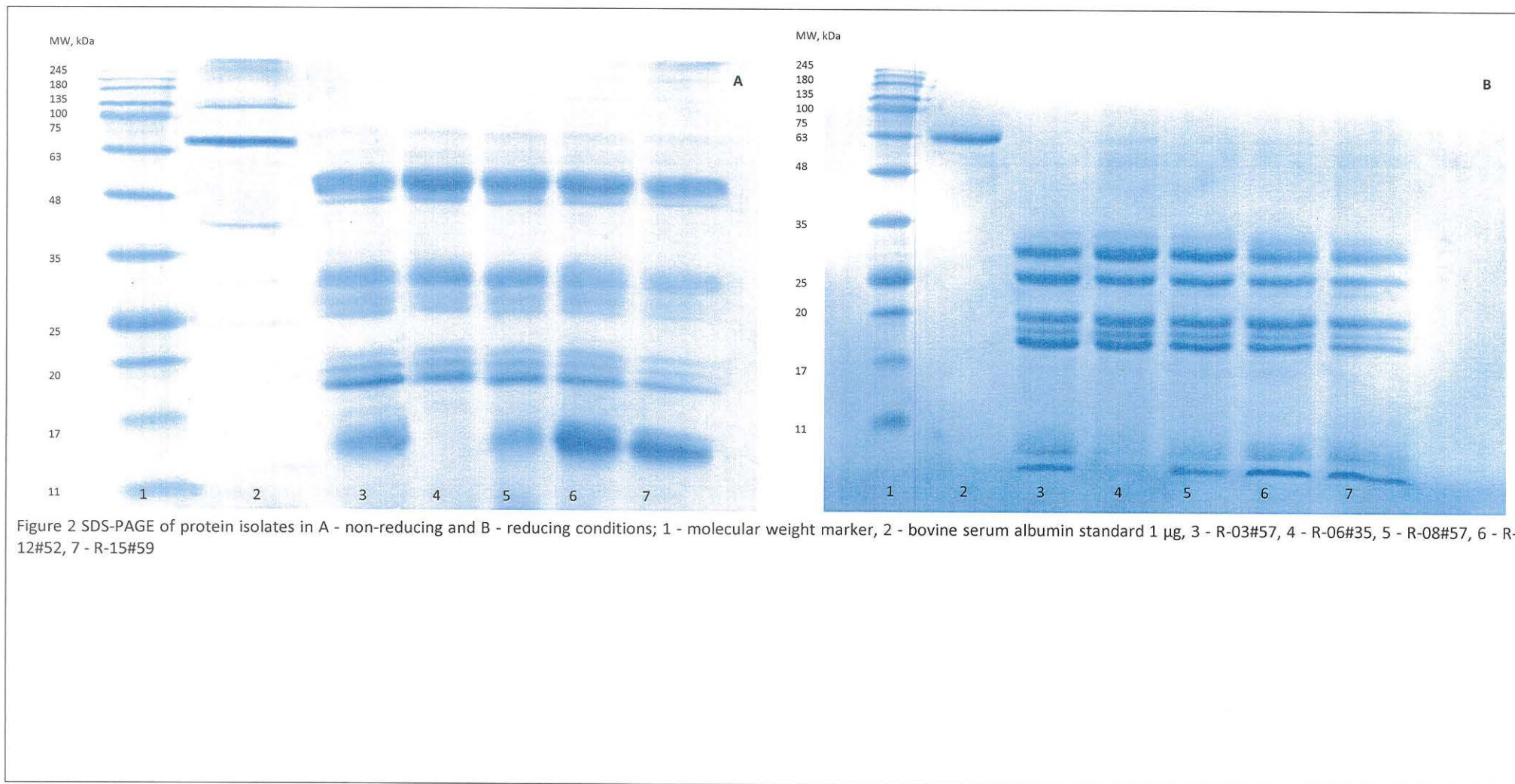


Table 2 Molecular weight, banding range, number of protein bands and the total number of bands in protein isolates

Molecular weight range [kDa]	Non-reducing conditions					Reducing conditions				
	Line No.									
	3	4	5	6	7	3	4	5	6	7
	No. of protein bands									
<11	nd	nd	nd	nd	nd	2	nd	2	2	2
11-17	1	nd	1	1	1	1	1	1	1	nd
17-20	2	2	2	2	2	4	4	4	3	3
20-25	1	1	1	1	1	nd	nd	1	1	1
25-35	3	3	3	3	3	3	3	3	3	3
35-48	1	1	1	1	1	nd	1	nd	nd	nd
48-63	1	2	2	2	1	nd	1	nd	nd	nd
63-75	1	1	1	1	1	nd	nd	nd	nd	1
75-100	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
100-135	1	1	1	1	1	nd	nd	nd	nd	nd
135-180	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
180-245	1	1	1	1	1	nd	nd	nd	nd	nd
Total bands	12	12	13	13	12	10	10	11	10	10

nd – not detected

The profiles of proteins found in isolates, obtained in reducing and non-reducing conditions, presented slightly different characteristics. In non-reducing conditions in each line, we observed 12 or 13 bands (Fig. 2 A). In most cases, there were 4 major bands with the highest intensities that corresponded to proteins with molecular weight in the range of 11-17, 17-20, 25-35 and 48-63 kDa. Line 4 showed a lack of proteins smaller than 17 kDa. In the presence of a reducing agent, in each sample, we detected from 10 to 11 proteins (Fig. 2B, Table 2). The most intensive bands were observed in the range of 17-20 and 25-35 kDa. Additionally, in lines 3, 5, 6 and 7 fractions below 11 kDa were presented.

3.3. List of attachments

B21_20 koncentrat – nieredukujące, B21_20 koncentrat – redukujące, B21_20 izolat – nieredukujące, B21_20 izolat – redukujące

Confirmation of report

4.1. Date of develop 05-10-2021	4.2. Developed by: [redacted]	4.3. Date of approval: 2021-10-11	4.4. Approved by: [redacted]

**GRAS NOTICE OF
CANOLA PROTEIN (RAPESEED PROTEIN)**

Appendix 5

**GMP+ certificate
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Prozess

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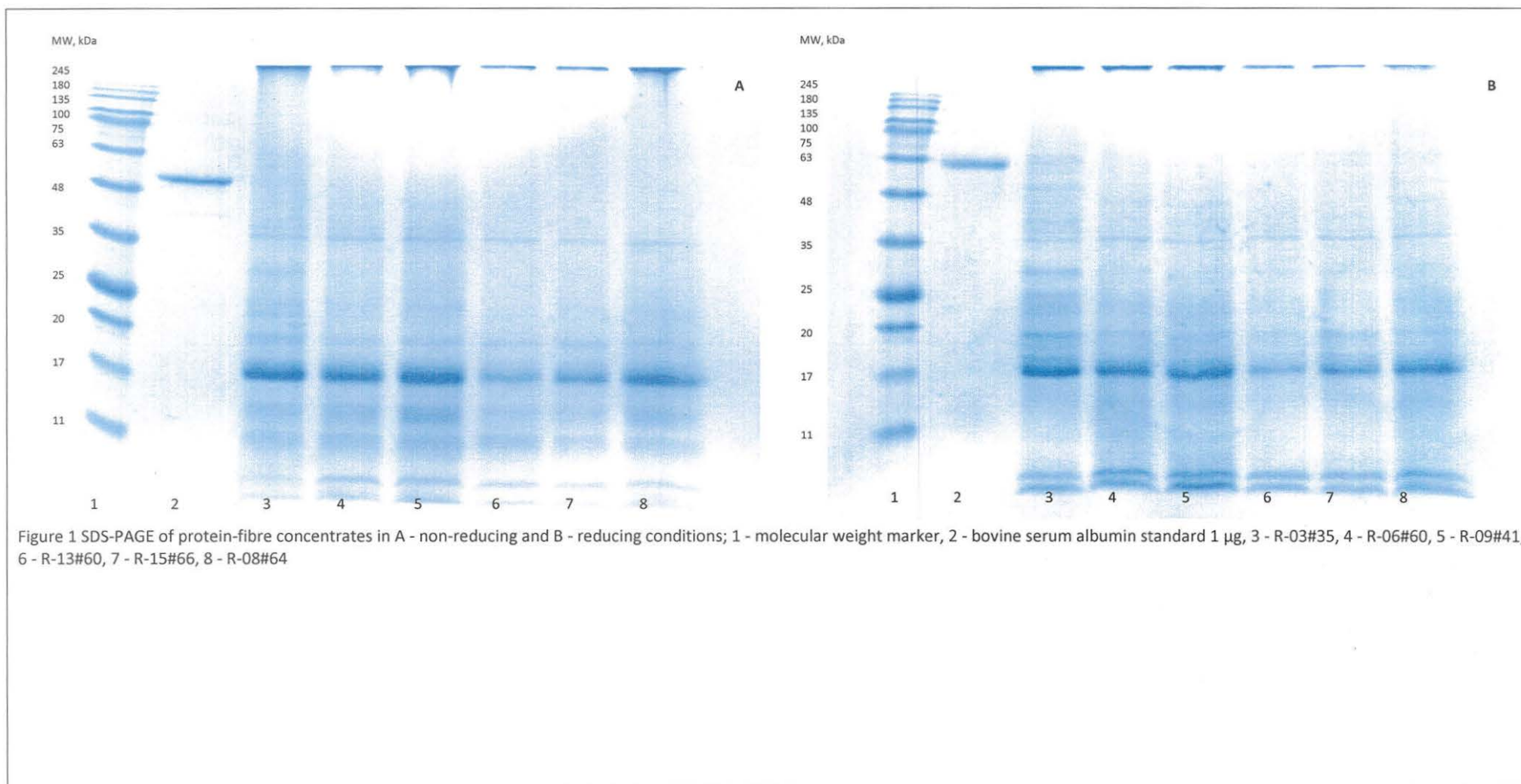


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25-35	1	nd	nd	nd	nd	nd	1	nd	nd	nd	nd	nd
35-48	2	2	3	2	2	2	3	2	2	2	2	3
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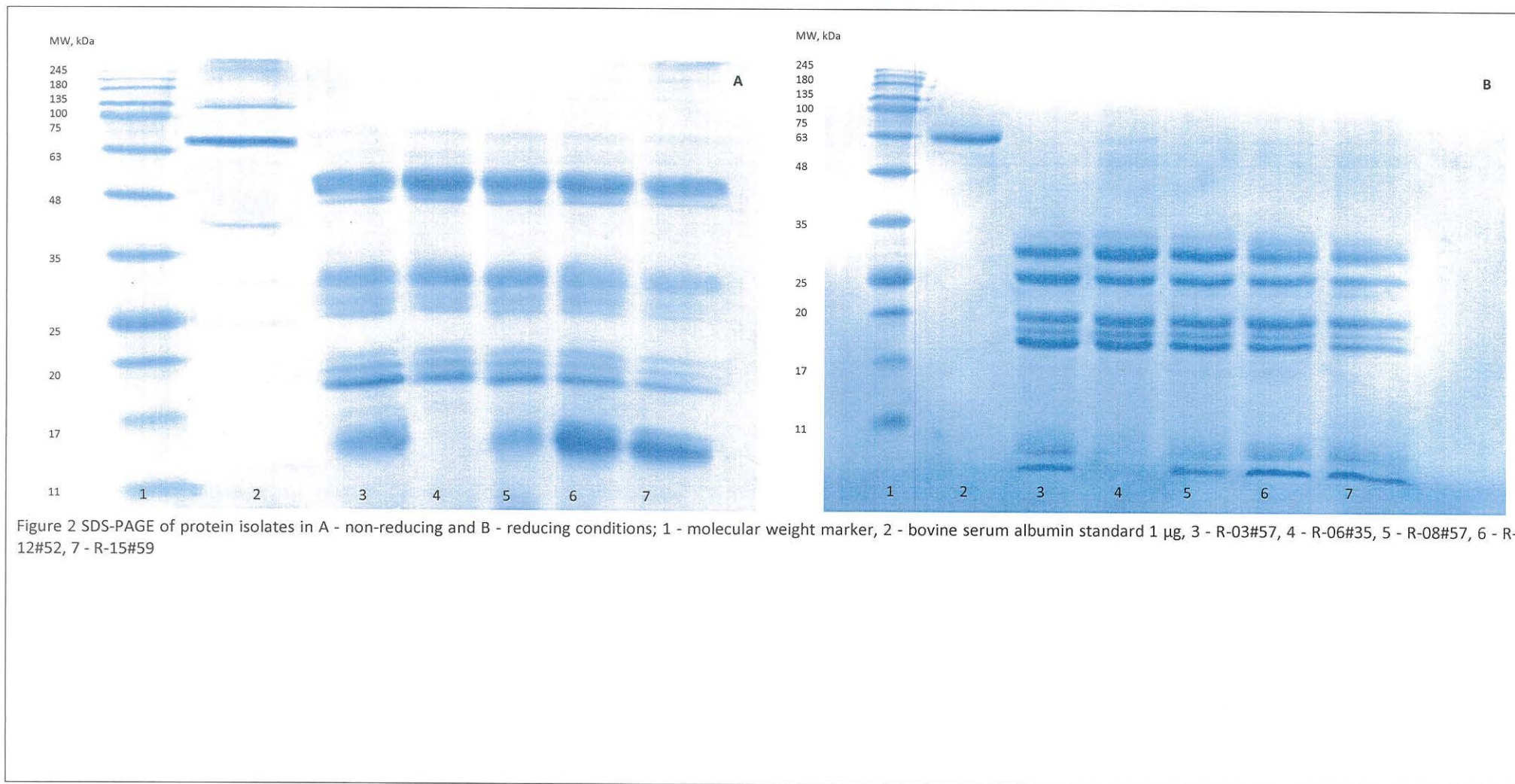


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48-63	1	2	2	2	1	nd	1	nd	nd	nd
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4.1. Date of develop 05-10-2021	4.2. Developed by: 	4.3. Date of approval: 2021-10-11	4.4. Approved by: 

Consensus Statement Concerning the Generally Recognized as Safe (GRAS) Status of the Proposed Uses of NapiFeryn's Canola Protein (Rapeseed Protein) (Raptein™90)

22 November 2021

INTRODUCTION

Bioresco, at the request of NapiFeryn BioTech, convened an expert panel of independent scientists qualified by their scientific training and national and international experience in evaluating the safety of food ingredients, to conduct a critical and comprehensive evaluation of the publicly available data and information on Raptein™90 and other Canola proteins. The charge to this panel of experts ("GRAS Panel") was to determine whether Raptein™90 would be GRAS under the proposed conditions of use as a food ingredient. The GRAS Panel consisted of the below-signed qualified scientific experts: Joseph F. Borzelleca, Ph.D., Robert J. Nicolosi, Ph.D. and Michael W. Pariza, Ph.D.

The GRAS Panel, independently and collectively, critically evaluated a comprehensive package of publicly available scientific information compiled and summarized by Bioresco and submitted to the GRAS Panel as GRAS Notice, "GRAS Notice Canola Protein (Rapeseed Protein) for Use as an Ingredient in Human Food". The information contained therein was summarized by Bioresco following its comprehensive search of the scientific literature through September 2021. The GRAS Panel also evaluated other information deemed appropriate or necessary. The information evaluated by the GRAS Panel included the history of use and regulatory status of Raptein™90, the method of manufacture and product specifications including stability, the intended levels of use and estimated consumption with specified food products, consumption estimates from all intended uses, safety data, and comprehensive literature review of Raptein™90 and related approved food ingredients.

Following independent critical evaluation of such data and information and following a teleconference (22 November 2021), the GRAS Panel unanimously concluded that under the conditions of intended use as a food ingredient (protein source) Raptein™90 meeting appropriate food-grade specifications and manufactured consistent with current Good Manufacturing Practice (cGMP), is GRAS based on scientific procedures.

SOURCE, PROCESSING AND SPECIFICATIONS

Raptein™90 is prepared by aqueous extraction of cold-pressed rapeseed cake (*Brassica napa* and/or *Brassica juncea* and/or *Brassica rapa*) that remains from the production of Canola oil. The extract is purified by filtration followed by solvent wash and drying. The product contains $\geq 90\%$ protein (on a dry matter basis). Batch analyses confirm the production of a product that meets the established food grade specifications. All processing aids are approved for use. The product is stable under the recommended storage conditions.

ESTIMATED DAILY INTAKES BASED ON PROPOSED USES

Since RapteinTM90 will be used as a substitute for other approved protein sources, the daily protein intake is not expected to be increased.

SAFETY ASSESSMENT

Since the use of Canola proteins as food ingredients has already been approved by the US FDA and since RapteinTM90 is chemically similar to other approved Canola proteins, an extensive discussion is not necessary.

Canola proteins have a long history of safe ingestion which supports their use as a dietary protein.

CONCLUSION

We, the undersigned members of the GRAS Panel, have independently and collectively, critically evaluated the information in the GRAS Notice prepared by Bioresco and we unanimously conclude that the proposed use as a protein source of Raptein™90, produced consistent with cGMP and meeting appropriate food-grade specifications as presented in the GRAS Notice, is safe.

We unanimously conclude that the proposed use of Raptein™90 as a protein source, produced consistent with cGMP and meeting appropriate food-grade specifications presented in the GRAS Notice, is GRAS based on scientific procedures.

It is our professional opinion that other qualified experts would also concur with these conclusions.

 25 November 2021

Joseph F. Borzelleca, Ph.D.
Emeritus Professor, Pharmacology & Toxicology
School of Medicine
Virginia Commonwealth University
Richmond, VA

 24 November 2021

Michael W. Pariza, Ph.D.
Professor Emeritus, Food Science
Director Emeritus, Food Research Institute
University of Wisconsin-Madison
Madison, WI

 24 November 2021

Robert J. Nicolosi, Ph.D.
Professor Emeritus of Clinical Laboratory and Nutritional Sciences
University of Massachusetts-Lowell
Lowell, MA

GRAS Notice (GRN) No. 1103 amendments

From: [Nikolaas Tilkin-Franssens](#)
To: [DiFranco, Stephen](#)
Subject: Re: [EXTERNAL]: GRN 1103 Items for clarification - Reply
Date: Tuesday, July 11, 2023 11:07:03 AM
Attachments: [image001.png](#)
[image007.png](#)
[image008.png](#)
[FDA GRN 1103 Isolate 28JUNE2023 Napiferyn Answers.docx](#)
[Literature review GRAS years 2021-2023.pdf](#)

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Stephen,

Thank you for reaching out with the questions for clarification on GRN 1103 (Canola Protein Isolate).

Kindly find attached a Word file including the Questions&Answers and a report on the requested literature review.

We remain available for any further questions or updates.

Thanks for taking the application in further consideration,
best regards,

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

T +34 936 758 015 **M** +34 649 840 417 **F** +34 936 758 016 www.pentec-consulting.eu

Pl. Ausias March 1 | 4th floor D01 | 08195 Sant Cugat del Vallès | Barcelona | Spain

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CONSULTING
PART OF THE ARGENTA GROUP

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From: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>

Date: Wednesday, 28 June 2023 at 17:05

To: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>

Subject: [EXTERNAL]: GRN 1103 Items for clarification

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Hello Mr. Tilkin-Franssens,

After evaluating NapiFeryn's GRAS Notice No. GRN 1103 on canola protein isolate we noted a few issues that should be addressed. Please respond to the following points for clarification:

1. On p. 9, NapiFeryn states that the major storage proteins in canola seed are cruciferins and napins, and that canola protein isolate consists of $\geq 90\%$ protein. Please provide the typical cruciferin content and napin content in canola protein isolate.
2. Please confirm that canola protein isolate is manufactured in accordance with good manufacturing practices using food-grade raw materials and processing aids. For the record, we note that the food additive regulations cited in Table 4 for ascorbic acid (21 CFR 182.8013), ethanol (21 CFR 184.1293), and ethyl acetate (21 CFR 173.228) do not appear to be applicable to your intended uses of these substances.
3. In Table 6 (p. 18-19), NapiFeryn provides the results from the batch analyses for heavy metals. We would like to bring to your attention a relevant FDA's "Closer to Zero" initiative that focuses on reducing the levels of heavy metals in foods and recommend that you lower the specification limits for heavy metal to better reflect the batch analyses results and to be as low as possible.
4. In Table 10 (p. 23), NapiFeryn provides batch analyses data for residual solvents and processing aids. Please explain the variability in the results provided for benzoic acid and its salts and sulphur dioxide. We also note that the level of erucic acid in your canola protein isolate is provided as $< 0.04\%$ in Table 6 (p. 18) and as $< 0.1\%$ in Tables 21 and 22 (p. 48 and 56, respectively).
 - a. Please include limits for residual ethanol, ethyl acetate, and sulphur dioxide as well as a limit for erucic acid in the specifications for canola protein isolate and specify the analytical methods used to test for these parameters.
 - b. Please provide results for erucic acid from the analyses of a minimum of three non-consecutive batches to demonstrate that canola protein isolate can be manufactured to meet the proposed specification limit for erucic acid.
 - c. In addition, please provide an updated Tables 5 (p. 17) and 7 (p. 19-20) to include the additional specification parameters mentioned above, corresponding analytical methods, and batch analyses.
5. Please state that all analytical methods used to test batches were validated and are fit for their respective purpose.

6. In Table 15 (p. 29), NapiFeryn provides the results of the batch analyses for total plate count in the raw material (rapeseed press cake). Please address the significant variation in the results (from <10 to 28,000 CFU/g) and discuss whether this will impact safety of the final ingredient.
7. On p. 19, NapiFeryn states that the levels of mycotoxins in canola concentrate are below the limit of quantitation (LOQ) and provide the results from the analyses of five batches to support your statement. Please clarify whether you expect mycotoxins to be present in canola concentrate manufactured in accordance with good manufacturing practices.
8. On p. 15, NapiFeryn states that the crude protein extract is concentrated and washed in an ultrafiltration-diafiltration (UF-DF) step and then subjected to precipitation and wash steps using solvents (ethanol and ethyl acetate) to remove antinutritional factors and impurities. You further indicate on p. 15 that the solvent precipitation and solvent wash steps are optional. If these steps are optional, please clarify whether the provided results from the analyses of five non-consecutive batches reflect the variation that would be expected if the solvent precipitation and solvent wash steps were not employed in the manufacturing process of canola protein isolate. Please state that canola protein isolate is not intended for use in infant formula or in foods where standards of identity preclude its use.
9. In Part 1.4 (p. 6) and Part 3 (p. 32), NapiFeryn states that the intended use of canola protein isolate is as a protein source, formulation aid, stabilizer and thickener, and texturizer. We note that in Appendix III (p. 5), you state that canola protein isolate may also be used “to create a flavored salt” or as “a flavor enhancer like monosodium glutamate”. Please clarify if the use of canola protein isolate as a flavoring substance and flavor enhancer are within the scope of GRN 1103.
10. On p. 32 of the notice, NapiFeryn states that canola protein will be used “as a protein substitute and therefore will not contribute any additional exposure to protein for consumers”. Please clarify whether the intended uses of canola protein isolate are substitutional or additive to other canola protein products on the market (i.e. GRN 327, 386, and 683).
11. NapiFeryn states that their canola protein isolate contains greater than 90% protein, and a concern with protein ingredients is allergenicity. We note the following:
 - a. Rapeseed and mustard are both members of the Brassicaceae family. Napins and cruciferins are known allergenic proteins, and napins in oilseed rape and mustard are highly cross-reactive. [\[1\]](#),[\[2\]](#)
 - b. NapiFeryn has included an unpublished report (Appendix 4) detailing allergenicity analysis performed by the VTT Technical Research Centre of Finland. On p. 56 of the notice, you note that “the sequence searches (using FARRP allergen protein database) indicated the possible allergenic effects” of your ingredient, however there was no further discussion of these potential allergenic effects, and why this is not considered a safety concern.Please provide a robust narrative, using the publicly available published literature, data, and information, summarizing the potential allergenicity concerns of canola protein isolate and why there is no safety concern from your intended use. Since the allergenicity report from VTT included in the Appendix is unpublished, data and conclusion for this analysis cannot be used to satisfy “generally available and generally accepted” criteria for your GRAS

conclusion. However, you may choose to provide a summary and conclusion from your report in your narrative as corroborative evidence to support your conclusion that consumption of canola protein isolate poses a low risk for allergic reactions.

12. On p. 37, NapiFeryn concludes that exposure to canola protein from the intended uses is safe since the EDI reported is “still much lower (approximately 4- to 12-fold lower) than the no-observed-adverse-effect level (NOAEL) values established” for cruciferin- and napin-rich protein isolates in male rats following a 13-week oral exposure regimen (Mejia *et al.*, 2009a & 2009b). We note that an uncertainty factor, or margin of safety (MOS), of 100 (10 for interindividual variability × 10 for interspecies variability) is normally used when assessing safety of a food ingredient by comparing estimated human exposure levels to the NOAEL from animal toxicology data. Therefore, it is not clear why a MOS that is much lower than 100 can be concluded as safe without justification. Additionally, we note that potential thyrotoxic effects were observed at the highest doses in these two rat studies, as well as for rapeseed products in general tested in other species, as cited in Table 20 of the GRAS notice. This effect was mostly attributed to the presence of glucosinolates; however, we note that since the level of glucosinolates was low or absent in both the test articles from Mejia *et al.* and the article of commerce, the rationale used by the study authors to conclude that the observed NOEL was not in fact the NOAEL may be questionable. Regardless, it appears that the provided safety narrative lacks sufficient basis to conclude that a MOS of 4-12 is adequate to reach the conclusion of “reasonable certainty of no harm.” Based on generally available data and information, please provide additional narrative to explain your rationale for your GRAS conclusion.
13. We note that in a search of the literature pertaining to the safety of canola protein, an article titled “*Removal of anti-nutritional factors of rapeseed protein isolate (RPI) and toxicity assessment of RPI*” was found.^[3] This study was not discussed in the safety narrative of the notice; however, as the test article is similar to NapiFeryn’s canola protein, this study appears to be relevant to your safety assessment. Please summarize the findings and discuss any relevant safety concerns.
 - a. We note that NapiFeryn conducted a literature search through 2021. Please perform an updated literature search through 2023 and summarize any additional publications that pertain to safety of canola protein.

Responses may be sent in an email or in a separate document. We respectfully request a response within 10 business days. If you are unable to complete the response within that time frame, please contact me to discuss further options.

If you have any additional questions or concerns, please don’t hesitate to contact me at stephen.difranco@fda.hhs.gov or by phone at 240.402.2710.

Best,

Steve

Stephen DiFranco, PhD

Regulatory Review Scientist/Chemist

Center for Food Safety and Applied Nutrition
Office of Food Additive Safety
Division of Food Ingredients
U.S. Food and Drug Administration
Tel: 240-402-2710
stephen.difranco@fda.hhs.gov



From: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Sent: Tuesday, June 27, 2023 2:47 AM
To: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Subject: Re: [EXTERNAL] FDA GRAS Notification - Raptein30 - status

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Hi Mr. DiFranco,

Allow me to follow up after our call we had on 26 May.

Thanks again for guiding us through the thoughts of the review team regarding the Raptein (rapeseed protein) GRAS dossiers (GRN 1103 and GRN 1122).

Can you give us any indication when we may receive the letter?
This would allow us to organise the reply in the best possible way.

Kind regards,

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

T +34 936 758 015 **M** +34 649 840 417 **F** +34 936 758 016 www.pentec-consulting.eu

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From: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Date: Wednesday, 17 May 2023 at 18:20
To: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Cc: Nicoleta Pasecinic <nicoleta@pentec-consulting.eu>
Subject: RE: [EXTERNAL] FDA GRAS Notification - Raptein30 - status

Hello Mr. Tilkin-Franssens and Ms. Pasecinic,

As you know we are currently reviewing both GRN 1103 and GRN 1122. As is typical in the GRAS program, our review team often has minor questions for clarification which we ask the notifier to respond to prior to issuing a response letter.

These notices share many similarities, as the products are both derived from canola. Hence, our team has identified a few minor issues common to each. We thought it might be best to have a short teleconference with you such that we can clarify some of the additional information that we are seeking—in both notices.

I've identified the following time slots in which our team is available—trying to account for the time difference. Would any of these be suitable for you to meet:

Monday May 22: 9-10am EDT or 10-11am EDT (3-4pm or 4-5pm CEST)

Wednesday May 24: 1-2pm EDT (7-8pm CEST)

Thursday May 25: 10-11am EDT or 11-noon EDT (4-5pm or 5-6pm CEST)

Friday May 26: 10-11am EDT (4-5pm CEST)

Please let me know and I can book the meeting.

Thanks,

Steve

Stephen DiFranco, PhD

Regulatory Review Scientist/Chemist

Center for Food Safety and Applied Nutrition

Office of Food Additive Safety
Division of Food Ingredients
U.S. Food and Drug Administration
Tel: 240-402-2710
stephen.difranco@fda.hhs.gov



From: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Sent: Wednesday, May 17, 2023 11:02 AM
To: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Subject: Re: [EXTERNAL] FDA GRAS Notification - Raptein30 - status

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Hi Stephen,

Thank you for the confirmation. We have well received the filing.

KR

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

T +34 936 758 015 **M** +34 649 840 417 **F** +34 936 758 016 www.pentec-consulting.eu

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From: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Date: Monday, 15 May 2023 at 15:32
To: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Subject: RE: [EXTERNAL] FDA GRAS Notification - Raptein30 - status

Hello Mr. Tilkin-Franssens,

GRN 1122 on canola concentrate submitted on behalf of NapiFeryn was filed as of April 19, 2023. An official filing letter was sent to Ms. Pasecinic stating such. Currently the notice is under review by our staff scientists.

Thanks,

Steve

Stephen DiFranco, PhD

Regulatory Review Scientist/Chemist

Center for Food Safety and Applied Nutrition

Office of Food Additive Safety

Division of Food Ingredients

U.S. Food and Drug Administration

Tel: 240-402-2710

stephen.difranco@fda.hhs.gov



From: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Sent: Friday, April 14, 2023 3:30 AM
To: Kampmeyer, Christopher <Christopher.Kampmeyer@fda.hhs.gov>
Subject: Re: [EXTERNAL] FDA GRAS Notification - Raptein30 - status

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Hi Christopher,

Allow me to check with you.

Can we know if the prefilling of Raptein 30 is moving forward?

I want to make sure no other issues were found, as we had quite some setbacks already with this submission.

Thanks for your ever supportive attitude.

Have a great day!

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

T +34 936 758 015 M +34 649 840 417 F +34 936 758 016 www.pentec-consulting.eu

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Puumalainen TJ et al. 2006. Napins, 2S albumins are major allergens in oilseed rape and turnip rape. *J Allergy Clin Immunol.* 117(2): 426-432.

[2] Fiocchi A et al., 2016. Precautionary labelling of cross-reactive foods: The case of rapeseed. *Asthma Res Pract.* 2(13): 1-8.

[3] Xiong Z., et al., *Removal of anti-nutritional factors of rapeseed protein isolate (RPI) and toxicity assessment of RPI.* Food Funct, 2022. **13**(2):664-674.

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Literature Search Strategy protocol: Safety of Raptein™30 and Raptein™90 in support of GRAS Notices

Product: Rapeseed/canola protein concentrate and isolate

Client: NapiFeryn BioTech

Prepared by: Pen&Tec Consulting

Date: 10 July 2023

Executive summary:

A comprehensive search of the scientific literature was conducted to review the safety of NapiFeryn's rapeseed/canola protein-fibre concentrate Raptein™30 and rapeseed/canola protein isolate Raptein™90 and their components, destined for human consumption. Two databases were searched: CAB Abstracts® and the Food Science and Technology Abstracts (FSTA®). The search was limited to the last two years since submission of the GRAS notice (years 2021-2023 to date of search: 04 July 2023)).

1. Background and Introduction

NapiFeryn BioTech (NFB) is interested to bring its rapeseed/canola protein-fibre concentrate Raptein™30 and rapeseed/canola protein isolate Raptein™90 to the United States market, to be used as a food ingredient in a variety of foods and beverages at use levels ranging from 5% to 100%. (*e.g.*, bakery products, breakfast cereals, grain products, pastas, bars, protein-fiber and nutritional powders, beverages and beverage bases non-alcoholic, milk products and dairy analogs, coffee and tea etc.).

2. Question and objective

Question

Does the consumption of rapeseed/canola proteins, either isolate or concentrate form, raise any health safety issues, specifically due to the potential presence of undesirable substances (i.e. contaminants or anti-nutritional factors (ANFs))?

N.B.: the presence of potential undesirable substances is controlled as part of the manufacturing process and applicable food safety and quality management systems in the production of Raptein™30 and Raptein™90.

3. Topics of interest

The topic of interest for this literature search is the safety for humans (i.e., human safety data and *in vitro* and *in vivo* (from experimental animals) toxicity data).

3.1. Inclusion/Exclusion criteria

The following inclusion and exclusion criteria were defined *a priori*.

Inclusion criteria:

- Studies, publications, or case reports (human studies/testing, immunological tests, relevant protein analysis) that investigate the safety and any potential toxicity of rapeseed/canola proteins, or concentrates or isolates thereof specifically;
- Toxicological studies, reports and case studies related to the safety of *Brassica napus*, *Brassica rapa* and *Brassica juncea* (including those for humans, if any);
- Consider studies in all languages

- Studies analysing chemical residues of concern or anti-nutritional factors in the interested *Brassica* species.

Exclusion criteria:

- Publications not relevant to the safety and toxicity topics of the literature search
- Abstracts related to patent registration of description
- Biocidal studies
- Ecotoxicology studies (e.g., plant growth/ plant disease/ soil crops studies)
- Therapeutical/positive effect: reported effects can be regarded as favourable rather than adverse (positive effects) e.g.: studies addressing health benefits (e.g., activity against cancer cell lines, diabetes or present protective aspect against some pathologies)
- Studies on pesticides
- Abstracts whose full- text pdfs are not retrievable
- Duplicates

The search terms and details of the literature search are specified in Table 1. The outcome of the search was exported as an EndNote library and the file is available upon request in .ciw (EndNote) format.

4. Search strategy

4.1. Study selection and assessment

EndNote was used for the selection process, which was performed in the steps indicated below:

- The search was conducted using the Web of Science platform and covered two databases (FSTA and CABI) using the key terms as described in Table 1.
- Importation of hits in EndNote
- Screening of titles and abstracts against inclusion/exclusion criteria (First screening)
- Full-text screening of selected references considered up for inclusion (Second screening)
- Write-up literature review

4.2. Search strategy

A search was conducted using the following databases: CAB Abstracts® and the Food Science Resource (FSTA®). The time-period searched was limited to two years (2021-2023 [up to 4 July]), while there was no limitation related to the language of publication. The search terms used are defined in Table 1 and the outcome for the literature search is described in section 5 below.

In brief, the results of the literature search were copied into an EndNote™ file and the titles and abstracts were independently screened for relevance. References for which only a title was available and/or abstracts for which the reviewer could not make a decision were included by default in the list of full manuscripts to be obtained. For the references that could not be obtained at the first attempt, follow-up attempts were made to obtain the full manuscript. References meeting the inclusion criteria were considered relevant. Data from abstracts were used only where it was unlikely that the information contained in the full manuscript would change the conclusions of this review in a clinically meaningful way.

Search terms were chosen specific to the research question. Descriptors were used to identify relevant articles in both databases, as shown below. Descriptors are specific to each database, hence the differences between the search criteria in Table 1 below.

Table 1: Search for safety and toxicity, of Canola proteins (concentrate or isolates) in CAB Abstracts® and FSTA®. Interface: Web of Science		
Period searched: 2021 – 2023. Search was carried out 4 July 2023		
Search set: CABI: CAB Abstracts® FSTA® - the food science resource		
Search combinations and number of items found		
Subject areas	Search sets	Number of items found
CAB Abstracts®	#Descriptors: (rapeseed OR rapeseed protein OR canola OR brassica napus OR brassica rapa OR brassica juncea)) AND #Topic:("protein*" OR concentrate or isolate))) AND #Descriptors: (food safety OR toxicity OR toxic substances OR antinutritional factors) Filter: years 2021-2023 (up to 3 July 2023)	47
FSTA®	# Descriptors: (canola OR rapeseeds OR brassica napus OR brassica rapa OR brassica juncea) AND #Descriptors: (protein isolates OR protein concentrates OR proteins) AND #Descriptors: (food safety plant foods OR food safety animal foods OR toxins OR anti-nutritional compounds OR anti-nutritional factors OR antinutritional factors) Filter: years 2021-2023 (up to 3 July 2023)	11

5. Literature search outcome

5.1. Literature retrieved from databases

The literature search identified a total of 58 publications in a combined CABI Abstracts and FSTA search. Results from each database were individually screened for relevance. Ultimately, 11 publications were considered relevant from both databases and included in the discussion for the safety assessment of the rapeseed proteins for human consumption.

5.2. Results and discussion

The exclusion criteria leading to the greatest number of papers excluded are provided along with the number of papers affected:

- Publications not relevant to the safety or toxicity topics of the literature search: 22 (CABI abstracts) / 7 (FSTA)
- Species not relevant: 2 (CABI abstracts) / not applicable (FSTA)
- Ecotoxicology/plant studies (e.g., plant growth/ plant disease/ soil crops studies): 2 (CABI abstracts) / not applicable (FSTA)
- Therapeutical/positive effect: 3 (CABI abstracts) / 1 (FSTA)
- Studies on pesticides: 2 (CABI abstracts) / 1 (FSTA)
- Abstracts whose full- text pdfs are not retrievable: 2 (CABI abstracts) / 1 (FSTA)
- Duplicates: 1 (CABI abstracts) / not applicable (FSTA)

Rapeseed safety and residues of concern

Rapeseed is characterised as the second largest and an excellent source of plant proteins across the globe, with an ideal profile of essential amino acids, while is used widely in human and animal nutrition. Chmielewska A. and colleagues, presented in 2021 a comprehensive review of oilseeds of *Brassica* family (mainly consisting of canola/rapeseed proteins: cruciferin and napin), focusing on their possible applications in food, while also addressing the need to obtain rapeseed protein products free from anti-nutritional factors. The outcome of their research showed that rapeseed proteins demonstrate beneficial nutritional value (and functional properties). However, the authors, do mention the need of paying attention to the allergenic potential of predominant canola/rapeseed proteins, such as 2S napin, as well as to the presence of undesirable anti-nutritional factors such as glucosinolates, phenolic compounds including sinapine and condensed tannis, phytates, or fibre, which are formed during different metabolic processes as side products and could affect the safety of the rapeseed products used in human or animal nutrition. The study concluded that although the abovementioned anti-nutritional factors are still considered to be the main disadvantage of rapeseed proteins use for human food applications, current technological processes allow elimination up to 100% of tannic acid, 92% of phytic acid and 95% of glucosinolates.

The latter anti-nutritional elements and their role in feed safety were also described by K. Golebiewska et al. in 2022. Overall, the published review study explains that although few of these elements (e.g., glucosinolates) may not be toxic to animals in their original form, products of their hydrolysis may be harmful to animals and lead to lower feed intake. Therefore, the review concluded that the presence of these elements, constitute a limitation in the use of rapeseed meal (RSM) in monogastric animal nutrition, and is essential for the feed safety to be significantly reduced through the fermentation process applied.

In another recent review study published in 2022, F.Kaiser and his colleagues investigated the use of rapeseed proteins as alternative to fish meals, since rapeseed protein products are highly available on a global scale and provide one of the most balanced amino acid composition among plant-based protein sources. However, this review study also identified the presence of anti-nutritional factors in rapeseed products, such as phytic acid, protease inhibitors and tannins, which although can be considered negligible at low concentrations, their negative impact on animal safety, besides their undesirable effects on nutrient digestibility and diet palatability, can be influenced by multiple factors and should be taken into consideration.

According to the study, several of the anti-nutritive substances including glucosinolates, phytic acid, sinapine and tannins are responsible for multiple issues concerning the health status of animals, such as liver haemorrhage, toxicity for liver and kidney, increased organ weight, disturbed thyroid function like goitre, neurotoxicity, mutagenicity and even mortality. Consequently, the authors concluded that potential dietary tolerance levels for anti-nutritive substances in rapeseed protein products appear to be roughly 0.7 $\mu\text{mol/g}$ for glucosinolates, 0.4% for phytic acid, 0.5% for proteinase inhibitors, 0.2% for tannins and 3% for crude fibre in multiple species of fish according to experimental results from current literature. On the contrary, due to the variety of influencing factors involved, accurate safe thresholds for other animal species and humans were impossible to be predicted from the current review and more research is required (F.Kaiser et al.2022)¹.

Additionally, F.Kaiser and his team investigated in more detail the effect of certain supplemented anti-nutritive substances from rapeseed such as phytic acid and glucosinolates on fish health. During this study, growth and health performance of rainbow trout (*Oncorhynchus mykiss*) was evaluated after 38 and 56 days of feeding, with diets rich in glucosinolates and phytic acid respectively. The results of the study showed that high inclusion levels of phytic acid supplemented for 56 days led to impaired feed intake (and consequently decreased animal growth) and therefore was concluded that phytic acid should be kept at lowest inclusion level possible until further research is done. With regards to supplementation of glucosinolates for the designated period (38 days), no significant negative effect was observed in the health status of *Oncorhynchus mykiss*. However, it is highlighted that the short experimental duration should be considered for the above conclusions (F.Kaiser et al., 2021)².

According to Liu S. and his colleagues, high amounts of glucosinolates (GSLs) which are found in rapeseed by-products, could negatively affect the health of animals, such as pigs, since they are degraded by myrosinase enzymes to produce a variety of anti-nutritional factors, like isothiocyanates (ITCs), tannins, thiocyanates and phytic acid. The authors advocate that several studies have found that long-term intake of feedstuff containing high doses of ITCs reduced intake and growth, induced liver and thyroid hypertrophy, and caused acute gastroenteritis, such as diarrhea, colic and mouth-foaming in pigs.

Xiong Z. and his team highlighted in their study the potential safety concerns raised for humans related to the presence of anti-nutritional factors (ANFs) in rapeseed protein isolate (RPI) and stressed the importance of their removal, prior to human consumption. For this purpose, a treatment combining phytase and ethanol was applied. The de-toxification treatment of the rapeseed protein isolate led to significant removal of ANFs and the no-observed-effect level (NOEL) for detoxified RPI was established at 10 g kg⁻¹ of detoxified RPI, whereas the no-observed-adverse-effect-level (NOAEL) was the highest fed level of 20 g kg⁻¹ of detoxified RPI. The study concluded that rapeseed protein isolate was safe for human consumption, after the de-toxification treatment and the significant removal of anti-nutritional factors.

Another study, (F. Kaiser et al., 2021)³ tested a highly purified rapeseed protein isolate with high protein content and low levels of both Nitrogen-free extracts (NfE) and anti-nutritive substances (ANFs), to assess its suitability as fish meal replacement. The outcome of this study, where control diet was gradually replaced by rapeseed protein isolate to 33%, 66% and 100% of digestible protein and

¹ F. Kaiser, H. Harbach and C. Schulz. Rapeseed proteins as fishmeal alternatives: a review. *Reviews in aquaculture*. Vol.14, P.1887-1911, 2022.

²F. Kaiser, H. J. Harloff, R. P. Tressel, D. Steffens, H. Seibel, C. Jung and C. Schulz. Effects of supplemented anti-nutritive substances from rapeseed on growth and health performance of rainbow trout (*Oncorhynchus mykiss*). *Aquaculture nutrition*. 2021.

³F. Kaiser, H. J. Harloff, R. P. Tressel, T. Kock and C. Schulz. Effects of highly purified rapeseed protein isolate as fishmeal alternative on nutrient digestibility and growth performance in diets fed to rainbow trout (*Oncorhynchus mykiss*). *Aquaculture nutrition*. Vol.27, P.1352-1362, 2021.

energy, showed no significant effect on fish health parameters (e.g., viscerosomatic index, fish weight, hepatosomatic index, spleen somatic index and Fulton's condition factor), after 56 days observation.

Liwei Liu et al., described the adverse physiological and toxicological impacts of anti-nutritional factors and toxicants, such as tannin, identified in rapeseed on fish (*Ctenopharyngodon idellus*). Different concentrations of dietary tannin (1.5, 7.2, 19.9, 39.4, 83.2 and 162.0 g kg⁻¹ diet) were tested and the outcome of this study showed that high levels of dietary tannin (≥ 39.4 g kg⁻¹ diet) lowered immunity (serum superoxide dismutase and catalase activities and the contents of total protein, albumin, complement component C3 and C4) ($p < .05$) and damaged the hepatic structure of grass carp (*Ctenopharyngodon idellus*), leading to attenuated growth. The study suggested that grass carp could not tolerate dietary tannin of >19.9 g kg⁻¹.

Liping Zhu and his team reported fatty liver hemorrhage syndrome (FLHS) observed in hens after fed with rapeseed meal (RSM). The results of their study indicated that from overall 600 laying hens tested, 3 hens died due to liver hemorrhage after ingesting 14% RSM diet. The 14% RSM decreased serum low-density lipoprotein cholesterol (LDL-C) content ($P < 0.01$) while tended to increase serum trimethylamine N-oxide (TMAO) content compared to the control group ($P = 0.08$). The 14% RSM diet also increased total cholesterol (TC) and LDL-C content in the liver ($P < 0.01$, and $P < 0.01$, respectively). The liver total bile acid (TBA) content was decreased compared to the control ($P < 0.01$). Recent metabolomic approaches have identified that plasma trimethylamine-N-oxide (TMAO), is a novel and independent risk factor for promoting incidence of cardiovascular diseases (CVD), such as atherosclerosis (AS) both in humans and mice.

In the European Union, rapeseed products (i.e., oil), are regularly consumed by the population while other forms such as protein isolates and oilseed rape powders are not yet as common. The European Food Safety Authority (EFSA), has recently assessed the safety of genetically modified rapeseed product from *Brassica napus* (MON 94100), and has issued positive scientific opinion supporting its safety for humans, animals and the environment (under the proposed conditions of use), as similarly indicated for its conventional non-GM counterparts (Advanta Hyola 575 CL, Brett Young 5535 CL, Brett Young 5545 CL, Dekalb 71–30 CL, Mycogen 2020 CL, Mycogen 2022 CL, Mycogen 2024 CL, Pioneer 45H76, Pioneer 46H75, Rubisco Atomic TT, Rubisco DL1501 CL and Rubisco Trapper). Similar conclusions were presented by EFSA after the safety assessment of genetically modified oilseed rape 73496 and its conventional non-GM counterpart, which was found to be safe for human, animal consumption and the environment, under the proposed conditions of use.

6. Conclusions

The current search of the literature, conducted for the years between 2021-2023, identified several published studies describing the wide use of rapeseed products in human and animal nutrition. Although no significant evidence of safety concerns or adverse effects directly related to rapeseed protein-fibres were described, in the available publications, the literature search detected multiple indications for safety concerns related to the presence of residues and anti-nutritional factors (e.g., glucosinolates, phenolic compounds including sinapine and condensed tannins, phytates etc), in rapeseed isolates and by-products, such as rapeseed meals.

Overall, although no direct relationship of such anti-nutritional factors with Raptein™30 and Raptein™90 was reported, this review concludes that the presence of residues and anti-nutritional factors should be monitored and be reduced with appropriate treatments (e.g., by de-toxification following combined treatment of phytase and ethanol), before human consumption. Therefore, following significant removal of any ANFs, rapeseed/canola protein-fibre concentrate Raptein™30 and rapeseed/canola protein isolate Raptein™90 should be considered safe to be used as food for humans,

with a limited likelihood of causing adverse reactions or safety issues, at the proposed conditions of use.

7. References

7.1. Databases and software used

- CABI: CAB Abstracts®
- FSTA® - the food science resource
- EndNote X9.3.3 Clarivate, Desktop application

7.2. Bibliography

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**GRN 1103 - Raptein™90 - Canola protein isolate:
Replies to request for clarification of 28 June 2023**

1. On p. 9, NapiFeryn states that the major storage proteins in canola seed are cruciferins and napins, and that canola protein isolate consists of $\geq 90\%$ protein. Please provide the typical cruciferin content and napin content in canola protein isolate.

Answer:

Protein isolate is characterized by the content of cruciferins $>60\%$ and content of napins $<40\%$. More typical protein content in protein isolate is 70-95% of cruciferins and 5-30% of napins.

2. Please confirm that canola protein isolate is manufactured in accordance with good manufacturing practices using food-grade raw materials and processing aids. For the record, we note that the food additive regulations cited in Table 4 for ascorbic acid (21 CFR 182.8013), ethanol (21 CFR 184.1293), and ethyl acetate (21 CFR 173.228) do not appear to be applicable to your intended uses of these substances.

Answer:

Napiferyn hereby confirms that canola protein isolate is manufactured in accordance with good manufacturing practices, using food-grade raw materials and processing aids.

We acknowledge the CFR references included are not accurate on the intended uses, but merely support the identity of the used processing aids.

3. In Table 6 (p. 18-19), NapiFeryn provides the results from the batch analyses for heavy metals. We would like to bring to your attention a relevant FDA's "Closer to Zero" initiative that focuses on reducing the levels of heavy metals in foods and recommend that you lower the specification limits for heavy metal to better reflect the batch analyses results and to be as low as possible.

Answer:

Based on results from samples of several batches Napiferyn can commit to lower the limits for Lead and Arsenic.

	Arsenic (mg/kg)	Cadmium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
Current	$\leq 0,2$	$\leq 0,2$	$\leq 0,5$	$\leq 0,1$
Isolate (new)	$\leq 0,15$	$\leq 0,2$	$\leq 0,35$	$\leq 0,1$

4. In Table 10 (p. 23), NapiFeryn provides batch analyses data for residual solvents and processing aids. Please explain the variability in the results provided for benzoic acid and its salts and sulphur dioxide. We also note that the level of erucic acid in your canola protein isolate is provided as $< 0.04\%$ in Table 6 (p. 18) and as $< 0.1\%$ in Tables 21 and 22 (p. 48 and 56, respectively).
 - a. Please include limits for residual ethanol, ethyl acetate, and sulphur dioxide as well as a limit for erucic acid in the specifications for canola protein isolate and specify the analytical methods used to test for these parameters.
 - b. Please provide results for erucic acid from the analyses of a minimum of three non-consecutive batches to demonstrate that canola protein isolate can be manufactured to meet the proposed specification limit for erucic acid.

- c. In addition, please provide an updated Tables 5 (p. 17) and 7 (p. 19-20) to include the additional specification parameters mentioned above, corresponding analytical methods, and batch analyses.

Answer:

Please consider the updated tables 5 (Specifications) and 7 (Analytical results from 5 batches) below.

The observed variability in the results provided for benzoic acid and its salts and sulphur dioxide are due to the products analysed being from different batches, there was the variability in the process. As regards the level of erucic acid, unfortunately, in Table 6 on p18 there is a typing error - according to the certificates, the results for erucic acid are <0.1% of total fatty acids.

Napiferyn considers that there is no need to add analytical data on erucic acid to the specification. We do observe that the GRAS Notice dossier does not clearly specify that the percentage relates to % of total fatty acids, meaning that the results for 5 independent batches are in fact <0.1% (<LOQ) of total fatty acids. The total fat level of canola protein isolate is $\leq 2\%$ DM.

As such, there is no possibility of a higher presence of erucic acid. Napiferyn sources solely low erucic acid varieties of rapeseed/canola, in accordance with 21 CFR §184.1555.

The results for erucic acid from the analyses of five non-consecutive batches are included in the dossier (Table 21, p. 48). Napiferyn can perform additional analysis upon FDA request if required, and a timeline is provided for delivering the results.

Parameter	Lot No. R-03#57	Lot No. R-06#35	Lot No. R-08#57	Lot No. R-12#52	Lot No. R-15#59
Erucic Acid [% of total fatty acid]	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)

Below table 5 includes the updated specifications (updated Table 5) as per request. Napiferyn acknowledges that batches should meet the levels specific in the specification. Any results outside of the limits, would be rejected.

Table 5. Product specifications for canola protein (Raptein™90)

Parameter	Unit	Value	Method
Appearance	-	white to off-white dried powder	Visual
Composition**			
Total protein (N*6.25)	%	30 - 45	ISO 1871:2009
Carbohydrates	%	≤ 65	By difference*

Fat (direct)	%	≤ 2	PB/CH/16 version 3 from 09.11.2018
Ash	%	≤ 5	PN-A-79011-8:1998
Moisture	%	≤ 7	PN-A-79011-3:1998
Total dietary fiber (TDF)	%	40 - 70	AOAC 2011.25-M
Total glucosinolates	mmol/kg	≤ 0.3	ISO 9167-1:1992; AOCS Ak 1-92
Purity**			
Phytates	%	≤ 2	Analytical Biochemistry Vol. 77:536-539 (1977)
Lead	mg/kg	≤ 0.35	DIN EN 15763:2010 (2010-04), mod.
Arsenic	mg/kg	≤ 0.15	§64 LFGB L 00.00-19/3
Cadmium	mg/kg	≤ 0.2	DIN EN 15763:2010 (2010-04), mod.
Mercury	mg/kg	≤ 0.1	DIN EN 15763:2010 (2010-04), mod.
Microbiological criteria			
Total plate count	cfu/g	≤ 10 ⁴	PN-EN ISO 4833-1:2013-12
<i>E. coli</i>	-	absence in 10 g	PN-ISO 7251:2006
<i>Salmonella</i> spp.	-	absence in 25 g	PN-EN ISO 6579-1:2017-04
Yeast and Molds	cfu/g	≤ 100	PN-ISO 21527-2:2009
Total coliform count	cfu/g	≤ 10	PN-ISO 4831:2007

<i>Enterobacteriaceae</i>	cfu/g	< 10	PN- EN ISO 21528-2:2017-08
Potential contaminants			
Residual Ethanol**	mg/kg	<600	HH-MA-M 03-011, Headspace, GC-FID: 2019-01
Residual Ethyl Acetate**	mg/kg	<600	HH-MA-M 03-011, Headspace, GC-FID: 2019-01
Residual Sulphur Dioxide**	mg/kg	< 10	PN-EN 1988-1:2001
*Carbohydrates are calculated by difference as follows: 100 % - [protein (as is) % + moisture % + fat % + ash %] **On dry matter (except of moisture) PN-A - polish standard; LFGB - Lebensmittel-und-Futtermittelgesetzbuch (German Food and Feed Act); DIN - Deutsches Institute für Normung (German institute for standardization); AOCS - American Oil Chemists' Society; AOAC - Association of Official Agricultural Chemists **applicable only if used in the production process			

Table 7. Analyses of 5 production batches of canola protein (Raptein™90)

Parameter	Specifi-cation	Lot No. R-03#57	Lot No. R-06#35	Lot No. R-08#57	Lot No. R-12#52	Lot No. R-15#59
Appearance	white to off-white dried powder	white to off-white dried powder	white to off-white dried powder	white to off-white dried powder	white to off-white dried powder	white to off-white dried powder
Composition**						
Total protein (N*6.25) [%]	≥ 90	93.53	96.85	97.78	98.80	93.85
Carbohydrates* [%]	≤ 7	2.54	0.55	0.00	0.00	4.13
Fat (direct) [%]	≤ 2	0.84	<LOQ (<0.2)	<LOQ (<0.2)	<LOQ (<0.2)	0.54
Ash [%]	≤ 4	2.78	1.98	2.42	2.02	1.16
Moisture [%]	≤ 7	3.9	3.5	3.8	4.9	4.7

Fibre [%]	≤ 0.5	<LOQ (<0.30)	<LOQ (<0.30)	<LOQ (<0.30)	0.40	<LOQ (<0.30)
Total glucosinolates [mmol/kg]	≤ 1	0.14	<LOQ (<0.05)	<LOQ (<0.05)	<LOQ (<0.05)	<LOQ (<0.05)
Purity**						
Phytates [%]	≤ 1.5	1.01	1.04	1.25	0.99	0.79
Lead [mg/kg]	≤ 0.35	0.229	0.280	0.060	0.189	0.115
Arsenic [mg/kg]	≤ 0.15	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)
Cadmium [mg/kg]	≤ 0.2	0.101	0.197	0.020	0.140	0.102
Mercury [mg/kg]	≤ 0.1	<LOQ (<0.005)	<LOQ (<0.005)	<LOQ (<0.005)	<LOQ (<0.005)	<LOQ (<0.005)
Microbiological criteria						
Total plate count [cfu/g]	≤ 10 ⁶	290	<10	<10	450	1 400
<i>E. coli</i>	absent in 10g	absent	absent	absent	absent	absent
<i>Salmonella</i> spp.	absent in 25 g	absent	absent	absent	absent	absent
Yeast and Molds [cfu/g]	≤ 100	<10	<10	<10	<10	<10
Total coliform count [cfu/g]	≤ 10	0	0	0	0	0
Potential contaminants						
Residual Ethanol** [mg/kg]	<600	357	279	253	544	517

Residual Ethyl Acetate** [mg/kg]	<600	523	104	108	552	154
Residual Sulphur Dioxide*** [mg/kg]	<10	<LOQ (<10)	55	not analysed	<LOQ <10	<LOQ <10
*Carbohydrates are calculated by difference as follows: 100 % - [protein (as is) % + moisture % + fat % + ash % + fibre %]; **On dry matter (except of moisture); <LOQ – below the Limit of Quantification ***applicable only if used in the production process						

5. Please state that all analytical methods used to test batches were validated and are fit for their respective purpose.

Answer:

All analytical methods used to test batches were validated and are fit for their respective purpose.

6. In Table 15 (p. 29), NapiFeryn provides the results of the batch analyses for total plate count in the raw material (rapeseed press cake). Please address the significant variation in the results (from <10 to 28,000 CFU/g) and discuss whether this will impact safety of the final ingredient.

Answer:

The raw materials were different, e.g. different batches, hence the differences in the results. Regardless of the level of microbiology in the raw material, the product obtained is microbiologically clean and meets the specification.

7. On p. 19, NapiFeryn states that the levels of mycotoxins in canola concentrate are below the limit of quantitation (LOQ) and provide the results from the analyses of five batches to support your statement. Please clarify whether you expect mycotoxins to be present in canola concentrate manufactured in accordance with good manufacturing practices.

Answer:

We don't expect mycotoxins to be present in canola protein isolate manufactured in accordance with good manufacturing practices. The additional testing of five independent, non-consecutive batches has confirmed that no mycotoxins were detected.

8. On p. 15, NapiFeryn states that the crude protein extract is concentrated and washed in an ultrafiltration-diafiltration (UF-DF) step and then subjected to precipitation and wash steps using solvents (ethanol and ethyl acetate) to remove antinutritional factors and impurities. You further indicate on p. 15 that the solvent precipitation and solvent wash steps are optional. If these steps are optional, please clarify whether the provided results from the analyses of five non-consecutive batches reflect the variation that would be expected if the solvent precipitation and solvent wash steps were not employed in the manufacturing process of canola protein isolate. Please state that canola protein isolate is not intended for use in infant formula or in foods where standards of identity preclude its use.

Answer:

All results are for solvent processes - a worst-case scenario was taken (without optional solvent wash step, there is no need to analyze it). Ethanol used optionally in the extraction step is added at 0-1% w/w concentration and will be washed out during the process.

Canola protein isolate is not intended for use in infant formula or in foods.

9. In Part 1.4 (p. 6) and Part 3 (p. 32), NapiFeryn states that the intended use of canola protein isolate is as a protein source, formulation aid, stabilizer and thickener, and texturizer. We note that in Appendix III (p. 5), you state that canola protein isolate may also be used “to create a flavored salt” or as “a flavor enhancer like monosodium glutamate”. Please clarify if the use of canola protein isolate as a flavoring substance and flavor enhancer are within the scope of GRN 1103.

Answer:

Napiferyn hereby confirms that canola protein isolate, as part of GRN 1103, is not intended for use as a flavored salt or flavor enhancer. Canola protein isolate can be used as an ingredient in spice and seasoning mixes (i.e. formulation aid, stabilizer and thickener, and texturizer), but does not have, by itself, the capacity to supplement, enhance, or modify the original taste and/or aroma of a food, nor to impart or help impart a taste or aroma in food.

10. On p. 32 of the notice, NapiFeryn states that canola protein will be used “as a protein substitute and therefore will not contribute any additional exposure to protein for consumers”. Please clarify whether the intended uses of canola protein isolate are substitutional or additive to other canola protein products on the market (i.e. GRN 327, 386, and 683).

Answer:

Intended uses of canola protein isolate are substitutional to other canola protein products on the market (i.e. GRN 327, 386, and 683).

11. NapiFeryn states that their canola protein isolate contains greater than 90% protein, and a concern with protein ingredients is allergenicity. We note the following:
 - a. Rapeseed and mustard are both members of the Brassicaceae family. Napins and cruciferins are known allergenic proteins, and napins in oilseed rape and mustard are highly cross-reactive. ^{[1],[2]}
 - b. NapiFeryn has included an unpublished report (Appendix 4) detailing allergenicity analysis performed by the VTT Technical Research Centre of Finland. On p. 56 of the notice, you note that “the sequence searches (using FARRP allergen protein database) indicated the possible allergenic effects” of your ingredient, however there was no further discussion of these potential allergenic effects, and why this is not considered a safety concern.

Please provide a robust narrative, using the publicly available published literature, data, and information, summarizing the potential allergenicity concerns of canola protein isolate and why there is no safety concern from your intended use. Since the allergenicity report from VTT included in the Appendix is unpublished, data and conclusion for this analysis cannot be used to satisfy “generally available and generally accepted” criteria for your GRAS conclusion. However, you may choose to provide a summary and conclusion from your report in your narrative as corroborative evidence to support your conclusion that consumption of canola protein isolate poses a low risk for allergic reactions.

Answer:

The results of Mascot search on SwissProt database identified 4 cruciferins as the most abundant proteins – cruciferin CRU1 (CRU3_BRANA), cruciferin BnC1 (CRU1_BRANA), cruciferin CRU4 (CRU4_BRANA), and cruciferin BnC2 (CRU2_BRANA). The other identified proteins were napin-3 (2SS3_BRANA), napin embryo-specific (2SSE_BRANA), and napin-B (2SSB_BRANA). This is consistent with publicly available data on the composition of proteins in rapeseed^[1].

Bioinformatics searches for sequence similarity to known allergen proteins or celiac disease-eliciting proteins were performed using the FASTA3 algorithm and BLASTP. The identified proteins were searched in publicly available FARRP allergen protein database, FARRP Celiac Disease database, and NCBI Protein database.

All 4 cruciferins show a degree of identity match to 11S globulin proteins in white mustard (*Sinapis alba*). This was especially high (90-92%, full-length FASTA) for cruciferin CRU1 (CRU3_BRANA). Cruciferin is one of the major allergens in white mustard and hazelnut (*Corylus avellana*)^[2]. Because of such a high degree of identity matches with 11S globulin proteins in white mustard, not in hazelnut, cross-reactivity to mustard cruciferins is very likely.

Napin-3 (2SS3_BRANA, allergen Bra n 1) is known to cause allergenic reaction in humans and to bind to IgE^{[3][4]}. All three napins had high degrees of identity matches to 2S seed storage albumin proteins in oriental mustard (*Brassica juncea*) (allergen Bra j 1-E, up to 89.1%) and in turnip rape (*Brassica rapa*) (allergen Bra r 1, up to 80.9%), known to cause allergic reactions in humans^{[5][6][4]}. Napins also had a high degree of identity match (up to 89%, for napin-B) to multiple variants of Sin a 1 allergen in white mustard.

All full-length FASTA identity matches against 9 major food allergen sources were below 50%. The BLASTP searches performed against the NCBI Protein database did not include any allergenic proteins apart from 10 that were already found during the FARRP allergen protein database searches.

Based on historical data, cross-reactivity is fairly common for proteins sharing greater than 70% identity. Then again, those sharing less than 50% identity over the entire protein sequence are not likely to demonstrate cross-reactivity^[7]. Therefore, it can be concluded that cross-reactions between members of the *Brassicaceae* family are highly possible^{[2][4]}.

Overall, RapteinTM90 canola protein (rapeseed protein) (containing $\geq 90\%$ protein) is not expected to be allergenic except for those individuals allergic to mustard or other plants in the *Brassicaceae* family, which currently are not listed as major food allergen sources in the USA. Although the product is not derived from a major food allergen source and is not required to be labelled as such, due to potential allergic cross-reactivity of 2S and 11S seed storage proteins, voluntary precautionary statement for mustard may be considered^[2].

Proteins in RapteinTM90 did not match any peptides using the word search against the Celiac Disease peptide dataset (version 2, released 21 September 2017). The full-length FASTA search against the Celiac Disease protein dataset also did not indicate high sequence similarity with the RapteinTM90 proteins. Although some matches were found, identity matches of less than 45% over at least one-half of the FASTA aligned celiac disease protein and those with an E-value higher than 1×10^{-15} are unlikely to present a risk of inducing celiac disease. The results indicate that the RapteinTM90 proteins are unlikely to elicit celiac disease.

References cited:

[1] Ottens M. and Chilamkurthi S. (2013). 4 - Advances in process chromatography and applications in the food, beverage and nutraceutical industries. *Separation, Extraction and Concentration Processes in the Food, Beverage and Nutraceutical Industries*, Woodhead Publishing, Editor(s): Syed S.H. Rizvi, pp. 109-147.

- [2] Fiocchi A., Dahdah L., Riccardi C., Mazzina C., and Fierro V. (2016). Precautionary labelling of cross-reactive foods: The case of rapeseed. *Asthma Res and Pract.* 2(13):1-8.
- Murphy D.J. (2003). Seed development. Oil Deposition. *Encyclopedia of Applied Plant Sciences*, Elsevier, Editor(s): Brian Thomas, pp. 1256-1261.
- [3] Monsalve R.I., González de la Peña M.A., López-Otín C., Fiandor A., Fernández C., Villalba M., and Rodríguez R. (1997). Detection, isolation and complete amino acid sequence of an aeroallergenic protein from rapeseed flour. *Clin Exp Allergy*, 27:833-41.
- [4] Puumalainen T.J., Poikonen S., Kotovuori A., Vaali K., Kalkkinen N., Reunala T., Turjanmaa K., and Palosuo T. (2006). Napins, 2S albumins, are major allergens in oilseed rape and turnip rape. *J Allergy Clin Immunol*, 117(2):426-432.
- [5] Monsalve R.I., Gonzalez de la Peña M.A., Menendez-Arias L., Lopez-Otin C., Villalba M., and Rodriguez R. (1993). Characterization of a new oriental-mustard (*Brassica juncea*) allergen, Bra j IE: detection of an allergenic epitope. *Biochem J*, 293(3):625-632.
- [6] Moreno F.J. and Clemente A. (2008). 2S albumin storage proteins: what makes them food allergens? *Open Biochem J*, 2:16-28.
- [7] Aalberse R.C. (2000). Structural biology of allergens. *J Allergy Clin Immunol*, 106(2):228-238.

12. On p. 37, NapiFeryn concludes that exposure to canola protein from the intended uses is safe since the EDI reported is “still much lower (approximately 4- to 12-fold lower) than the no-observed-adverse-effect level (NOAEL) values established” for cruciferin- and napin-rich protein isolates in male rats following a 13-week oral exposure regimen (Mejia *et al.*, 2009a & 2009b). We note that an uncertainty factor, or margin of safety (MOS), of 100 (10 for interindividual variability $\times$ 10 for interspecies variability) is normally used when assessing safety of a food ingredient by comparing estimated human exposure levels to the NOAEL from animal toxicology data. Therefore, it is not clear why a MOS that is much lower than 100 can be concluded as safe without justification. Additionally, we note that potential thyrotoxic effects were observed at the highest doses in these two rat studies, as well as for rapeseed products in general tested in other species, as cited in Table 20 of the GRAS notice. This effect was mostly attributed to the presence of glucosinolates; however, we note that since the level of glucosinolates was low or absent in both the test articles from Mejia *et al.* and the article of commerce, the rationale used by the study authors to conclude that the observed NOEL was not in fact the NOAEL may be questionable. Regardless, it appears that the provided safety narrative lacks sufficient basis to conclude that a MOS of 4-12 is adequate to reach the conclusion of “reasonable certainty of no harm.” Based on generally available data and information, please provide additional narrative to explain your rationale for your GRAS conclusion.

Answer:

The estimate exposure to canola protein isolate ranges from 3.67 g/Kg BW/day for young children to 0.91 g/Kg BW/day for adults. The applicant considers these are conservative values which are lower than the NOAEL of 11.24 g/Kg bd/day for male rats reported by Mejia *et al.* for the cruciferin-rich protein isolate and 12.46 g/Kg BW/day for male rats for the napin-rich protein isolate^{[1][2]}. The exposures are slightly above than those reported in prior GRAS notices for canola proteins which ranged from 2.0 to 0.53 g/Kg BW/day or 3.1 to 0.75 g/Kg BW/day (GRN 683 and GRN 327 respectively).

The canola protein isolate is not expected to have 100% of the market share for protein isolate products. Additionally, food intake databases from which the estimated exposures are derived usually overestimate consumption, since they do not reflect the true chronic exposure conditions. These factors will typically overestimate the exposure of a macronutrient by a factor of 2- to 10-fold^[3].

Taking these considerations into account all the aspects for evaluation of safe exposure, the applicant considers that canola protein isolate intakes will be well below levels of any possible concern and thus are safe for human consumption.

Organ weights were not affected by the treatment with the possible exception of the relative thyroid plus parathyroid weight, which was slightly but significantly increased in females, but not in males, of the high dose napin protein isolate group^[2] and in both sexes of the high dose cruciferin protein isolate

group^[1]. In the absence of histopathological changes of the thyroids, the thyroid weight was not considered of toxicological relevance^{[1][2][4]}.

References cited:

- [1] Mejia, L.A., Korgaonkar, C.K., Schweizer, M., Chengelis, C., Marit, G., Ziemer, E., Grabel, R. & Empie, M. 2009, "A 13-week sub-chronic dietary toxicity study of a cruciferin-rich canola protein isolate in rats", Food and chemical toxicology : an international journal published for the British Industrial Biological Research Association, vol. 47, no. 10, pp. 2645-2654.
- [2] Mejia, L.A., Korgaonkar, C.K., Schweizer, M., Chengelis, C., Novilla, M., Ziemer, E., Williamson-Hughes, P.S., Grabel, R. & Empie, M. 2009, "A 13-week dietary toxicity study in rats of a Napin-Rich Canola Protein Isolate", Regulatory toxicology and pharmacology : RTP, vol. 55, no. 3, pp. 394-402.
- [3] Munro, I.C., McGirr, L.G., Nestmann, E.R. & Kille, J.W. 1996, "Alternative approaches to the safety assessment of macronutrient substitutes", Regulatory Toxicology and Pharmacology, vol. 23, no. 1, pp. S6-S14
- [4] EFSA NDA Panel (EFSA Panel on Dietetic Products, Nutrition and Allergies), 2013. Scientific Opinion on the safety of "rapeseed protein isolate" as a Novel Food ingredient. EFSA Journal 2013;11(10):3420, 23 pp. doi:10.2903/j.efsa.2013.3420

13. We note that in a search of the literature pertaining to the safety of canola protein, an article titled "*Removal of anti-nutritional factors of rapeseed protein isolate (RPI) and toxicity assessment of RPI*" was found.^[3] This study was not discussed in the safety narrative of the notice; however, as the test article is similar to NapiFeryn's canola protein, this study appears to be relevant to your safety assessment. Please summarize the findings and discuss any relevant safety concerns.

Discussion of referenced article:

The article titled "Removal of anti-nutritional factors of rapeseed protein isolate (RPI) and toxicity assessment of RPI" discusses the potential safety concerns raised, in relation to the presence of anti-nutritional factors (ANFs) in rapeseed protein isolate (RPI). The study compares a non-treated (or non-detoxified) rapeseed protein isolate with a treated (or detoxified) RPI and a commercial soybean protein isolate (SPI), in terms of level of anti-nutritional factors (i.e., glucosinolates, phenolics and phytic acid) and their respective effects on mice. The de-toxification of the RPI was a combined treatment based on alkaline extraction and acidic precipitation. Initially, the RPI was pre-treated with phytase, followed by double ethanol extraction in (ratio 1:5) for a duration of 1.5 hours. The de-toxification of the RPI led to a significant removal of the anti-nutrients.

Following administration to mice for 14 days, the results showed that RPI de-toxified with phytase/ethanol was safe, while a decrease of the thyroid/parathyroid index in mice treated with non-detoxified RPI was reported. The authors state that significant changes were observed in the weight of liver and kidneys between the group fed detoxified RPI and the control group, though no corresponding damage to liver or kidneys was observed.

Additionally, measurement of the thyroid-releasing hormone (TRH), showed higher concentrations of TRH in serum of mice fed detoxified RPI, which could be associated with thyroid gland complications, such as hypothyroidism. The authors conclude that the RPI ingestion could cause inflammation of the thyroid gland, although proper elaboration on their conclusion is missing. Further, the group of mice fed detoxified RPI did show lower levels of Alanine transaminase (ALT) and Aspartate aminotransferase (AST) compared to the control groups (fed non-detoxified RPI). Finally, as a general statement the authors argue that non-detoxified RPI could cause liver disease. Yet, the study concludes that there were no consistent or significant differences in toxicology-related parameters between the treatment groups.

Given article by Xiong et al. (2022) demonstrates that significant removal of antinutrients can be achieved and the resulting detoxified RPI was considered safe under the conditions tested. The article therefore supports that appropriate treatments can be considered to lower antinutrients in rapeseed protein isolates, but it does not permit to draw accurate conclusions on the toxicity of other RPI (i.e., non-detoxified).

As regards to Napiferyn, in the production of the rapeseed/canola protein isolate, which is the subject of GRAS Notice 1103, purposely designed steps are applied to reduce the content of antinutritional factors. As a result, the final levels of antinutrients are in line or lower than what is conventionally found in rapeseed protein isolates.

- a. We note that NapiFeryn conducted a literature search through 2021. Please perform an updated literature search through 2023 and summarize any additional publications that pertain to safety of canola protein.

A literature review for the period of 2021-2023 (until 4 July 2023) has been conducted. The result, including discussion, can be found in the report titled 'Literature_review_GRAS_years_2021-2023'

Answer:

Responses may be sent in an email or in a separate document. We respectfully request a response within 10 business days. If you are unable to complete the response within that time frame, please contact me to discuss further options.

^[1] Puumalainen TJ et al. 2006. Napins, 2S albumins are major allergens in oilseed rape and turnip rape. *J Allergy Clin Immunol.* 117(2): 426-432.

^[2] Fiocchi A et al., 2016. Precautionary labelling of cross-reactive foods: The case of rapeseed. *Asthma Res Pract.* 2(13): 1-8.

^[3] Xiong Z., et al., *Removal of anti-nutritional factors of rapeseed protein isolate (RPI) and toxicity assessment of RPI.* Food Funct, 2022. 13(2):664-674.

From: [Nikolaas Tilkin-Franssens](#)
To: [DiFranco, Stephen](#)
Subject: Re: [EXTERNAL]: GRN 1103 Items for clarification - Reply
Date: Monday, August 28, 2023 4:47:59 AM
Attachments: [image001.png](#)
[image007.png](#)
[image008.png](#)

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Hi Steve,

In this email I provide the set of answers for Canola protein isolate (GRN 1103).

1. In a response to Question 8 (amendment dated June 28, 2023), you state that the results from the batch analyses in Table 7 (page 19) are for canola protein isolate that was subjected to solvent wash and that if the solvent wash step is not employed then there is no need to analyze for solvent residues. We would like to clarify our Question 8. In this question, we requested that you clarify whether you expect higher levels of the impurities (or any additional impurities) to be present in the final ingredient that is not subjected to the solvent precipitation and wash steps compared to the ingredient that is subjected to the solvent precipitation and wash steps. Please provide this information to sufficiently address Question 8.

Answer: Yes, we would expect slightly higher levels of some impurities. Solvent wash steps are used to remove impurities such as lipids and remove anti-nutritional factors, such as phenolic compounds.

Solvent wash steps are optional and if employed, they are subsequent to ultrafiltration step, in which all impurities specified in the specification are being washed out to the required levels during the diafiltration step. After this mandatory step is completed, the process to obtain protein isolate may take two mutually exclusive routes: ethanol wash step or spray drying (solvent-free route). If spray drying is employed, the process of obtaining protein isolate is not different from the ones already disclosed in the GRN327, GRN386, GRN683. If the ethanol wash step is employed, the protein is isolated from the concentrated retentate after ultrafiltration by the effect of addition of ethanol to the solution/suspension of protein in water. Because of effectuated change in the polarity of the resulting mixture as compared to water, protein is precipitating as an amorphous solid phase. Worth to notice is that supernatant may still contain some minute residues of impurities that have not been washed out in the ultrafiltration step. In particular, the Applicant has found out that some phenolic compounds such a sinapic acid and its derivatives (Kaempferol 3 O (2'' O Sinapoyl-β-sophoroside) that may render bitter taste notes to the protein isolate^[1] are effectively separated from the protein isolate if the ethanolic wash step is employed. Subsequently after ethanolic wash the solid liquid separation step is employed to obtain solid cake (ca 20-30% dry mass) which may be subjected to further solvent washes with ethanol or ethyl acetate, to be finally subjected to drying. Employing ethyl acetate wash brings the advantage of removal of the residues of fats and lipids, if present in the protein isolated in the ethanolic wash step. Additionally, replacing high boiling point solvents (ethanol-water mixture after ethanolic step) with low-boiling point ethyl acetate enables lowering of the production costs associated with the drying of the final isolate.

References:

1: Christoph Hald, Corinna Dawid, Ralf Tressel, and Thomas Hofmann Journal of Agricultural and Food Chemistry 2019 67 (1), 372-378. DOI: 10.1021/acs.jafc.8b06260.

2. In Appendix 1, you provide the results from the batch analyses for pesticide residues that show the glyphosate level of 0.03 mg/kg in one batch of canola protein isolate (Lot R-03#57). In addition, you state that thiophanate-methyl and isofetamid were detected in the raw material (rapeseed cake) at a level of concern; however, the batch analyses of the final ingredient showed no pesticide residues at any level of concern (page 28 of GRN 001103).

- a. Please address the types of pesticides (other than those mentioned above) that may be used in production (growth and post-harvest) of canola seeds, discuss what steps are taken to minimize pesticide residues in the starting material (rapeseed cake) used in production of canola protein isolate, and how the batches of the rapeseed cake with the pesticide residues at a level of concern are handled.

Answer: The pesticides being of the most concern are listed below:

Acetamiprid, Azoxystrobin, Benzovindiflupyr, Bifenthrin, Boscalid, Captan, Carboxin, Carfentrazone-ethyl, Chlorantraniliprole, Clethodim, Clomazone, Clothianidin, Cyantraniliprole, Cyprodinil, Deltamethrin, Dichlorvos, Difenoconazole, Diquat dibromide, Ethalfluralin, Ethamsulfuron-methyl, Etofenprox, Flonicamid, Fludioxonil, Flumioxazin, Fluopyram, Fluoride, Fluoxastrobin, Flupyradifurone, Fluxapyroxad, Gamma Cyhalothrin, Glufosinate-ammonium, Glyphosate, Imidacloprid, Isofetamid, Lambda Cyhalothrin, Mefentrifluconazole, Metalaxyl-M (Mefenoxam), Metconazole, Methyl bromide, Nitrpyrin, Penflufen, Penthiopyrad, Phosphine, Picoxystrobin, Propiconazole, Prothioconazole, Pydiflumetofen, Pyraclostrobin, Pyriproxyfen, Quinclorac, Quizalofop-ethyl, Saflufenacil, Sedaxane, Sethoxydim, Spinosad, Sulfoxaflor, Sulfuryl fluoride, Tebufenozide, Tetraconazole, Thiamethoxam, Thifensulfuron-methyl, Thiophanate-methyl, Tribenuron Methyl, Trifluralin, Zeta-Cypermethrin.

Every batch of starting material is analyzed prior to the production process and should fulfill legal requirements for pesticides content. If the limits are exceeded, this batch would be rejected.

Additionally, to reduce the load of pesticide in the starting material upfront dehulling prior to cold-pressing is preferable.

- b. Please clarify if the canola seeds are dehulled or not prior to processing and how this would impact the pesticide levels in the final canola protein isolate.

Answer: *The process can be carried out both on the dehulled and non-hulled rapeseed cake (products from the batches from both types of materials are presented in the dossier). Regardless of the type of raw material, pesticides will be removed during the process to a safe minimum (support data included in the dossier - the glyphosate level of 0,03 mg/kg in one batch is slightly above LOQ, but still far below the MRL - maximum residue level).*

Please clarify whether the results from the batch analyses in Appendix 1 are for canola protein isolate produced using the seeds that were dehulled or not.

Answer: *Results from the batch analyses in Appendix 1 are for canola concentrate manufactured using both non-dehulled rapeseed cake (R-06#35, R-08#57) and dehulled rapeseed cake (R-03#57, R-12#52, R-15#59).*

Raptein™90				
R-03#57	R-06#35	R-08#57	R-12#52	R-15#59
A-00#58	P-00#16	P-00#16	A-00#59	A-00#59
DRC	RC	RC	DRC	DRC

DRC - dehulled rapeseed cake

RC - rapeseed cake (non-dehulled)

Kind regards,

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

T +34 936 758 015 M +34 649 840 417 F +34 936 758 016 www.pentec-consulting.eu

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From: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>

Date: Thursday, 17 August 2023 at 21:13

To: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>

Subject: RE: [EXTERNAL]: GRN 1103 Items for clarification - Reply

Hello Niko,

Our reviewers have a few follow up questions regarding your notice, GRN 1103. Please comment on the following:

1. In a response to Question 8 (amendment dated June 28, 2023), you state that the results from the batch analyses in Table 7 (page 19) are for canola protein isolate that was subjected to solvent wash and that if the solvent wash step is not employed then there is no need to analyze for solvent residues. We would like to clarify our Question 8. In this question, we requested that you clarify whether you expect higher levels of the impurities (or any additional impurities) to be present in the final ingredient that is not subjected to the solvent precipitation and wash steps compared to the ingredient that is subjected to the solvent precipitation and wash steps. Please provide this information to sufficiently address Question 8.
2. In Appendix 1, you provide the results from the batch analyses for pesticide residues that show the glyphosate level of 0.03 mg/kg in one batch of canola protein isolate (Lot R-03#57). In addition, you state that thiophanate-methyl and isofetamid were detected in the raw material (rapeseed cake) at a level of concern; however, the batch analyses of the final ingredient showed no pesticide residues at any level of concern (page 28 of GRN 001103).
 - a. Please address the types of pesticides (other than those mentioned above) that may be used in production (growth and post-harvest) of canola seeds, discuss what steps are taken to minimize pesticide residues in the starting material (rapeseed cake) used in production of canola protein isolate, and how the batches of the rapeseed cake with the pesticide residues at a level of concern are handled.
 - b. Please clarify if the canola seeds are dehulled or not prior to processing and how this

- would impact the pesticide levels in the final canola protein isolate.
- c. Please clarify whether the results from the batch analyses in Appendix 1 are for canola protein isolate produced using the seeds that were dehulled or not.

If you have any questions on the above or otherwise, please don't hesitate to reach out.

Best,

Steve

Stephen DiFranco, PhD

Regulatory Review Scientist/Chemist

Center for Food Safety and Applied Nutrition
Office of Food Additive Safety
Division of Food Ingredients
U.S. Food and Drug Administration
Tel: 240-402-2710
stephen.difranco@fda.hhs.gov



From: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Sent: Friday, July 14, 2023 2:33 AM
To: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Subject: Re: [EXTERNAL]: GRN 1103 Items for clarification - Reply

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Stephen,

Hope this email finds you well.

Could we kindly ask for an acknowledgment of receipt of our replies?
Also for GRN1122 (Canola protein concentrate).

Just to know everything was well received.

Thanks for the coordination,

Niko

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

T [+34 936 758 015](tel:+34936758015) **M** [+34 649 840 417](tel:+34649840417) **F** [+34 936 758 016](tel:+34936758016) www.pentec-consulting.eu



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From: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>

Date: Tuesday, 11 July 2023 at 17:05

To: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>

Subject: Re: [EXTERNAL]: GRN 1103 Items for clarification - Reply

Dear Stephen,

Thank you for reaching out with the questions for clarification on GRN 1103 (Canola Protein Isolate).

Kindly find attached a Word file including the Questions&Answers and a report on the requested literature review.

We remain available for any further questions or updates.

Thanks for taking the application in further consideration,
best regards,

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

T +34 936 758 015 **M** +34 649 840 417 **F** +34 936 758 016 www.pentec-consulting.eu

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From: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>

Date: Wednesday, 28 June 2023 at 17:05

To: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>

Subject: [EXTERNAL]: GRN 1103 Items for clarification

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Hello Mr. Tilkin-Franssens,

After evaluating NapiFeryn's GRAS Notice No. GRN 1103 on canola protein isolate we noted a few issues that should be addressed. Please respond to the following points for clarification:

1. On p. 9, NapiFeryn states that the major storage proteins in canola seed are cruciferins and napins, and that canola protein isolate consists of $\geq 90\%$ protein. Please provide the typical cruciferin content and napin content in canola protein isolate.
2. Please confirm that canola protein isolate is manufactured in accordance with good manufacturing practices using food-grade raw materials and processing aids. For the record, we note that the food additive regulations cited in Table 4 for ascorbic acid (21 CFR 182.8013), ethanol (21 CFR 184.1293), and ethyl acetate (21 CFR 173.228) do not appear to be applicable to your intended uses of these substances.
3. In Table 6 (p. 18-19), NapiFeryn provides the results from the batch analyses for heavy metals. We would like to bring to your attention a relevant FDA's "Closer to Zero" initiative that focuses on reducing the levels of heavy metals in foods and recommend that you lower the specification limits for heavy metal to better reflect the batch analyses results and to be as low as possible.
4. In Table 10 (p. 23), NapiFeryn provides batch analyses data for residual solvents and processing aids. Please explain the variability in the results provided for benzoic acid and its salts and sulphur dioxide. We also note that the level of erucic acid in your canola protein isolate is provided as $< 0.04\%$ in Table 6 (p. 18) and as $< 0.1\%$ in Tables 21 and 22 (p. 48 and 56, respectively).

- a. Please include limits for residual ethanol, ethyl acetate, and sulphur dioxide as well as a limit for erucic acid in the specifications for canola protein isolate and specify the analytical methods used to test for these parameters.
 - b. Please provide results for erucic acid from the analyses of a minimum of three non-consecutive batches to demonstrate that canola protein isolate can be manufactured to meet the proposed specification limit for erucic acid.
 - c. In addition, please provide an updated Tables 5 (p. 17) and 7 (p. 19-20) to include the additional specification parameters mentioned above, corresponding analytical methods, and batch analyses.
5. Please state that all analytical methods used to test batches were validated and are fit for their respective purpose.
6. In Table 15 (p. 29), NapiFeryn provides the results of the batch analyses for total plate count in the raw material (rapeseed press cake). Please address the significant variation in the results (from <10 to 28,000 CFU/g) and discuss whether this will impact safety of the final ingredient.
7. On p. 19, NapiFeryn states that the levels of mycotoxins in canola concentrate are below the limit of quantitation (LOQ) and provide the results from the analyses of five batches to support your statement. Please clarify whether you expect mycotoxins to be present in canola concentrate manufactured in accordance with good manufacturing practices.
8. On p. 15, NapiFeryn states that the crude protein extract is concentrated and washed in an ultrafiltration-diafiltration (UF-DF) step and then subjected to precipitation and wash steps using solvents (ethanol and ethyl acetate) to remove antinutritional factors and impurities. You further indicate on p. 15 that the solvent precipitation and solvent wash steps are optional. If these steps are optional, please clarify whether the provided results from the analyses of five non-consecutive batches reflect the variation that would be expected if the solvent precipitation and solvent wash steps were not employed in the manufacturing process of canola protein isolate. Please state that canola protein isolate is not intended for use in infant formula or in foods where standards of identity preclude its use.
9. In Part 1.4 (p. 6) and Part 3 (p. 32), NapiFeryn states that the intended use of canola protein isolate is as a protein source, formulation aid, stabilizer and thickener, and texturizer. We note that in Appendix III (p. 5), you state that canola protein isolate may also be used “to create a flavored salt” or as “a flavor enhancer like monosodium glutamate”. Please clarify if the use of canola protein isolate as a flavoring substance and flavor enhancer are within the scope of GRN 1103.
10. On p. 32 of the notice, NapiFeryn states that canola protein will be used “as a protein substitute and therefore will not contribute any additional exposure to protein for consumers”. Please clarify whether the intended uses of canola protein isolate are substitutional or additive to other canola protein products on the market (i.e. GRN 327, 386, and 683).
11. NapiFeryn states that their canola protein isolate contains greater than 90% protein, and a

concern with protein ingredients is allergenicity. We note the following:

- a. Rapeseed and mustard are both members of the Brassicaceae family. Napins and cruciferins are known allergenic proteins, and napins in oilseed rape and mustard are highly cross-reactive. [\[1\]](#), [\[2\]](#)
- b. NapiFeryn has included an unpublished report (Appendix 4) detailing allergenicity analysis performed by the VTT Technical Research Centre of Finland. On p. 56 of the notice, you note that “the sequence searches (using FARRP allergen protein database) indicated the possible allergenic effects” of your ingredient, however there was no further discussion of these potential allergenic effects, and why this is not considered a safety concern.

Please provide a robust narrative, using the publicly available published literature, data, and information, summarizing the potential allergenicity concerns of canola protein isolate and why there is no safety concern from your intended use. Since the allergenicity report from VTT included in the Appendix is unpublished, data and conclusion for this analysis cannot be used to satisfy “generally available and generally accepted” criteria for your GRAS conclusion. However, you may choose to provide a summary and conclusion from your report in your narrative as corroborative evidence to support your conclusion that consumption of canola protein isolate poses a low risk for allergic reactions.

12. On p. 37, NapiFeryn concludes that exposure to canola protein from the intended uses is safe since the EDI reported is “still much lower (approximately 4- to 12-fold lower) than the no-observed-adverse-effect level (NOAEL) values established” for cruciferin- and napin-rich protein isolates in male rats following a 13-week oral exposure regimen (Mejia *et al.*, 2009a & 2009b). We note that an uncertainty factor, or margin of safety (MOS), of 100 (10 for interindividual variability × 10 for interspecies variability) is normally used when assessing safety of a food ingredient by comparing estimated human exposure levels to the NOAEL from animal toxicology data. Therefore, it is not clear why a MOS that is much lower than 100 can be concluded as safe without justification. Additionally, we note that potential thyrotoxic effects were observed at the highest doses in these two rat studies, as well as for rapeseed products in general tested in other species, as cited in Table 20 of the GRAS notice. This effect was mostly attributed to the presence of glucosinolates; however, we note that since the level of glucosinolates was low or absent in both the test articles from Mejia *et al.* and the article of commerce, the rationale used by the study authors to conclude that the observed NOEL was not in fact the NOAEL may be questionable. Regardless, it appears that the provided safety narrative lacks sufficient basis to conclude that a MOS of 4-12 is adequate to reach the conclusion of “reasonable certainty of no harm.” Based on generally available data and information, please provide additional narrative to explain your rationale for your GRAS conclusion.
13. We note that in a search of the literature pertaining to the safety of canola protein, an article titled “*Removal of anti-nutritional factors of rapeseed protein isolate (RPI) and toxicity assessment of RPI*” was found. [\[3\]](#) This study was not discussed in the safety narrative of the notice; however, as the test article is similar to NapiFeryn’s canola protein, this study appears to be relevant to your safety assessment. Please summarize the findings and discuss any relevant safety concerns.
 - a. We note that NapiFeryn conducted a literature search through 2021. Please perform an updated literature search through 2023 and summarize any additional publications that pertain to safety of canola protein.

Responses may be sent in an email or in a separate document. We respectfully request a response within 10 business days. If you are unable to complete the response within that time frame, please contact me to discuss further options.

If you have any additional questions or concerns, please don't hesitate to contact me at stephen.difranco@fda.hhs.gov or by phone at 240.402.2710.

Best,

Steve

Stephen DiFranco, PhD

Regulatory Review Scientist/Chemist

Center for Food Safety and Applied Nutrition

Office of Food Additive Safety

Division of Food Ingredients

U.S. Food and Drug Administration

Tel: 240-402-2710

stephen.difranco@fda.hhs.gov



From: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>

Sent: Tuesday, June 27, 2023 2:47 AM

To: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>

Subject: Re: [EXTERNAL] FDA GRAS Notification - Raptein30 - status

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Hi Mr. DiFranco,

Allow me to follow up after our call we had on 26 May.

Thanks again for guiding us through the thoughts of the review team regarding the Raptein (rapeseed protein) GRAS dossiers (GRN 1103 and GRN 1122).

Can you give us any indication when we may receive the letter?
This would allow us to organise the reply in the best possible way.

Kind regards,

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

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From: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Date: Wednesday, 17 May 2023 at 18:20
To: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Cc: Nicoleta Pasecinic <nicoleta@pentec-consulting.eu>
Subject: RE: [EXTERNAL] FDA GRAS Notification - Raptein30 - status

Hello Mr. Tilkin-Franssens and Ms. Pasecinic,

As you know we are currently reviewing both GRN 1103 and GRN 1122. As is typical in the GRAS program, our review team often has minor questions for clarification which we ask the notifier to respond to prior to issuing a response letter.

These notices share many similarities, as the products are both derived from canola. Hence, our team has identified a few minor issues common to each. We thought it might be best to have a short teleconference with you such that we can clarify some of the additional information that we are seeking—in both notices.

I've identified the following time slots in which our team is available—trying to account for the time difference. Would any of these be suitable for you to meet:

Monday May 22: 9-10am EDT or 10-11am EDT (3-4pm or 4-5pm CEST)

Wednesday May 24: 1-2pm EDT (7-8pm CEST)

Thursday May 25: 10-11am EDT or 11-noon EDT (4-5pm or 5-6pm CEST)

Friday May 26: 10-11am EDT (4-5pm CEST)

Please let me know and I can book the meeting.

Thanks,

Steve

Stephen DiFranco, PhD

Regulatory Review Scientist/Chemist

**Center for Food Safety and Applied Nutrition
Office of Food Additive Safety
Division of Food Ingredients
U.S. Food and Drug Administration**
Tel: 240-402-2710
stephen.difranco@fda.hhs.gov



From: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Sent: Wednesday, May 17, 2023 11:02 AM
To: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Subject: Re: [EXTERNAL] FDA GRAS Notification - Raptein30 - status

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Hi Stephen,

Thank you for the confirmation. We have well received the filing.

KR

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

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From: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Date: Monday, 15 May 2023 at 15:32
To: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Subject: RE: [EXTERNAL] FDA GRAS Notification - Raptein30 - status

Hello Mr. Tilkin-Franssens,

GRN 1122 on canola concentrate submitted on behalf of NapiFeryn was filed as of April 19, 2023. An official filing letter was sent to Ms. Pasecinic stating such. Currently the notice is under review by our staff scientists.

Thanks,

Steve

Stephen DiFranco, PhD

Regulatory Review Scientist/Chemist

Center for Food Safety and Applied Nutrition

Office of Food Additive Safety

Division of Food Ingredients

U.S. Food and Drug Administration

Tel: 240-402-2710

stephen.difranco@fda.hhs.gov



From: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Sent: Friday, April 14, 2023 3:30 AM

To: Kampmeyer, Christopher <Christopher.Kampmeyer@fda.hhs.gov>

Subject: Re: [EXTERNAL] FDA GRAS Notification - Raptein30 - status

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Hi Christopher,

Allow me to check with you.

Can we know if the prefilling of Raptein 30 is moving forward?

I want to make sure no other issues were found, as we had quite some setbacks already with this submission.

Thanks for your ever supportive attitude.

Have a great day!

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

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[1] Puumalainen TJ et al. 2006. Napins, 2S albumins are major allergens in oilseed rape and turnip rape. *J Allergy Clin Immunol.* 117(2): 426-432.

[2] Fiocchi A et al., 2016. Precautionary labelling of cross-reactive foods: The case of rapeseed. *Asthma Res Pract.* 2(13): 1-8.

[3] Xiong Z., et al., *Removal of anti-nutritional factors of rapeseed protein isolate (RPI) and toxicity assessment of RPI.* Food Funct, 2022. **13**(2):664-674.

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From: [Nikolaas Tilkin-Franssens](#)
To: [DiFranco, Stephen](#)
Cc: [Justyna Palasińska](#)
Subject: Re: [EXTERNAL]: GRN 1103 Additional item for clarification
Date: Tuesday, October 3, 2023 8:51:16 AM
Attachments: [image001.png](#)
[image007.png](#)

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Hi Steve,

Thank you for the sharing the requests.

On behalf of Napiferyn we provide below statement [a] and clarification [b].

Kindly let us know if the answer adequately addresses the doubts.

We remain open to further requests for clarification or requests.

ANWERS:

1.

a. NapiFeryn hereby confirms that by “required levels” the applicant means levels at or below specifications.

b. The final wash step in the production process of Canola Protein Isolate (GRN 1103) is solely applied to improve the organoleptic properties of the final product.

The reduction of antinutritional compounds is obtained via the filtration and ultrafiltration step of the process and the organic solvent washing steps (GRN 1103 of Napiferyn, page 15).

Further, only low-erucic varieties (double 00) are used in the process. Overall, increased levels of polyphenols are not desirable as they have an adverse effect on the taste and color of the product (they are associated with poor palatability due to bitterness or astringency).

Kind regards,

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

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From: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Date: Wednesday, 20 September 2023 at 17:41
To: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Subject: [EXTERNAL]: GRN 1103 Additional item for clarification

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Hello Niko,

In response to your amendment our reviewers had a follow up question:

1. In the amendment dated August 28, 2023, you provide additional details on the required ultrafiltration/diafiltration step and optional solvent wash steps in the manufacturing process to produce canola protein isolate. You further state that the solvent wash steps are optional and that these steps aid in removing impurities. In the event that the solvent wash steps are not employed, you confirmed that *“you would expect slightly higher levels of some impurities....such as phenolic compounds”*. You state that all impurities will be removed to the *“required levels”* during the mandatory diafiltration step.
 - a. For the administrative record, please confirm that by *“required levels,”* you mean levels at or below specifications.
 - b. Since you only provide specifications for total glucosinolates and phytates (Table 7, p. 19), but not other anti-nutritional factors, it is unclear how omitting the final wash step impacts impurities with no specifications. Please clarify whether levels of these other anti-nutritional factors that do not have specifications will remain below the levels of concern outlined in your safety narrative (p. 48-55) if the optional solvent washing steps are omitted in the manufacturing process to produce canola protein isolate.

Please respond to the above; and feel free to reach out if there are any questions.

Best,

Steve

Stephen DiFranco, PhD

Regulatory Review Scientist/Chemist

**Center for Food Safety and Applied Nutrition
Office of Food Additive Safety
Division of Food Ingredients**

U.S. Food and Drug Administration
Tel: 240-402-2710
stephen.difranco@fda.hhs.gov



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From: [Nikolaas Tilkin-Franssens](#)
To: [DiFranco, Stephen](#)
Subject: Re: [EXTERNAL]: GRN 1103 Additional item for clarification
Date: Tuesday, October 31, 2023 9:42:54 AM
Attachments: [image001.png](#)
[image007.png](#)
[image008.png](#)
[FDA GRN 1103 Isolate corrected tables.docx](#)

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Hi Steve,

Thank you for the email.

Our apologies for this mistake. Thank you for reaching out and requesting the correction.

I include the corrected specification as attachment to this email.

Napiferyn did however notice there was also an asterisk missing in both specification list and the results overview.

It is highlighted in red (*)

We noticed the same asterisk is missing for the concentrate so I will be sending you the updated table as well via a separate email.

Sorry about the inconvenience,

KR

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

T +34 936 758 015 **M** +34 649 840 417 **F** +34 936 758 016 www.pentec-consulting.eu

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From: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Date: Monday, 30 October 2023 at 19:24
To: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Subject: RE: [EXTERNAL]: GRN 1103 Additional item for clarification

Hello Niko,

I had the team reach out with another request we would need to complete the administrative record for GRN 1103. It looks like some data between Napiferyn's 2 notices may have got mixed. Please respond to the following:

1. In your response dated June 28, 2023 to FDA's question 4 part C, you have included Table 5 along with the additional specifications requested for GRN 001103 (canola protein isolate). This table appears to include the specifications from Table 5 in GRN 001122 (canola concentrate). Please provide the correct Table 5 with the updated specifications for canola protein isolate.

Thanks,

Steve

Stephen DiFranco, PhD

Regulatory Review Scientist/Chemist

Center for Food Safety and Applied Nutrition
Office of Food Additive Safety
Division of Food Ingredients
U.S. Food and Drug Administration
Tel: 240-402-2710
stephen.difranco@fda.hhs.gov



From: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>
Sent: Tuesday, October 3, 2023 8:51 AM
To: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>
Cc: Justyna Pałasińska <justyna@pentec-consulting.eu>
Subject: Re: [EXTERNAL]: GRN 1103 Additional item for clarification

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Hi Steve,

Thank you for the sharing the requests.

On behalf of Napiferyn we provide below statement [a] and clarification [b].

Kindly let us know if the answer adequately addresses the doubts.
We remain open to further requests for clarification or requests.

ANSWERS:

1.

- a. NapiFeryn hereby confirms that by "required levels" the applicant means levels at or below specifications.
- b. The final wash step in the production process of Canola Protein Isolate (GRN 1103) is solely applied to improve the organoleptic properties of the final product.

The reduction of antinutritional compounds is obtained via the filtration and ultrafiltration step of the process and the organic solvent washing steps (GRN 1103 of Napiferyn, page 15).

Further, only low-erucic varieties (double 00) are used in the process. Overall, increased levels of polyphenols are not desirable as they have an adverse effect on the taste and color of the product (they are associated with poor palatability due to bitterness or astringency).

Kind regards,

Nikolaas Tilkin-Franssens

Regulatory Affairs Manager | Pen & Tec Consulting

T +34 936 758 015 M +34 649 840 417 F +34 936 758 016 www.pentec-consulting.eu

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From: DiFranco, Stephen <Stephen.DiFranco@fda.hhs.gov>

Date: Wednesday, 20 September 2023 at 17:41

To: Nikolaas Tilkin-Franssens <niko@pentec-consulting.eu>

Subject: [EXTERNAL]: GRN 1103 Additional item for clarification

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Best,

Steve

Stephen DiFranco, PhD

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Product specifications for canola protein (Raptein™90)

Parameter	Unit	Value	Method
Appearance	-	white to off-white dried powder	Visual
Composition**			
Total protein (N*6.25)	%	≥ 90	ISO 1871:2009
Carbohydrates	%	≤ 7	By difference*
Fat (direct)	%	≤ 2	PB/CH/16 version 3 from 09.11.2018
Ash	%	≤ 4	PN-A-79011-8:1998
Moisture	%	≤ 7	PN-A-79011-3:1998
Fibre	%	≤ 0.5	WE 152/2009 App. III
Total glucosinolates	mmol/kg	≤ 1	ISO 9167-1:1992; AOCS Ak 1-92
Purity**			
Phytates	%	≤ 1.5	Analytical Biochemistry Vol. 77:536-539 (1977)
Lead	mg/kg	≤ 0.35	DIN EN 15763:2010 (2010-04), mod.
Arsenic	mg/kg	≤ 0.15	§64 LFGB L 00.00-19/3
Cadmium	mg/kg	≤ 0.2	DIN EN 15763:2010 (2010-04), mod.

Mercury	mg/kg	≤ 0.1	DIN EN 15763:2010 (2010-04), mod.
Microbiological criteria			
Total plate count	cfu/g	≤ 10 ⁴	PN-EN ISO 4833-1:2013-12
<i>E. coli</i>	-	absence in 10 g	PN-ISO 7251:2006
<i>Salmonella</i> spp.	-	absence in 25 g	PN-EN ISO 6579-1:2017-04
Yeast and Molds	cfu/g	≤ 100	PN-ISO 21527-2:2009
Total coliform count	cfu/g	≤ 10	PN-ISO 4831:2007
Potential contaminants			
Residual Ethanol***	mg/kg	<600	HH-MA-M 03-011, Headspace, GC-FID: 2019-01
Residual Ethyl Acetate***	mg/kg	<600	HH-MA-M 03-011, Headspace, GC-FID: 2019-01
Residual Sulphur Dioxide***	mg/kg	< 10	PN-EN 1988-1:2001

*Carbohydrates are calculated by difference as follows: 100 % - [protein (as is) % + moisture % + fat % + ash %]
**On dry matter (except of moisture)
PN-A - polish standard; LFGB - Lebensmittel-und-Futtermittelgesetzbuch (German Food and Feed Act); DIN - Deutsches Institut für Normung (German institute for standardization); AOCS - American Oil Chemists' Society; AOAC - Association of Official Agricultural Chemists
***applicable only if used in the production process

[illegible]

Composition**						
Total protein (N*6.25) [%]	≥ 90	93.53	96.85	97.78	98.80	93.85
Carbohydrates* [%]	≤ 7	2.54	0.55	0.00	0.00	4.13
Fat (direct) [%]	≤ 2	0.84	<LOQ (<0.2)	<LOQ (<0.2)	<LOQ (<0.2)	0.54
Ash [%]	≤ 4	2.78	1.98	2.42	2.02	1.16
Moisture [%]	≤ 7	3.9	3.5	3.8	4.9	4.7
Fibre [%]	≤ 0.5	<LOQ (<0.30)	<LOQ (<0.30)	<LOQ (<0.30)	0.40	<LOQ (<0.30)
Total glucosinolates [mmol/kg]	≤ 1	0.14	<LOQ (<0.05)	<LOQ (<0.05)	<LOQ (<0.05)	<LOQ (<0.05)
Purity**						
Phytates [%]	≤ 1.5	1.01	1.04	1.25	0.99	0.79
Lead [mg/kg]	≤ 0.35	0.229	0.280	0.060	0.189	0.115
Arsenic [mg/kg]	≤ 0.15	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)	<LOQ (<0.1)
Cadmium [mg/kg]	≤ 0.2	0.101	0.197	0.020	0.140	0.102
Mercury [mg/kg]	≤ 0.1	<LOQ (<0.005)	<LOQ (<0.005)	<LOQ (<0.005)	<LOQ (<0.005)	<LOQ (<0.005)
Microbiological criteria						
Total plate count [cfu/g]	≤ 10 ⁴	290	<10	<10	450	1 400
<i>E. coli</i>	absent in 10g	absent	absent	absent	absent	absent

