

# Pesticide Residue Monitoring Databases

## User Manual – FY 2023

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## INTRODUCTION

The U.S. Food and Drug Administration (FDA) conducts an ongoing program of monitoring for pesticide residues in foods, and the results are published annually in the FDA Pesticide Residue Monitoring Report. The analytical data used to create the report are made available here.

The data files include the original analytical sample data (SampleDataYYYY.txt), and three statistical summary files (ProductYYYY.txt, ChemicalYYYY.txt, and CountryProductResidueYYYY.txt). Additionally, six other reference files are provided: MethodScopeYYYY.txt, ProdCode.txt, ExtCode.txt, DetCode.txt, Country.txt, and Chemical.txt. All files are described below.

The data in these files are the same as those provided in previous years, however for ease of use and clarity some changes were made in the file and field names beginning in 2013. For example, the four statistical summary files analyzing the sample data by country/product/residue (formerly named USYYYY.txt, IMFYYYY.txt, IMVEYYYY.txt, and IMOTYYYY.txt) have been consolidated into a single file named CountryProductResidueYYYY.txt. Changes in the file names are summarized in the table below.

### File names: 2023 vs. prior to 2013

2023	Prior to 2013
SampleData2023.txt	SMPLYYYYY.TXT
Product2023.txt	PRODYYYY.TXT
Chemical2023.txt	CHEMYYYY.TXT
CountryProductResidue2023.txt	USYYYYYY.TXT IMFRYYYY.TXT IMVEYYYY.TXT IMOTYYYY.TXT
MethodScope2023.txt	METHYYYY
ProdCode.txt	Prodcode.txt
ExtCode.txt	Extncode.txt
DetCode.txt	Detncode.txt
Country.txt	Country.txt
Chemical.txt	Chemical.txt

Field names that have been changed are flagged using an asterisk (\*) and the previous field name has been provided in descriptions of the fields for each file. Directions for downloading and executing (decompressing) the individual files follow the background information about the pesticide program and the details of file structure and content.

## DATA FILES

### General Information

1. All files are in tab-delimited text format.
2. The field “Year” refers to samples which were collected during the FDA fiscal year of October 1 through September 30. Prior to 2018, the field “Year” referred to samples for which analysis was completed during the FDA fiscal year.
3. The field “Country” refers to the country of origin of the commodity, i.e., where the commodity was produced. Import samples collected while in U.S. commerce (i.e., domestic import samples) are listed as “United States\*”.
4. Domestic samples are commodities produced and held for sale in the U.S. Import samples refer to commodities that originate from another country and have been submitted for entry into U.S. commerce through U.S. customs. Domestic Import samples have passed through customs and are in domestic commerce. The FDA may have previously taken a sample of the product while in import status, or the product may have been permitted entry without being sampled (e.g., sampled at retail rather than at a port).
5. Percentages are rounded to two significant figures in the statistically derived fields.
6. In the field names, “#” refers to the count or number of occurrences and “%” refers to the corresponding percentage.
7. In this manual “YYYY” in a file name refers to the four-digit year code.

### Analytical Sample Data File and Reference Code Tables

FDA pesticide analytical results are entered into a computerized reporting system by FDA's field staff. Generally, each sample is analyzed using multiple methods (combination of extraction and determination procedures). At least one record is entered for each method employed following the analysis of a sample. If no residues were detected by a method, a residue code indicating “No residue found” is entered for the method. The scope of residues not found using the method is listed in the “MethodScopeYYYY.txt” file. When reportable residues are found, at least one record is entered for each residue found. Because the analytical methods used for a given sample may overlap in scope, i.e., a given pesticide may be detected by more than one of the methods used, a residue might be reported multiple times per sample when it was detected under multiple methods. A residue might also be reported multiple times per sample when multiple types of analyses are conducted; e.g., “Original”, “Check”, “Duplicate” or “Additional” analyses (see description of analytical types in the description of the “Type” field in the table below).

Individual residue components (e.g., endosulfan I, endosulfan II, endosulfan sulfate) are generally reported, rather than the total of components related to a given parent pesticide.

The field names and their descriptions for the SampleDataYYYY.txt file are provided below.

## SampleDataYYYY.txt

Field Name	Description
Year	FDA fiscal year in which the sample was collected in the format "YYYY." The FDA fiscal year begins October 1 and ends September 30.
SplNo*	Sample number ( <i>prior to 2013 "SplNo"</i> )
SplDescr*	Sample description in narrative format provided by sample collector ( <i>prior to 2013 "Spl"</i> )
ProdCode	Five-character alphanumeric classification of the sample commodity. A list of product codes and full product names is included in the "ProductCode.txt" reference file.
ProdName	FDA product description based upon the product code. A list of product codes and full product names is also included in the "ProductCode.txt" reference file.
Origin*	Origin of sample "I" for import samples, "R" for import samples collected while in domestic commerce, or "D" for domestic samples ( <i>prior to 2013 "Orig"</i> )
Country	Country of origin; i.e., where it was produced. A list of countries is also included in the "Country.txt" reference file.
State	Two-character postal abbreviation of state where sample was collected
PAC	Program Assignment Code indicates the program or assignment under which the sample was analyzed; see list of PACs.
CollDist*	Code for FDA district/division where sample was collected, see list of collection districts ( <i>prior to 2013 "ColDist"</i> ).
CollDate*	Date sample collected in text format "YYYYMMDD" ( <i>prior to 2013 "ColDate"</i> )
CmplDate*	Date sample analysis completed in text format "YYYYMMDD" ( <i>prior to 2013 "CompDate"</i> )
LabClass	Code for compliance classification of the sample, see list of lab classifications.
SubNo	Code identifies an individual subsample within the sample. It is normally blank indicating no subsamples were analyzed, otherwise it may contain a numeric value or standardized code.
Portion	Code that identifies what portion of the sample was analyzed (B=bottoms, C=cooked, E=edible portion, P=packaging material, R=raw, T=tops, W=whole product, X=other). If blank, whole product was composited and analyzed.
Type*	Code indicates type of analysis, e.g., "O" = original analysis, "C" = check analysis, "A" = additional analysis, "D" = duplicate analysis, "I" = identification of the residue only. ( <i>prior to 2013 "AnalType"</i> )
VioType*	Code given to violative residues indicating the type of violation. VioTypes are described in a separate table below. ( <i>prior to 2013 "AdvFlag"</i> )
ResCode	Three-digit residue code, e.g., "000" = No residue found. Note: Residue code "RES" indicates a residue was found and reported under a different analysis.
ResName	Name of pesticide residue

<b>Field Name</b>	<b>Description</b>
Trace	"T" indicates residue level is below the Limit of Quantitation or 0.01 ppm, whichever is higher.
Found	Numeric level of residue found
Unit	Unit for amount of residue found, e.g., "M" = ppm, "B" = ppb
ExtCode	Three-digit code indicating the extraction method used for the analysis. See reference table "ExtCode.txt" for descriptions of extraction methods.
DetCode	Two-digit code indicating the determination method used for the analysis. See reference table "DetCode.txt" for descriptions of determination methods.
Lab*	Analytical laboratory code ( <i>prior to 2013 "AnalDist"</i> )
Remarks	Remarks about method or sample

In addition to the Field Name descriptions provided for the SampleDataYYYY.txt, reference code tables for several fields and codes found in the SampleDataYYYY.txt file are listed below:

#### **Collection District Codes (CollDist)**

<b>CollDist Code</b>	<b>Collection District or Division Office</b>
DENL	Denver Laboratory
DNBI	Division of Northern Border Imports
DNEI	Division of Northeast Imports
DSEI	Division of Southeast Imports
DSWI	Division of Southwest Imports
DWCI	Division of West Coast Imports
HAFE1	Division of Human and Animal Food Operations East I
HAFE2	Division of Human and Animal Food Operations East II
HAFE3	Division of Human and Animal Food Operations East III
HAFE4	Division of Human and Animal Food Operations East IV
HAFE5	Division of Human and Animal Food Operations East V
HAFE6	Division of Human and Animal Food Operations East VI
HAFW1	Division of Human and Animal Food Operations West I
HAFW2	Division of Human and Animal Food Operations West II
HAFW3	Division of Human and Animal Food Operations West III
HAFW4	Division of Human and Animal Food Operations West IV
HAFW5	Division of Human and Animal Food Operations West V
HAFW6	Division of Human and Animal Food Operations West VI
KCL	Kansas City Laboratory

## Program Assignment Codes (PAC)

<b>PAC Code</b>	<b>Program</b>
04004A	Pesticides and Industrial Chemicals in Food - Domestic and Import
04R800	Regulatory follow-up and/or audit sample
71003A	Feed Contaminants Program

## Laboratory Classification Codes (LabClass)

<b>Code</b>	<b>Lab Classification Description</b>
1	In compliance
2	Regulatory action not indicated
3	Adverse findings
4	No classification required
5	Sample not analyzed or reviewed

## Residue Violation Types (VioType)

<b>Code</b>	<b>Description of Residue/Commodity Violations</b>
N	Residue found for which no U.S. tolerance is registered for the pesticide or the pesticide/commodity combination
X	Residue found at a level exceeding an established U.S. tolerance
A	Residue found at a level exceeding an FDA action level
Null	Either no residue was detected or a residue was detected and was below the U.S. tolerance or action level.

## Statistical Summary Files

The ProductYYYY.txt, ChemicalYYYY.txt, and CountryProductResidueYYYY.txt files are statistically derived from the analytical results listed in SampleDataYYYY.txt and MethodScopeYYYY.txt. The program enters a zero value for all unreported pesticides within the scope of a method used for the analysis of a sample. For example, if a sample is tested using a method with a scope of 200 pesticides, a residue concentration of 0 is used for each pesticide not reported. In the case where “No residue found” was reported for a sample/method combination, a concentration of zero is used for all 200 pesticides. This is done for each sample method combination.

The resulting metafile is then statistically evaluated. In ProductYYYY.txt, sample counts are analyzed by country/product combinations. In ChemicalYYYY.txt, sample counts are analyzed by country/residue combinations. In CountryProductResidueYYYY.txt, sample counts are analyzed by country/product/residue combinations.

## ProductYYYY.txt

<b>Field Name</b>	<b>Description</b>
Year*	FDA fiscal year in which the sample was collected in the format "YYYY". The FDA fiscal year begins October 1 and ends September 30. <i>(prior to 2013 "FY")</i>
Country	Country of origin; i.e., where it was produced. A list of countries is also included in the "Country.txt" reference file. NOTE: Import samples collected in the United States are flagged with a "*", e.g., "United States*".
ProdCode*	Five-character alphanumeric classification of the sample commodity. A list of product codes and full product names is included in the "ProductCode.txt" reference file. <i>(prior to 2013 INDPD")</i>
ProdName*	FDA product description based upon the product code. A list of product codes and full product names is included in the "ProductCode.txt" reference file <i>(prior to 2013 "Product Name")</i> .
Spls#*	Number (#) of samples analyzed for the product code/country combination <i>(prior to 2013 "ANAL")</i>
Pos#*	Number (#) of samples found to contain at least one residue for the product code/country combination <i>(prior to 2013 "POS")</i>
Pos%*	Percentage (%) of samples found to contain at least one residue for the product code/country combination <i>(prior to 2013 "%POS")</i>
Vio#*	Number (#) of samples found to contain at least one violative residue for the product code/country combination <i>(prior to 2013 "VIOL")</i>
Vio%*	Percentage (%) of samples found to contain at least one violative residue for the product code/country combination <i>(prior to 2013 "%VI")</i>
ResScope#*	Total number (#) of different pesticides included in the scope of analysis for the method(s) used to analyze the samples for the country/product combination <i>(prior to 2013 "CVRD")</i>
Res#*	Number (#) of different pesticides found in the samples for the country/product combination <i>(prior to 2013 "FND")</i>

## ChemicalYYYY.txt

Field Name	Description
Year*	FDA fiscal year in which the sample was collected in the format "YYYY". The FDA fiscal year begins October 1 and ends September 30. ( <i>prior to 2013 "YR or FISCAL YEAR"</i> )
Country	Country of origin; i.e., where it was produced. A list of countries is also included in the "Country.txt" reference file. NOTE: Import samples collected in the United States are flagged with a "*", e.g., "United States*".
ResName*	Name of pesticide residue. See also list of pesticides within scope of all analyses in reference file "Chemical.txt" ( <i>prior to 2013 "Chemical Name"</i> )
Spls#*	Number (#) of samples analyzed for chemical by country ( <i>prior to 2013 "# CHEM CVRD"</i> )
Spls%*	Percentage (%) of samples analyzed for chemical by country ( <i>prior to 2013 "% CVRD"</i> )
Res#*	Number (#) of samples in which the chemical was found by country ( <i>prior to 2013 "&amp; FND CHEM"</i> )
Res%*	Percentage (%) of samples chemical found by country ( <i>prior to 2013 "% FND"</i> )
Vio#*	Number (#) of samples in which chemical found at violative levels by country ( <i>prior to 2013 "VIOL RES"</i> )
Vio%*	Percentage (%) of samples in which chemical found at violative levels by country ( <i>prior to 2013 "% VIOL"</i> )

## CountryProductResidueYYYY.txt

Field Name	Description
Year*	FDA fiscal year in which the sample was collected in the format "YYYY". The FDA fiscal year begins October 1 and ends September 30. ( <i>prior to 2013 "FY"</i> )
Country*	Country of origin; i.e., where it was produced. A list of countries is also included in the "Country.txt" reference file. NOTE: Import samples collected in the United States are flagged with a "*", e.g., "United States*". ( <i>prior to 2013 "ORIGIN"</i> )
ProdCode*	Five character alphanumeric classification of the sample commodity. A list of product codes and full product names is included in the "ProductCode.txt" reference file. ( <i>prior to 2013 "INDPD"</i> )
ProdName*	FDA product description based upon the product code. A list of product codes and full product names is included in the "ProductCode.txt" reference file. ( <i>prior to 2013 "PRODUCT NAME"</i> )
ResName*	Name of pesticide residue. See also list of pesticides within scope of all analyses in reference file "Chemical.txt" ( <i>prior to 2013 "RESIDUE NAME"</i> )
Spls#*	Number (#) of samples analyzed for the residue for the product code/country combination ( <i>prior to 2013 "CVRD"</i> )
Spls%*	Percentage (%) of samples analyzed for the residue for the product code/country combination ( <i>prior to 2013 "% CV"</i> )
Pos#*	Number (#) of samples found to contain the residue for the product code/country combination ( <i>prior to 2013 "FND"</i> )
Pos%*	Percentage (%) of samples found to contain the residue for the product code/country combination ( <i>prior to 2013 "% FD"</i> )
Vio#*	Number (#) of samples found to contain the residue at violative levels for the product code/country combination ( <i>prior to 2013 "VIO"</i> )
Vio%*	Percentage (%) of samples found to contain the residue at violative levels for the product code/country combination ( <i>prior to 2013 "% VI"</i> )
Trace#*	Number (#) of trace level residues found ( <i>prior to 2013 "TRACE"</i> )
Mean	Mean residue level, includes trace levels
Minimum	Minimum residue level, includes trace levels
Median	Median residue level, include trace levels
90th	90th percentile residue level, includes trace levels
Maximum	Maximum residue level, includes trace levels

## REFERENCE FILES

Six additional reference files are included.

### 1. MethodScopeYYYY.txt

Lists all pesticide chemicals analyzed by each extraction/determination combination during the current fiscal year.

Field Name	Description
ExtCode	Three-digit code indicating the extraction method used for the analysis. See reference table "ExtCode.txt" for descriptions of extraction methods.
DetCode	Two-digit code indicating the determination method used for the analysis. See reference table "DetCode.txt" for descriptions of determination methods.
ResCode	Three-digit residue code, e.g., "000" = No residue found. Residue code "RES" = a residue was found and reported under a different analysis.
ResName	Name of pesticide residue

### 2. ProdCode.txt

Lists each product code "ProdCode" and its corresponding description "ProdName." The first two positions of the five-position product code field are called the "industry code" and indicate the general category of product. For example, industry code 16 is fishery/seafood products and industry codes 20, 21, and 22 are fruits. The third position is the "subclass code," which designates a subcategory of product; subclass codes vary among industry codes. The last two positions identify a specific product within the industry and subclass. The term "N.E.C." indicates "not elsewhere classified."

### 3. ExtCode.txt

Lists each extraction method code "ExtCode" with corresponding description "Description." In the extraction descriptions, the term "PAM" refers to the FDA Pesticide Analytical Manual and the term "LIB" refers to Laboratory Information Bulletin, which is an internal FDA publication.

### 4. DetCode.txt

Lists each determination method code "DetCode" with corresponding description "Description." In the determination descriptions, the term "PAM" refers to the FDA Pesticide Analytical Manual and the term "LIB" refers to Laboratory Information Bulletin, which is an internal FDA publication.

### 5. Chemical.txt

Lists each residue code "ResCode" with its corresponding residue name "ResName."

### 6. Country.txt

Lists each country from which samples have been collected.