



**APPENDIX G  
CSFII CONSUMER INTAKE ANALYSIS**

**INTAKE ESTIMATES: SPREADS AND SALAD DRESSINGS  
USING THE USDA 1994/96 CONTINUING SURVEYS OF  
FOOD INTAKES BY INDIVIDUALS**

**PREPARED BY:**

Novigen Sciences, Inc.  
1730 Rhode Island Avenue, NW  
Suite 1100  
Washington, DC 20036

**AND**

Lipton  
800 Sylvan Avenue  
Englewood Cliffs, NJ 07632

**Revised  
September, 1999**

**APPENDIX G**  
**CSFII CONSUMER INTAKE ANALYSIS**  
**INTAKE ESTIMATES: SPREADS AND SALAD DRESSINGS**  
**USING THE USDA 1994/96 CONTINUING SURVEYS OF FOOD INTAKES BY**  
**INDIVIDUALS**

In support of a health claim petition for the use of vegetable oil sterol esters in salad dressings and spreads, Lipton requested that Novigen Sciences, Inc. (Novigen) evaluate intake of commercial salad dressings and spreads. Intakes were estimated using Novigen's Foods Analysis and Residue Evaluation Program (FARE™) and USDA Continuing Surveys of Food Intakes by Individuals (CSFII) conducted from 1994 through 1996.

The USDA provided statistical weights that permitted the data from the 1994 through 1996 surveys to be combined. Statistical weights were developed by Westat, Inc., to adjust for over- and under-representation of certain population subgroups in the unweighted sample due to the sample design. The weighted data are considered to be representative of the consumption pattern for the entire US population.

Individuals were surveyed in all four seasons and on all days of the week. Approximately 16,000 individuals participated in the 1994/96 surveys. In addition to information on food consumption, physiological and demographic data such as gender, age, self-reported height and weight, ethnic group, pregnancy and lactation status, and household income were collected. This information permits an assessment of food consumption by specific population groups of interest. Quantities of foods and beverages consumed were recorded in household measures; USDA converted the quantities to grams units.

The survey methodology used in the 1994/96 CSFII included collecting information on the amounts and kinds of foods consumed at home and away from the home. Data were collected by an in-person interviewer using a multiple-pass 24-hour recall. Food consumption information was collected for each survey participant on two nonconsecutive days. Separate statistical weights were developed for consumption data collected on Day 1 of the survey and for data collected from individuals participating in both days of the survey. Data from only those individuals reporting both days in the survey were used for estimating intakes of salad dressings and spreads.

For all CSFII surveys, USDA evaluates the consumption data to identify mistakes and, if possible, corrects errors. USDA does not remove any observations that cannot be confirmed as mistakes. A review of the data on a record-by-record basis identifies observations that are extremely unlikely to be actual intake but are much more likely to be errors in either the recording or transcription of the data. For example, in one of the surveys, one individual reported consuming over 3000 grams of beef during a single eating occasion.

The distribution of reported beef intake per eating occasion for the US population ranges from essentially 0 g/eating occasion to more than 3000 g/eating occasion. The individual who reported eating 3000 g is very unlikely to have consumed this quantity—it is not a reasonable value, especially since the next highest amount reported consumed was approximately 700 g. More likely, the 3000 g amount is an error in the survey record.

## APPENDIX G

### CSFII CONSUMER INTAKE ANALYSIS

The consumption data utilized in the intake estimates presented in this analysis included all data determined by USDA to be appropriate (i.e., no extreme consumption estimates were removed from the USDA database).

Also, the intake estimates in the distributions of intake on a per-capita basis will be reported as zero up to the percentage of consumers. For example, on a person day basis approximately 15% of the US population consumes commercial salad dressings. Thus, on a per-capita basis, the intake distributions will be zero up to the 85th percentile of intake (i.e., representing that proportion of the population that does not consume the foods of interest). Because of the relatively low percentages of consumers for salad dressings and for table spreads, the average per-capita consumption estimate and the maximum amount consumed may be substantially different. That is, on a per-capita basis, the average consumption estimate is calculated based on the total amount of food consumed divided by the number of people in the population, regardless of whether they consumed the food of interest. In contrast, the average intake estimate for users only is calculated based on the total amount consumed divided by the number of people that consumed the food of interest.

Intakes for the following population groups<sup>1</sup> were evaluated: 1) overall US population; 2) children 1 to 6 years of age; 3) adults 13 years of age and older; 4) adults 40 years of age and older; and 5) adults 55 years of age and older. Results for adults 13 years of age and older are presented in this report.

Intake estimates for all salad dressings, except mayonnaise and mayonnaise-like salad dressings, are presented in Table 1. Intake estimates for all margarine and margarine-like spreads (including low-fat spreads) are presented in Table 2.

As an estimate of the potential intake of vegetable oil sterol esters in low-fat salad dressings and spreads, Table 3 shows consumption estimates for those consumers of both commercial salad dressings and margarine/margarine-like spreads. That is, intake estimates for only those consumers of both commercial dressing and margarine/margarine-like spreads are reported.

The summary tables list average and maximum intake estimates (on a gram/person/day basis), as well as estimates at the 50<sup>th</sup> and 90<sup>th</sup> percentiles of consumption for each population group of interest. Both per-capita and consumers only intake estimates are presented. Per-capita estimates are based on the total population (or population subgroup)—whether or not they consumed one of the foods of interest. Intake estimates for consumers only include only those people who reported consuming at least one of the foods of interest.

Also, the percent consumers is provided in the tables. Percent consumers is reported as

---

<sup>1</sup> For infants, there was no intake of these low-fat products reported in the 1994/96 CSFII (or the amount was so small that calculating an intake distribution was not possible).

## **APPENDIX G**

### **CSFII CONSUMER INTAKE ANALYSIS**

- (1) total people consuming one of the foods of interest as a percentage of total people in the subpopulation, and
- (2) total people days consuming one of the foods of interest as a percentage of total people days in the subpopulation (each survey respondent has two days' of intake reported; each of these days is termed a people-day).

For example, in Table 1, based on people days, 14.92% of the US population reported consuming commercial salad dressings (excluding mayonnaise and mayonnaise-like dressings). Based on the number of people (i.e., not people days), 25.54% of the total US population consume commercial salad dressings.

On a per-capita basis, the mean intake estimate is 5.97 g/person/day. In contrast, the mean intake for consumers only is 40.02 g/person/day. Because less than 15% of the population consumed at least one of the salad dressings, on a per-capita basis, the 50<sup>th</sup> percentile of consumption is zero.

Based on the number of people, less than 7% of the US population consume both commercial salad dressings and margarine/margarine like spreads; less than 4% (on a person-day basis) consumes both these products on the same day (Table 3).

Intake estimates presented in Tables 1 through 3 represent conservative estimates of the potential intake of vegetable oil sterol esters in low-fat salad dressings and spreads, since consumption of all commercial dressings and spreads are reported. In practice, vegetable oil sterol esters will be used only in low-fat salad dressings and spreads.

**APPENDIX G**  
**CSFII CONSUMER INTAKE ANALYSIS**

**TABLE 1. INTAKE ESTIMATES FOR SALAD DRESSINGS<sup>2</sup>**  
**1994/96 CSFII**

**Per-Capita Intake (g/person/day)**

	<b>US Population</b>	<b>Adults 13 Years +</b>	<b>Adults 40 Years +</b>	<b>Adults 55 Years +</b>
<b>Mean</b>	5.97	6.998	7.52	6.745
<b>50th Percentile</b>	---	---	---	---
<b>90th Percentile</b>	25.26	29.36	30.03	29.16
<b>Maximum</b>	360.2	360.2	245	216.5
<b>Percent Consumers</b>				
<b>Number of People</b>	25.54	28.50	31.98	31.17
<b>People Days</b>	14.92	16.77	19.35	19.06

	<b>US Population</b>	<b>Adults 13 Years +</b>	<b>Adults 40 Years +</b>	<b>Adults 55 Years +</b>
<b>Mean</b>	40.02	41.72	38.87	35.39
<b>50th Percentile</b>	30.46	30.91	30.28	29.54
<b>90th Percentile</b>	75.19	78.32	67.94	62.98
<b>Maximum</b>	360.2	360.2	245	216.5

<sup>2</sup> Includes all commercial salad dressings, except for mayonnaise and mayonnaise-like dressings.

## APPENDIX G CSFII CONSUMER INTAKE ANALYSIS

**TABLE 2. INTAKE ESTIMATES FOR ALL TABLE SPREADS<sup>3</sup>  
1994/96 CSFII**

### Per-Capita Intake (g/person/day)

	<b>US Population</b>	<b>Adults 13 Years +</b>	<b>Adults 40 Years +</b>	<b>Adults 55 Years +</b>
<b>Mean</b>	2.283	2.486	3.033	3.431
<b>50<sup>th</sup> Percentile</b>	---	---	---	---
<b>90<sup>th</sup> Percentile</b>	7.790	9.595	10.610	11.840
<b>Maximum</b>	186.4	186.4	186.4	155.8
<b>Percent Consumers</b>				
<b>Number of People</b>	30.83	31.09	37.54	42.32
<b>People Days</b>	19.95	20.33	25.74	30.25

### Consumers Only Intake (g/person/day)

	<b>US Population</b>	<b>Adults 13 Years +</b>	<b>Adults 40 Years +</b>	<b>Adults 55 Years +</b>
<b>Mean</b>	11.44	12.23	11.78	11.34
<b>50<sup>th</sup> Percentile</b>	7.826	9.518	9.064	7.73
<b>90<sup>th</sup> Percentile</b>	25.91	26.71	26.35	25.71
<b>Maximum</b>	186.4	186.4	186.4	155.8

<sup>3</sup> Includes all margarine and margarine-like spreads.

**APPENDIX G**  
**CSFII CONSUMER INTAKE ANALYSIS**

	<b>US Population</b>	<b>Adults 13 Years +</b>	<b>Adults 40 Years +</b>	<b>Adults 55 Years +</b>
<b>Mean</b>	1.715	1.997	2.476	2.662
<b>50th Percentile</b>	---	---	---	---
<b>90th Percentile</b>	---	---	---	---
<b>Maximum</b>	459.6	459.6	174.8	174.8
<b>Percent Consumers</b>				
<b>Number of People</b>	6.46	7.16	9.63	10.50
<b>People Days</b>	3.52	3.92	5.30	5.96

	<b>US Population</b>	<b>Adults 13 Years +</b>	<b>Adults 40 Years +</b>	<b>Adults 55 Years +</b>
<b>Mean</b>	48.77	50.99	46.71	44.64
<b>50th Percentile</b>	41.11	43.03	40.16	38.53
<b>90th Percentile</b>	86.67	89.26	82.25	80.36
<b>Maximum</b>	459.6	459.6	174.8	174.8