

SECTION 7. PLANNING THE 2003 FSIS IMPORT MONITORING PLAN: PESTICIDES

PHASE I - GENERATING AND RANKING LIST OF CANDIDATE COMPOUNDS

The list of compounds of concern for the Import Monitoring Plan is identical to that for the Domestic Monitoring Plan (see Section 6, Table 6.1). Furthermore, in ranking pesticides for inclusion in the Import Monitoring Plan, FSIS chose to employ the ranking scores generated for the Domestic Monitoring Plan (see Section 6), because FSIS does not have sufficient historical data on pesticides in imported products to predict their violation rates. However, if FSIS has reason to believe that a compound is being misused in a foreign country then it would add that compound/country pair to the Import Monitoring Plan.

PHASE II - SELECTING PESTICIDES FOR INCLUSION IN THE 2003 IMPORT MONITORING PLAN

The list of high priority compounds chosen for the Import Monitoring Plan by the Surveillance Advisory Team (SAT) was the same as that for the domestic plan. Once the high-priority compounds and compound classes had been identified, FSIS applied non-public health considerations to determine which compounds FSIS should sample. The principal non-public health factor was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Based on these constraints, only the chlorinated hydrocarbon/chlorinated organophosphate (CHC/COP)¹ compound class can be included in the NRP. The compounds that can be identified by this multiresidue method are listed in Section 6, Phase II, p 76.

PHASE III - IDENTIFYING THE COMPOUND/PRODUCT CLASS PAIRS

As with the domestic program, the FSIS decided to sample for CHC's and COP's in all product classes as a means of monitoring incidents of accidental contamination.

PHASE IV - ALLOCATION OF SAMPLING RESOURCES

ALLOCATION OF SAMPLING RESOURCES AMONG DIFFERENT PRODUCT CLASSES

EGG PRODUCTS

The samples for residue analysis for imported egg products are selected in a different manner than the other product classes. As stated in Section 2, in order to establish a history of compliance with the U.S. requirements for each egg product category for egg products, the first ten shipments from individual foreign establishments are subjected to 100 % reinspection. If the egg product is in compliance the rate of

¹Phenylbutazone is also detected by this method.

inspection is reduced to a random selection of one reinspection out of eight product lots from each foreign establishment. This reinspection rate will continue as long as the product is in compliance.

ANIMAL PRODUCT CLASSES

Table 5.2, *Estimated Annual Amount (in lbs.) of Product Imported*, lists the estimated amounts of all product classes imported into the U.S. and the percentage of each of the product classes. The percentage of each product class imported annually is calculated using the following formula:

$$\% \text{ Product Class Imported } (P_C) = \frac{\text{Amount Product Class Imported}}{\text{Total Product Imported}} \times 100 \quad (7.1)$$

The relative sampling priority is obtained by multiplying the percent product class imported (P_C) by the pesticide scores obtained in Phase I, using the following equation:

$$\text{Relative Sampling Priority} = (P_C) \times \text{Pesticide Score} \quad (7.2)$$

Based on the scores, one of the following sampling options is chosen: (1) very high regulatory concern (460 analyses/year); (2) high regulatory concern (300 analyses/year); (3) moderate regulatory concern (230 samples/year); or (4) low regulatory concern (90 samples/year). This is indicated in Table 7.1, *Number of Pesticide Samples/Product Class*, in the column labeled “Number of Samples.”

Starting this year, FSIS in its Import Monitoring Plan will not test (1) processed products from eligible foreign countries that also ship fresh products to the United States; and (2) processed products from countries that source all their raw materials from other foreign countries that are eligible to ship fresh products and are actively exporting to the United States. Processed chicken products from Hong Kong and Mexico, processed turkey products from Hong Kong, and processed pork products from Belgium will not be sampled since the raw materials used are from countries that are eligible to ship raw products to the U.S.

As stated in Section 5, if a product class represents less than one percent (by weight) of total combined U.S. imports of meat, poultry and egg products, then the total number of samples analyzed for any compound or compound class is eight times the number of countries from which that product is imported. For example, if processed turkey is imported from only three countries and the amount imported is 0.10 % relative to total U.S. imports, 24 samples of processed turkey would be taken for each analysis, eight from each country.

The adjusted number of samples is listed in Table 7.1, *Number of Pesticide Samples/Product Class*, in the column labeled “Adjusted Number of Samples.” The final number of samples for a compound/product class is obtained after the allocation of samples among different countries is completed. The final number of samples is listed in Table 7.1 in the column labeled “Final Number of Samples.” The numbers in columns labeled “Adjusted Number of Samples” and “Final Number of Samples” may vary slightly because of the rounding upwards or downwards of the samples.

Allocation of Samples among Different Countries

The total number of samples chosen for each compound/product class pair was subdivided among the different countries. The number of samples for each country is based on the relative amount of total product class imported: less than one percent and greater than one percent.

Allocation of Samples in Product Classes Whose Total Volume Imported is Less Than 1%

As stated above, if the amount of an import product class was less than 1%, eight samples per compound/compound class were taken from each country. The relative amounts of fresh chicken, fresh goat, processed beef/pork, fresh and processed turkey, other fresh and processed fowl, processed varied combination, processed lamb/mutton, and processed veal was less than 1%. Also, as stated above, if a country is exporting both fresh and processed products or sources all their raw materials from eligible sources then no residue samples will be scheduled for the processed products from that country. The numbers of samples per country per product class for each compound/compound class are listed in Tables 7.2 - 7.11.

Allocation if Samples in Product Classes Whose Total Volume Imported is Greater Than 1%

For major product classes, the number of samples was allocated to each country depending upon the relative amount of product imported from that country. Table 5.3, *Estimated Annual Amount (in lbs.) of Product Imported/Country*, lists the amount of product imported from each country. The percent of a product class imported from a country was calculated as follows and is in Table 5.4, *Relative Annual Amount of Product Imported/Country*.

$$\text{Percent Product Class Imported per Country (P}_{C/C}) = \frac{\text{Amount of Product Class from Country}}{\text{Total Amount of Product Class}} \times 100 \quad (7.3)$$

Based upon the relative amount of product class imported per country, the number of samples that should be taken at the port of entry was calculated using the following formula:

$$\text{Unadjusted Number of Samples per Country (U}_{C/S}) = \text{Total Number of Samples} \times \frac{\text{P}_{C/C}}{100} \quad (7.4)$$

This is indicated in the column labeled “Unadjusted Number of Samples (U_{C/S}),” in Tables 7.12 to 7.18.

After the determining of the number of samples required from each country, each country with less than eight samples was assigned a minimum of eight samples. This is indicated in the column labeled “Adjustment # 1” in Tables 7.11 to 7.19. The results of this adjustment are in the column labeled “Initial Adj#.” If the total number of samples for a compound/product class resulted in more than the total number of samples allocated to that compound/product class pair, then a second adjustment then had to be made so that the total number of samples would be within an allocated number. This adjustment was made only to those countries from which greater than eight samples were to be taken. This was done using the following equation:

$$\text{Number of Samples after Adjustment \# 2} = (U_{C/S}) - \frac{[N \times (P_{C/C})]}{(P_{T/C})} \quad (7.5)$$

where,

$$N = (N_1) - (N_T)$$

N_1 = Total Number of Samples after Adjustment #1

N_T = Total Number of Samples Allocated

$P_{T/C}$ = Total Percent of Product Class from the Countries That Had Greater Than Eight Samples

$P_{C/C}$ = Percent Product Class Imported per Country

$U_{C/S}$ = Unadjusted Number of Samples

As mentioned above, if a country is exporting both fresh and processed products or sources all their raw materials from eligible sources then no residue samples will be processed from that country. The final numbers of products sampled are indicated in Tables 7.11 - 7.18, in the column labeled "Final Adj.#."

**Table 7.1
Number of Pesticide Samples/Product Class
2003 FSIS NRP, Import Monitoring Plan**

No. Countries	Product	Pesticide	Pesticide Score	Percent Product	Relative Sampling Priority	Number of Samples	Adjusted Number of Samples	Final Number of Samples
9	Beef, fresh	CHC's/COP's	16	59.01	944.11	460	460	459
7	Pork, fresh	CHC's/COP's	16	20.88	334.03	300	300	300
14	Pork, processed	CHC's/COP's	16	5.74	91.82	230	230	83
12	Beef, processed	CHC's/COP's	16	5.46	87.41	230	231	95
5	Lamb/Mutton, fresh	CHC's/COP's	16	3.83	61.32	230	89	90
3	Veal, fresh	CHC's/COP's	16	1.39	22.18	90	90	90
5	Chicken, processed	CHC's/COP's	16	1.81	28.92	90	90	24
1	Chicken, fresh	CHC's/COP's	16	0.73	11.64	90	8	8
3	Goat, fresh	CHC's/COP's	16	0.33	5.28	90	24	24
4	Turkey, processed	CHC's/COP's	16	0.21	3.43	90	32	16
4	Varied combination, processed	CHC's/COP's	16	0.12	1.94	90	90	32
1	Horsemeat, Fresh	CHC's/COP's	16	0.003	0.04	90	8	8
3	Other Fowl, processed	CHC's/COP's	16	0.07	1.09	90	24	8
5	Beef/Pork, processed	CHC's/COP's	16	0.08	1.32	90	40	24
1	Turkey, fresh	CHC's/COP's	16	0.03	0.51	90	8	8
3	Other Fowl, fresh	CHC's/COP's	16	0.03	0.46	90	24	24
4	Lamb/Mutton, processed	CHC's/COP's	16	0.01	0.13	90	32	8
2	Veal, processed	CHC's/COP's	16	0.0007	0.01	90	16	8
Total						2570	1746	1309

Table 7.2
Number of Samples/Product Class - Chicken, Fresh
2003 FSIS NRP, Import Monitoring Plan

CHICKEN, FRESH/ CHC's/COP's	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Canada	100.00	8	8
Total		8	8

Table 7.3
Number of Samples/Product Class - Turkey, Fresh
2003 FSIS NRP, Import Monitoring Plan

TURKEY, FRESH/ CHC's/COP's	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Canada	100.00	8	8
Total		8	8

Table 7.4
Number of Samples/Product Class - Turkey, Processed
2003 FSIS NRP, Import Monitoring Plan

TURKEY, PROCESSED/ CHC's/COP's	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Canada	86.04	8	0 ¹
Hong Kong	0.92	8	0
Israel	7.50	8	8
Mexico	5.54	8	8
Total		32	24

Table 7.5
Number of Samples/Product Class - Other Fowl, Fresh
2003 FSIS NRP, Import Monitoring Plan

OTHER FOWL, FRESH/CHC's/COP's	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Canada	87.66	8	8
France	10.30	8	8
New Zealand	2.05	8	8
Total		24	24

Table 7.6
Number of Samples/Product Class - Other Fowl, Processed
2003 FSIS NRP, Import Monitoring Plan

OTHER, FOWL, PROCESSED/CHC's/COP's	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Canada	97.83	8	0 ¹
France	2.17	8	0
Israel	0.00	8	8
Total		24	8

Table 7.7
Number of Samples/Product Class - Veal, Processed
2003 FSIS NRP, Import Monitoring Plan

VEAL, PROCESSED/CHC's/COP's	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Canada	86.80	8	0 ¹
France	23.20	8	8
Total		16	8

Table 7.8
Number of Samples/Product Class - Beef/Pork, Processed
2003 FSIS NRP, Import Monitoring Plan

BEEF/PORK, PROCESSED/CHC's/COP's	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Australia	0.29	8	0 ¹
Austria	0.001	8	8
Canada	99.02	8	0 ¹
France	0.11	8	8
Netherlands	0.58	8	8
Total		40	24

Table 7.9
Number of Samples/Product Class - Lamb/Mutton, Processed
2003 FSIS NRP, Import Monitoring Plan

LAMB/MUTTON, PROCESSED/CHC's/COP's	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Australia	35.63	8	0 ¹
Canada	47.96	8	0 ¹
France	0.15	8	8
New Zealand	16.26	8	0 ¹
Total		32	8

Table 7.10
Number of Samples /Product Class - Goat, Fresh
2003 Import Residue Plan

GOAT, FRESH/CHC's/COP's	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Australia	89.13	8	8
Canada	0.001	8	8
New Zealand	10.87	8	8
Total		24	24

Table 7.11
Number of Samples/Product Class – Horse, Fresh
2003 FSIS NRP, Import Monitoring Plan

HORSE, FRESH/ CHC's/COP's	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Canada	100.00	8	8
Total		8	8

Table 7.12
Number of Samples /Product Class - Varied Combination, Processed
2003 FSIS NRP, Import Monitoring Plan

VARIED COMBINATION, PROCESSED/CHC'S/COP'S	PERCENT PRODUCT	UNADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
Australia	0.77	8	8
Canada	97.19	8	8
Croatia	0.36	8	8
France	0.54	8	8
New Zealand	1.13	8	8
Total		40	40

Table 7.13
Number of Samples/Product Class - Beef, Fresh
2003 FSIS NRP, Import Monitoring Plan

BEEF, FRESH/CHC'S/COP'S	PERCENT PRODUCT (P_{C/C})	UNADJUSTED NUMBER OF SAMPLES (U) = 460*[(P_{C/C})/100]	ADJUSTMENT #1 (8 MINIMUM/COUNTRY)	INITIAL ADJ.#	ADJUST. # 2	FINAL ADJ.#
Argentina	0.21	1	8	8		8
Australia	39.35	181		181	168	168
Canada	39.50	182		182	169	169
CostaRica	0.97	4	8	8		8
Honduras	0.05	0	8	8		8
Mexico	0.36	2	8	8		8
New Zealand	17.39	80		80	74	74
Nicaragua	1.34	6	8	8		8
Uruguay	0.83	4	8	8		8
Total		460		491		459

Table 7.14
Number of Samples /Product Class - Lamb/Mutton, Fresh
2003 FSIS NRP, Import Monitoring Plan

LAMB/MUTTON, FRESH/CHC'S/COP'S	PERCENT PRODUCT (P_{C/C})	UNADJUSTED NUMBER OF SAMPLES (U_{C/S}) = 230*[(P_{C/C})/100]	ADJUSTMENT #1 (8 MINIMUM/COUNTRY)	INITIAL ADJ.#	ADJUST. # 2	FINAL ADJ.#
Australia	70.13	63		63	64	47
Canada	0.54	0	8	8		8
Iceland	0.07	0	8	8		8
New Zealand	29.02	26	8	26	26	19
Uruguay	0.24	0	8	8		8
Total		89		113	90	90

Table 7.15
Number of Samples/Product Class - Pork, Processed
2003 FSIS NRP, Import Monitoring Plan

PORK, PROCESSED/ CHC's/COP's	PERCENT PRODUCT (P_{C/C})	UNADJUSTED NUMBER OF SAMPLES (U_{C/S}) =300*(P_{C/C})/100	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST. # 2	FINAL ADJ.#
Austria	0.06	0	8	8		8
Belgium	3.41	8	8	8		0 ¹
Canada	65.02	150		150	107	0 ¹
Croatia	0.10	0	8	8		8
Denmark	14.51	33		33	23	0 ¹
France	0.17	0	8	8		8
Germany	0.33	1	8	8		8
Hungary	1.78	4	8	8		8
Italy	2.49	6	8	8		8
Mexico	0.08	0	8	8	8	0 ¹
Netherlands	4.76	11		11	11	8
Poland	6.98	16		16		11
Spain	0.30	1	8	8		8
Northern Ireland	0.002	0	8	8		8
Total		230		290		83

Table 7.16
Number of Samples /Product Class - Veal, Fresh
2003 FSIS NRP, Import Monitoring Plan

VEAL, FRESH/ CHC's/COP's	PERCENT PRODUCT (P_{C/C})	UNADJUSTED NUMBER OF SAMPLES (U_{C/S}) =90*(P_{C/C})/100	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST.# 2	FINAL ADJ.#
Australia	22.74	20		20	20	20
Canada	36.60	33		33	33	34
New Zealand	40.66	37		37	37	36
Total		90		90		90

Table 7.17
Number of Samples /Product Class - Pork, Fresh
2003 FSIS NRP, Import Monitoring Plan

PORK, FRESH/ CHC's/COP's	PERCENT PRODUCT (P_{C/C})	UNADJUSTED NUMBER OF SAMPLES (U_{C/S}) =300*(P_{C/C})/100	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST.# 2	FINAL ADJ.#
Australia	0.004	0	8	8		8
Canada	89.29	268		268	3	228
Denmark	10.24	31		31	1	32
Finland	0.31	1	8	8		8
Ireland	0.05	0	8	8		8
Mexico	0.02	0	8	8		8
Sweden	0.09	0	8	8		8
Total		300		339		300

Table 7.18
Number of Samples/Product Class - Chicken, Processed
2003 FSIS NRP, Import Monitoring Plan

CHICKEN, PROCESSED/ CHC's/COP's	PERCENT PRODUCT (P_{C/C})	UNADJUSTED NUMBER OF SAMPLES (U)= 90*[(P_{C/C})/100]	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST.# 2	FINAL ADJ.#
Canada	96.71	87		88	58	0 ¹
France	0.05	0	8	8		8
Hong Kong	0.03	0	8	8		0
Israel	1.96	2	8	8		8
Mexico	1.25	1	8	8		8
Total		90		120		32

Table 7.19
Number of Samples /Product Class - Beef, Processed
2003 FSIS NRP, Import Monitoring Plan

BEEF, PROCESSED CHC's/COP's	PERCENT PRODUCT (P_{C/C})	UNADJUSTED NUMBER OF SAMPLES (U_{C/S})= 300*[(P_{C/C})/100]	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST. # 2	FINAL ADJ.#
Argentina	24.16	56		56	42	0 ¹
Australia	0.95	2	8	8		0 ¹
Brazil	41.66	96		96	71	71
Canada	25.91	60		60	45	0 ¹
CostaRica	0.001	0	8	8		0 ¹
Croatia	0.03	0	8	8		0 ¹
France	0.05	0	8	8		8
Italy	0.001	0	8	8		8
Mexico	3.31	8	8	8		0 ¹
New Zealand	1.14	3	8	8		0 ¹
Switzerland	0.001	0	8	8		8
Uruguay	2.77	6	8	8		0 ¹
Total		231		284		95

¹ There will be no sampling of processed products from countries that also ship fresh products to the United States or source their raw material from other foreign countries that are eligible to ship fresh product and are actually exporting to United States.

SECTION 8. PLANNING THE 2003 FSIS DOMESTIC MONITORING PLAN AND EXPLORATORY PROJECTS, AND IMPORT MONITORING PLAN: ENVIRONMENTAL CONTAMINANTS

The candidate environmental and processing contaminants of concern selected by members of the Surveillance Advisory Team (SAT) were as follows:

--Environmental Contaminants:

- X dioxins
- X heavy metals
- X mycotoxins

--Processing Contaminants:

- X nitrosamines
- X maillard reaction products (from charring)
- X compounds migrating from packaging
- X polyaromatic hydrocarbons
- X breakdown products of oils used in deep frying

Of these, two compound classes were identified by the Surveillance Advisory Team as meriting inclusion in the NRP.

The first set of compounds was the dioxins. FSIS is conducting an Exploratory Project to survey dioxin compounds in each of the major domestic bovine, porcine, and poultry production classes (steers/heifers, market hogs, young chickens, and young turkeys). This survey started in 2002, and is expected to be completed by 2003. Samples will be collected by FSIS inspectors, and shipped for analysis to the Red River Valley Agricultural Research Center of the Agricultural Research Service, in Fargo, ND. The goal of this survey is to collect information about dioxin in domestically produced meat and poultry in a statistically valid manner. Information gathered from the survey will help FSIS begin to understand factors that might contribute to dioxin levels in meat and poultry. The planned sample numbers are given in Table 8.1.

The second set of compounds was the heavy metals, particularly lead. Suggested projects included a baseline study for levels of heavy metals in meat and poultry, and projects to analyze for lead in raw meat products used in baby food, and in baby food containing vegetable root material. Nevertheless, heavy metals will not be included in the 2003 NRP, as FSIS does not have the resources necessary to implement a heavy metals survey at this time.

No processing contaminants have been designated for analysis this year.

Even if a contaminant is not scheduled for inclusion in the FSIS NRP, should a contamination incident occur during the year, FSIS can initiate residue sampling as part of an FSIS Emergency Response Project

Table 8.1
Number of Samples/Product Class, Dioxins Survey
2003 FSIS NRP, Domestic Exploratory Project

PRODUCTION CLASS	NUMBER OF SAMPLES
Steers/heifers	136
Market hogs	136
Young chickens	144
Young turkeys	84
Total	500