

SECTION 7
PLANNING THE 1999 FSIS
IMPORT RESIDUE PLAN:
PESTICIDES

SECTION 7. PLANNING THE 1999 FSIS IMPORT RESIDUE PLAN: PESTICIDES

PHASE I - GENERATING AND RANKING LIST OF CANDIDATE COMPOUNDS

The Food Safety and Inspection Service (FSIS) asked the Environmental Protection Agency (EPA) to generate a list of candidate compounds for the 1999 Import Residue Plan. EPA's list of compounds of concern for the Import Residue Plan was identical to that for the Domestic Residue Plan (see Section 6, Table 6.1). Furthermore, in ranking pesticides for inclusion in the Import Residue Plan, FSIS chose to employ to the ranking scores generated for the Domestic Residue Plan (see Section 6), because FSIS does not have sufficient historical data on pesticides in imported products to predict their violation rates.

PHASE II - SELECTING PESTICIDES FOR INCLUSION IN THE 1999 IMPORT RESIDUE PLAN

The list of high priority compounds chosen for the Import Residue Plan by the Residue Prioritization Committee (RPC) was the same as that for the domestic plan. Once the high-priority compounds and compound classes had been identified, it was necessary for the RPC to apply non public health considerations to determine the compounds for which FSIS would actually sample. The principal non public health consideration 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 currently be included in the NRP. The compounds that can be identified by this multiresidue method are listed in Section 6, Phase II, p. 6-4.

PHASE III- IDENTIFYING THE COMPOUND/PRODUCT CLASS PAIRS

As with the domestic program, the Surveillance Advisory Team (SAT) decided to sample for CHC's and COP's in all product classes. FSIS also continues sampling for these compounds in all production classes as a means of monitoring for the occurrence of accidental contamination incidents.

PHASE IV - ALLOCATION OF SAMPLING RESOURCES

ALLOCATION OF SAMPLING RESOURCES AMONG DIFFERENT PRODUCTION CLASSES

The samples for residue analysis for imported egg products are selected in a different manner than the other product classes.

EGG PRODUCTS

¹Phenylbutazone is also detected by this method.

As stated in Section 2, for egg products, the first ten shipments from individual foreign establishments are subjected to 100 % reinspection, to establish a history of compliance with the U.S. requirements for each egg product category. This rate is reduced to a random selection of one reinspection out of eight shipments from each foreign establishment, which will continue as long as the product is in compliance

ANIMAL PRODUCT CLASSES

Table 5.7, *Estimated Annual Amount 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, four different sampling options were chosen: very high regulatory concern (460 analyses/year); high regulatory concern (300 analyses/year); moderate regulatory concern (230 samples/year); low regulatory concern (90 samples/year). This is indicated in Table 7.1, *Number of Pesticide Samples/Product Class*, in the column labeled “Unadjusted Number of Samples.”

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, processed turkey is imported from only three countries. The amount imported is 0.07% relative to total U.S. imports. Therefore, 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 “Minimum 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 was chosen for each compound/product class pair, was subdivided among the different countries. The number of samples for each country was 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, beef/pork processed, turkey fresh and processed, other fowl fresh and processed, lamb/mutton processed, and veal processed was less than 1%.² The numbers of samples per country per product class for each compound/compound class are listed in Tables 7.2 - 7.10.

Allocation of Samples in Product Classes Whose Total Volume Imported Is Greater Than 1%

For major product classes (including fresh goat), the number of samples was allocated to each country depending upon the relative amount of product imported from that country. Table 5.8, *Estimated Annual Volume of Import Product/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 5.9, *Relative Annual Amount of Import Product /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 7.11 to 7.18.

After the determination of the number of samples 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 7.18. The results of this adjustment are in the column labeled “Initial Adj#.” After this adjustment 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. 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:

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

where,

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

N₁ = Total Number of Samples after Adjustment #1

²The number of samples of fresh goat for CHC/COP analysis was raised from sixteen to thirty because of the potential of greater than normal exposure to environmental contaminants. The number of samples was allocated among the different countries in the same way as the product classes whose total volume imported is greater than 1%. The number of samples of fresh goat for CHC/COP from each country is listed in Table 7.18

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

The final numbers of product sampled are indicated in Tables 7.11 - 7.18, in the column labeled "Final Number of Samples."

Table 7.1
Number of Pesticide Samples/Product Class
1999 Import Residue Plan

| No. Countries | Product | Pesticide | Pesticide Score | Percent Product | Relative Sampling Priority | Unadjusted Number Of Samples | Minimum Number Of Samples | Final Number Of Samples |
|---------------|------------------------|-------------|-----------------|-----------------|----------------------------|------------------------------|---------------------------|-------------------------|
| 12 | Beef, Fresh | CHC's/COP's | 16.0 | 63.37 | 1013.95 | 460 | 460 | 459 |
| 8 | Pork, Fresh | CHC's/COP's | 16.0 | 17.13 | 274.11 | 460 | 460 | 461 |
| 17 | Pork, Processed | CHC's/COP's | 16.0 | 6.22 | 99.57 | 300 | 300 | 301 |
| 13 | Beef, Processed | CHC's/COP's | 16.0 | 5.74 | 91.78 | 300 | 300 | 300 |
| 5 | Mutton/Lamb, Fresh | CHC's/COP's | 16.0 | 3.41 | 54.52 | 300 | 300 | 300 |
| 6 | Veal, Fresh | CHC's/COP's | 16.0 | 1.48 | 23.73 | 230 | 230 | 229 |
| 4 | Chicken, Processed | CHC's/COP's | 16.0 | 1.31 | 20.96 | 230 | 230 | 230 |
| 2 | Goat, Fresh | CHC's/COP's | 16.0 | 0.30 | 4.77 | 90 | 30* | 30 |
| 1 | Chicken, Fresh | CHC's/COP's | 16.0 | 0.25 | 4.00 | 90 | 8 | 8 |
| 11 | Beef/Pork, Processed | CHC's/COP's | 16.0 | 0.24 | 3.81 | 90 | 88 | 88 |
| 3 | Turkey, Processed | CHC's/COP's | 16.0 | 0.07 | 1.16 | 90 | 24 | 24 |
| 1 | Other Fowl, Fresh | CHC's/COP's | 16.0 | 0.07 | 1.15 | 90 | 8 | 8 |
| 1 | Turkey, Fresh | CHC's/COP's | 16.0 | 0.07 | 1.10 | 90 | 8 | 8 |
| 3 | Other Fowl, Processed | CHC's/COP's | 16.0 | 0.04 | 0.67 | 90 | 24 | 24 |
| 5 | Mutton/Lamb, Processed | CHC's/COP's | 16.0 | 0.02 | 0.36 | 90 | 40 | 40 |
| 1 | Veal, Processed | CHC's/COP's | 16.0 | 0.00 | 0.04 | 90 | 8 | 8 |
| | Total | | | 99.72 | | 3180 | 2518 | 2518 |

*Because goats present a greater than normal potential for exposure to environmental contaminants, the minimum number of samples for this product class has been increased from 16 to 30.

Table 7.2
Number of Samples/Product Class-Chicken, Fresh
1999 Import Residue Plan

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

Table 7.3
Number of Samples/Product Class-Turkey, Fresh
1999 Import Residue Plan

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

Table 7.4
Number of Samples/Product Class-Turkey, Processed
1999 Import Residue Plan

| TURKEY, PROCESSED/CHC's/COP's | PERCENT PRODUCT | FINAL NUMBER OF SAMPLES |
|--------------------------------------|------------------------|--------------------------------|
| Canada | 41.68 | 8 |
| Hong Kong | 39.93 | 8 |
| Israel | 18.40 | 8 |
| Total | 100.00 | 24 |

Table 7.5
Number of Samples/Product Class-Other Fowl, Fresh
1999 Import Residue Plan

| OTHER FOWL, FRESH/CHC's/COP's | PERCENT PRODUCT | FINAL NUMBER OF SAMPLES |
|--------------------------------------|------------------------|--------------------------------|
| Canada | 100.00 | 8 |
| Total | 100.00 | 8 |

Table 7.6
Number of Samples/Product Class-Other Fowl, Processed
1999 Import Residue Plan

| OTHER, FOWL, PROCESSED/CHC's/COP's | PERCENT PRODUCT | FINAL NUMBER OF SAMPLES |
|---|------------------------|--------------------------------|
| Canada | 96.64 | 8 |
| France | 3.16 | 8 |
| Israel | 0.20 | 8 |
| Total | 100.00 | 24 |

Table 7.7
Number of Samples/Product Class-Veal, Processed
1999 Import Residue Plan

| VEAL, PROCESSED/CHC's/COP's | PERCENT PRODUCT | FINAL NUMBER OF SAMPLES |
|------------------------------------|------------------------|--------------------------------|
| Canada | 100.00 | 8 |
| Total | 100.00 | 8 |

Table 7.8
Number of Samples/Product Class-Beef/Pork, Processed
1999 Import Residue Plan

| BEEF/PORK, PROCESSED/CHC's/COP's | PERCENT PRODUCT | FINAL NUMBER OF SAMPLES |
|---|------------------------|--------------------------------|
| Australia | 0.22 | 8 |
| Austria | 0.29 | 8 |
| Canada | 41.67 | 8 |
| Croatia | 0.03 | 8 |
| Denmark | 38.87 | 8 |
| Dominican Republic | 9.34 | 8 |
| Germany | 0.04 | 8 |
| Netherlands | 9.17 | 8 |
| Poland | 0.13 | 8 |
| Spain | 0.08 | 8 |
| Sweden | 0.17 | 8 |
| Total | 100.00 | 88 |

Table 7.9
Number of Samples/Product Class-Lamb/Mutton, Processed
1999 Import Residue Plan

| LAMB/MUTTON, PROCESSED/CHC's/COP's | PERCENT PRODUCT | FINAL NUMBER OF SAMPLES |
|---|------------------------|--------------------------------|
| Australia | 16.12 | 8 |
| Brazil | 0.87 | 8 |
| Canada | 48.79 | 8 |
| New Zealand | 20.07 | 8 |
| Uruguay | 14.14 | 8 |
| Total | 99.99 | 40 |

Table 7.10
Number of Samples /Product Class-Egg, Processed
1999 Import Residue Plan

| EGG, FRESH/CHC's/COP's | PERCENT PRODUCT | FINAL NUMBER OF SAMPLES |
|-------------------------------|------------------------|--------------------------------|
| Canada | 100.00 | 8 |
| Total | 100.00 | 8 |

Table 7.11
Number of Samples/Product Class-Beef, Fresh
1999 Import Residue 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.# | ADJUSTMENT # 2 | FINAL ADJ.# |
|---|--|---|---|----------------------|---------------------------|--------------------|
| Argentina | 1.10 | 5 | 8 | 8 | | 8 |
| Australia | 29.25 | 135 | | 135 | 121 | 121 |
| Canada | 39.75 | 183 | | 183 | 164 | 164 |
| Costa Rica | 1.27 | 6 | 8 | 8 | | 8 |
| Denmark | 0.00 | 0 | 8 | 8 | | 8 |
| Honduras | 0.46 | 2 | 8 | 8 | | 8 |
| Japan | 0.00 | 0 | 8 | 8 | | 8 |
| Mexico | 0.30 | 1 | 8 | 8 | | 8 |
| Netherlands | 0.00 | 0 | 8 | 8 | | 8 |
| New Zealand | 24.71 | 114 | | 114 | 102 | 102 |
| Nicaragua | 1.40 | 6 | 8 | 8 | | 8 |
| Uruguay | 1.77 | 8 | 8 | 8 | | 8 |
| Total | 100.00 | 460 | | | | 459 |

Table 7.12
Number of Samples /Product Class-Beef, Processed
1999 Import Residue Plan

| BEEF, PROCESSED CHC's/COP's | PERCENT PRODUCT (P_{C/C}) | UNADJUSTED NUMBER OF SAMPLES (U) = 300*((P_{C/C})/100) | ADJUSTMENT #1 (8 MINIMUM/ COUNTRY) | INITIAL ADJ.# | ADJUSTMENT # 2 | FINAL ADJ.# |
|--|--|---|---|----------------------|---------------------------|--------------------|
| Argentina | 36.96 | 111 | 111 | 111 | 88 | 88 |
| Australia | 0.97 | 3 | 8 | 8 | | 8 |
| Brazil | 35.63 | 107 | | 107 | 84 | 84 |
| Canada | 19.58 | 59 | | 59 | 47 | 47 |
| Costa Rica | 0.09 | 0 | 8 | 8 | | 8 |
| Croatia | 0.23 | 1 | 8 | 8 | | 8 |
| Italy | 0.08 | 0 | 8 | 8 | | 8 |
| Mexico | 1.58 | 5 | 8 | 8 | | 8 |
| New Zealand | 0.81 | 2 | 8 | 8 | | 8 |
| Poland | 0.01 | 0 | 8 | 8 | | 8 |
| Sweden | 0.01 | 0 | 8 | 8 | | 8 |
| Switzerland | 0.02 | 0 | 8 | 8 | | 8 |
| Uruguay | 4.04 | 12 | | 12 | 9 | 9 |
| Total | 100.00 | 300 | | | | 300 |

Table 7.13
Number of Samples/Product Class-Pork, Processed
1999 Import Residue Plan

| PORK, PROCESSED/ CHC's/COP's | PERCENT PRODUCT (P_{C/C}) | UNADJUSTED NUMBER OF SAMPLES (U) = 230*((P_{C/C})/100) | ADJUSTMENT #1 (8 MINIMUM/ COUNTRY) | INITIAL ADJ.# | ADJUSTMENT # 2 | FINAL ADJ.# |
|---|--|---|---|----------------------|---------------------------|--------------------|
| Australia | 0.02 | 0 | 8 | 8 | | 8 |
| Austria | 0.03 | 0 | 8 | 8 | 8 | 8 |
| Belgium | 7.20 | 22 | | 22 | 16 | 16 |
| Canada | 49.80 | 149 | | 150 | 109 | 109 |
| Croatia | 1.02 | 3 | 8 | 8 | | 8 |
| Denmark | 23.23 | 70 | | 70 | 51 | 51 |
| France | 0.25 | 1 | 8 | 8 | | 8 |
| Germany | 0.13 | 0 | 8 | 8 | | 8 |
| Hungary | 3.10 | 9 | 9 | 9 | | 8 |
| Ireland | 0.50 | 2 | 8 | 8 | | 8 |
| Italy | 1.55 | 5 | 8 | 8 | | 8 |
| Mexico | 0.12 | 0 | 8 | 8 | | 8 |
| Netherlands | 6.29 | 19 | | 19 | 14 | 14 |
| Poland | 6.65 | 20 | | 20 | 15 | 15 |
| Slovenia | 0.00003 | 0 | 8 | 8 | | 8 |
| Spain | 0.09 | 0 | 8 | 8 | | 8 |
| Switzerland | 0.01 | 0 | 8 | 8 | | 8 |
| Total | 99.99 | 300 | | | | 301 |

Table 7.14
Number of Samples /Product Class-Pork, Fresh
1999 Import Residue Plan

| PORK, FRESH/ CHC's/COP's | PERCENT PRODUCT (P_{C/C}) | UNADJUSTED NUMBER OF SAMPLES (U) = 230*((P_{C/C})/100) | ADJUSTMENT #1 (8 MINIMUM/ COUNTRY) | INITIAL ADJ.# | ADJUSTMENT # 2 | FINAL ADJ.# |
|---|--|---|---|----------------------|---------------------------|--------------------|
| Australia | 0.02 | 0 | 8 | 8 | | 8 |
| Canada | 84.13 | 387 | | 387 | 358 | 358 |
| Denmark | 12.76 | 59 | | 59 | 55 | 55 |
| Finland | 0.19 | 1 | 8 | 8 | | 8 |
| Ireland | 0.84 | 4 | 8 | 8 | | 8 |
| Mexico | 0.01 | 0 | 8 | 8 | | 8 |
| Sweden | 0.25 | 1 | 8 | 8 | | 8 |
| UK | 1.80 | 8 | 8 | 8 | | 8 |
| Total | 100.00 | 460 | | | | 461 |

Table 7.15
Number of Samples/Product Class-Chicken, Processed
1999 Import Residue Plan

| CHICKEN, PROCESSED/ CHC's/COP's | PERCENT PRODUCT (P_{C/C}) | UNADJUSTED NUMBER OF SAMPLES (U)= 230*(% PRODUCT/100) | ADJUSTMENT #1 (8 MINIMUM/ COUNTRY) | INITIAL ADJ.# | ADJUSTMENT # 2 | FINAL ADJ.# |
|--|--|---|---|----------------------|---------------------------|--------------------|
| Canada | 98.71 | 227 | | 227 | 206 | 206 |
| France | 0.00 | 0 | 8 | 8 | | 8 |
| Hong Kong | 0.31 | 1 | 8 | 8 | | 8 |
| Israel | 0.99 | 2 | 8 | 8 | | 8 |
| | 100.00 | 230 | | | | 230 |

Table 7.16
Number of Samples /Product Class-Veal, Fresh
1999 Import Residue Plan

| VEAL, FRESH/ CHC's/COP's | PERCENT PRODUCT (P_{C/C}) | UNADJUSTED NUMBER OF SAMPLES (U)= 230*(% PRODUCT/100) | ADJUSTMENT #1 (8 MINIMUM/ COUNTRY) | INITIAL ADJ.# | ADJUSTMENT # 2 = (P_{C/C})-[(U- N)/P_{C/T}] | FINAL ADJ.# |
|---|--|--|---|----------------------|--|--------------------|
| Australia | 6.77 | 16 | 16 | 16 | 14 | 14 |
| Canada | 38.29 | 88 | 88 | 88 | 79 | 79 |
| Costa Rica | 0.004 | 0 | 8 | 8 | 8 | 8 |
| Iceland | 0.005 | 0 | 8 | 8 | 8 | 8 |
| Netherlands | 0.59 | 1 | 8 | 8 | 8 | 8 |
| New Zealand | 54.33 | 125 | 125 | 125 | 112 | 112 |
| Total | 99.99 | 230 | | | | 229 |

Table 7.17
Number of Samples /Product Class-Lamb/Mutton, Fresh
1999 Import Residue Plan

| LAMB/ MUTTON, FRESH/ CHC's/COP's | PERCENT PRODUCT (P_{C/C}) | UNADJUSTED NUMBER OF SAMPLES (U)= 300*(% PRODUCT/100) | ADJUSTMENT #1 (8 MINIMUM/ COUNTRY) | INITIAL ADJ.# | ADJUSTMENT # 2 = (P_{C/C})-[(U- N)/P_{C/T}] | FINAL ADJ.# |
|---|--|--|---|----------------------|--|--------------------|
| Australia | 62.39 | 187 | 187 | 187 | 174 | 174 |
| Canada | 0.62 | 2 | 8 | 8 | 8 | 8 |
| Iceland | 0.05 | 0 | 8 | 8 | 8 | 8 |
| New Zealand | 36.45 | 109 | 109 | 109 | 102 | 102 |
| Uruguay | 0.49 | 2 | 8 | 8 | 8 | 8 |
| Total | 100.00 | 300 | | | | 300 |

Table 7.18
Number of Samples /Product Class-Goat, Fresh
1999 Import Residue Plan

| GOAT, FRESH/ CHC's/COP's | PERCENT PRODUCT (P_{C/C}) | UNADJUSTED NUMBER OF SAMPLES (U)= 30*(% PRODUCT/100) | ADJUSTMENT #1 (8 MINIMUM/ COUNTRY) | INITIAL ADJ.# | ADJUSTMENT # 2 = (P_{C/C})-[(U- N)/P_{C/T}] | FINAL ADJ.# |
|---|--|---|---|----------------------|--|--------------------|
| Australia | 96.34 | 29 | | 29 | 22 | 22 |
| New Zealand | 3.66 | 1 | 8 | 8 | | 8 |
| Total | 100.00 | 30 | | | | 30 |