# FOOD SAFETY AND INSPECTION SERVICE

# 2008 FSIS National Residue Program Scheduled Sampling Plans

United States Department of Agriculture
Food Safety and Inspection Service
Office of Public Health Science

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## Preface

The Food Safety and Inspection Service (FSIS) National Residue Program (NRP), *Blue Book* is a summary of the scheduled domestic and import sampling plans and includes a summary of adjustments to the 2007 NRP. Detailed discussions describing the principles and methods used to plan and design the NRP sampling plans are provided. Development of the sampling plans is divided into individual sections for domestic and import products for veterinary drugs, pesticides, and unavoidable contaminants. For convenience, tables that report summaries of FSIS sampling plans are provided before the detailed discussions. Three appendices (I-III) are also provided: tissues required for laboratory analysis; FSIS laboratory analytical methods; and a statistical table that describes the probability of detecting a violation given a specified sample size.

## Contacts and Comments

Questions about the FSIS NRP should be directed to the USDA-FSIS Risk Assessment and Residue Division (RARD), Residue Branch, 333 Aerospace Center, 1400 Independence Avenue, SW, Washington, DC 20250-3700, telephone (202) 690-6409, fax (202) 690-6565.

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# INTRODUCTION

The Food Safety and Inspection Service (FSIS), the U.S. Department of Agriculture's public health regulatory agency, works with the Environmental Protection Agency (EPA) and the Department of Health and Human Services' Food and Drug Administration (FDA), to control veterinary drug, pesticide, and environmental contaminant residues in meat, poultry, and egg products. Residue control is a cooperative effort. EPA* and FDA** have statutory authority for establishing residue tolerances or action levels, and FSIS, through the National Residue Program (NRP) tests animal tissues and egg products to verify that tolerances or action levels are not violated.

FDA, under the Federal Food, Drug, and Cosmetic Act, establishes tolerances or action levels for veterinary drugs, food additives, and unavoidable environmental contaminants. EPA, through the Federal Insecticide, Fungicide and Rodenticide Act (as modified by the Food Quality Protection Act), sets tolerance levels for registered pesticides. For cancelled pesticides, action levels (similar to tolerances, but less formal) are established by FDA based on recommendations that EPA published in the Federal Register. FDA and EPA also have the authority to ensure compliance with established tolerances or action levels.

FSIS collects samples of meat, poultry, and egg products at federally inspected establishments and analyzes the samples at FSIS laboratories for chemical residues of veterinary drugs, pesticides, and environmental contaminants. Laboratory findings that exceed established tolerances and action levels are shared with FDA and EPA. This authority is provided under the Federal Meat Inspection Act, the Poultry Products Inspection Act, and the Egg Products Inspection Act. FSIS regulations are published in Title 9 of the Code of Federal Regulations (9 CFR), chapter III.

Since 1967, FSIS has administered the NRP to collect data on chemical residues in domestic and imported meat, poultry, and egg products. The NRP is designed to provide: (1) a structured process for identifying and evaluating compounds of concern by production class; (2) the capability to analyze for compounds of concern; (3) appropriate regulatory follow-up of reports of violative tissue residues; and (4) collection, statistical analysis, and reporting of the results of these activities.

With the implementation of the Hazard Analysis and Critical Control Points (HACCP) inspection system, another important component of the NRP is to provide verification of residue control in HACCP systems. As part of the HACCP regulation, slaughter and production establishments are required to identify all chemical residue hazards that are reasonably likely to occur, and develop systems to guard against them. A vigilant chemical residue prevention program is essential to foster the prudent use of veterinary drugs and pesticides in food animals. In 1999, the NRP was modified to make residue evaluation more consistent with risk assessment principles.

* Tolerance levels established by EPA are published in Title 40 CFR.
** Tolerance levels established by FDA are published in Title 21 CFR.

The NRP includes a variety of sampling plans to identify violative levels of chemical residues and to reduce consumers' exposure to chemical contaminants. The range of chemical compounds evaluated for inclusion in the various NRP sampling plans is comprehensive. It includes approved (legal) and unapproved (illegal) veterinary drugs, pesticides that may appear in meat, poultry, and egg products, and other xenobiotic and naturally occurring compounds that may pose a potential human health hazard.

A violation in a production class (food animal or egg product) occurs when a chemical residue is detected and the residue is in excess of an established tolerance or action level. The collection of samples is either scheduled from FSIS Headquarters (scheduled sampling) or initiated by the inspector-in-charge (inspector generated sampling). In scheduled sampling, samples are collected from healthy appearing animals and the findings provide exposure assessment data. The majority of the NRP sampling is conducted under inspector generated sampling. These samples are collected in establishments from suspect animals; their carcasses are subject to retention and condemnation if a violative level of chemical residue is found. FSIS notifies FDA of the violation and assists in obtaining the names of producers and, in the case of food animal products, other parties involved in offering the animals for sale.

FDA and cooperating state agencies will follow-up on known violators with educational visits. If a problem is not corrected, subsequent FDA visits could result in enforcement action, including prosecution. FSIS posts a Repeat Violator List on its web site, listing the names and addresses of parties FDA has determined are responsible for more than one veterinary drug, pesticide, or other chemical residue violation in a 12-month period. The list provides helpful information to processors and producers working to avoid illegal levels of residues, serves as a deterrent for violators, and enables FSIS to make better use of resources.

Data gathered in the NRP are used to verify the safety of meat, poultry, and egg products in the United States. The program helps FSIS, FDA, and EPA enforce Federal laws and regulations, and assists in the design of programs to enhance the nation's residue control programs.

# SAMPLING PLANS OF THE NATIONAL RESIDUE PROGRAM

The National Residue Program (NRP) consists of two sampling plans: domestic and import. These plans are further divided to facilitate the management of chemical residues such as veterinary drugs, pesticides, and environmental contaminants in meat, poultry, and egg products. The domestic sampling plan includes scheduled sampling and inspector generated sampling. The import reinspection sampling plan is separated into normal sampling, increased sampling, and intensified sampling.

## DOMESTIC SAMPLING PLAN

### Scheduled Sampling

Scheduled sampling plans consist of the random sampling of tissue from healthy appearing food animals. Scheduled sampling plans are generated from FSIS Headquarters using the FSIS Form 10,210-3. The development of scheduled sampling plans is a process that proceeds in the following manner: 1) determine which compounds are of food safety concern; 2) use algorithms to rank the selected compounds; 3) pair these compounds with appropriate production classes; and 4) establish sample sizes. The Surveillance Advisory Team (SAT) at its annual meeting determines the compound/production class pairs. The FSIS Residue Branch staff determines the sample sizes by employing statistical analysis techniques to calculate sample numbers. In the 2006 NRP, FSIS started using sample sizes of either 230 or 300 animals for each compound/production class pair. Statistically, applying sampling rates of 230 and 300 per production class population assures a 90 percent and 95 percent probability, respectively, to detect residue violations if the violation rate in the population is equal to or greater than one percent. Residue Branch has adopted a sample size of 300 as a public health standard. This sample size and resulting violation data are used to verify two different types of process control. The first is to verify that industry's process controls meet this public health standard for the compound/production class pairs being tested. The second is to verify that establishments' HACCP plans for residues are in control. Finally, reviews and final adjustments to these sampling plans are made by FSIS Senior Management, FSIS laboratory staff, FDA, and EPA. The following types of assessments are being scheduled:

### Exposure Assessments

*Exposure Assessments* are used:

- By FSIS, FDA, and EPA to determine the prevalence of residues in the Nation's meat, poultry, and egg products;
- By FSIS to condemn carcasses with violative levels of residue;
- By FDA to regulate producers when a sample contains violative levels of residues;
- By industry to retain product until the sample has been tested; and
- By industry to recall product that was not retained while the sample was tested, and found to contain violative levels of residue.

### Exploratory Assessments

*Exploratory Assessments* are designed by Residue Branch:

- To reinvestigate animal populations from ongoing or previous exposure assessments if the violation rate is confirmed at one percent or greater;
- To investigate animal populations when the compounds in question have no established tolerances; and
- To respond to intelligence reports from the field.

## Inspector Generated Sampling

Inspector generated sampling is conducted by in-plant Public Health Veterinarians (PHVs) using FSIS Form 10,000-2. This occurs when the in-plant PHV suspects that an animal may have violative level of chemical residues. Currently, inspector generated sampling targets *individual suspect animals* and *suspect populations of animals*. When an inspector generated sample is collected, the carcass is held pending the results of laboratory testing. If a carcass is found to contain violative levels of residues the carcass is condemned.

### Sampling for individual suspect animals

The in-plant inspector selects a carcass for sampling based on professional judgment and public health criteria outlined in FSIS Directives 10,800.1 and 10,220.3. These criteria include but are not limited to the following: animal disease signs and symptoms; producer history; or results from random scheduled sampling. Some samples are screened in the plant by the Inspector In Charge (IIC) and verified when necessary by a PHV. Other samples are sent directly to the laboratory for analysis. For example, if the IIC suspects the misuse of either an antibiotic or sulfonamide drug in an animal, then he or she can perform the in-plant screening test: Fast Antimicrobial Screening Test (FAST). If the result of a screening test is positive, then the sample is sent to an FSIS laboratory

for confirmation. If the IIC does not have FAST capability, the sample can be sent directly to the FSIS laboratory for testing.

**Sampling for suspect animal populations**

Sampling for suspect animal populations is generally directed by an FSIS regulation, directive (e.g., FSIS Directive 10,800.1), or notice (e.g., as in the case of show animals and bob veal).

# IMPORT REINSPECTION SAMPLING PLAN

Imported meat, poultry, and egg products are sampled at U.S. ports of entry to detect chemical residues. Port-of-Entry Reinspection is a monitoring program conducted to verify the equivalence of inspection systems in exporting countries. The chemical residue sampling program is one of several Types Of Inspection (TOI) conducted during FSIS reinspection of imported products. All imported products are subject to reinspection and one or more TOIs are conducted on every lot of product before it enters the United States. The following are the three levels of chemical residue reinspection:

- Normal sampling is defined as random sampling from a lot;
- Increased sampling is defined as above the normal sampling as the result of an Agency management decision; and
- Intensified sampling is defined as occurring when a previous sample for a TOI failed to meet U.S. requirements.

For both normal and increased sampling, the lot is not required to be retained pending laboratory results; however, the importer may choose to retain the lot pending the laboratory results. The lot is subject to recall if it is not retained and is found to contain violative levels of residue. For intensified sampling, the lot must be retained pending laboratory results. The data obtained from laboratory analyses are entered into the Automated Import Information System (AIIS), an FSIS database designed to generate reinspection assignments, receive and store results, and compile histories for the performance of foreign establishments certified by the inspection system in the exporting country.

**Summary Table I**
**Status of the Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) Prohibited Drugs**
**2008 FSIS NRP – Domestic and Import Sampling**

| *AMDUCA[1] Prohibited Drug* | *Scheduled Samples* | | *Total* |
|---|---|---|---|
| | *Domestic* | *Import* | |
| Avoparcin (glycopeptide) | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| Chloramphenicol | 300, 300, 300, 300, and 300 samples are scheduled for bob veal, heifers, mature chickens, mature turkeys, and steers, respectively. | 96, 90, 16, and 16 samples are scheduled for fresh beef, veal, turkey, and chicken, respectively | 1,718 |
| Clenbuterol[2] | 230, 300, and 90 samples are scheduled for goats, market hogs, and non-formula fed veal, respectively. | 90 and 96 samples are scheduled for fresh veal and pork, respectively. | 806 |
| Diethylstilbestrol[3] | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| Fluoroquinolones[4] | 300, 300, 230, 230, 45, 300, 90, 95, 300, 230, 300, 300, 300, 90, 45, 300, 60, 230, and 300 samples are scheduled for bulls, boars/stags, bob veal, dairy cows, ducks, formula-fed veal, goats, heavy calves, heifers, lambs, market hogs, mature chickens, mature turkeys, non-formula-fed veal, rabbits, roaster pigs, sheep, sows, and steers, respectively. | 300, 8, 230, 90, 16, 16, 16 and 8 samples are scheduled for cattle, horse, pigs, chicken, turkey and varied combination fresh | 4,729 |
| Nitrofurans[5] | 230, 300, and 300 samples are scheduled for dairy cows, market hogs, and sows, respectively. | No samples are scheduled for 2008 NRP | 830 |
| Nitroimidazoles[6] | 300 samples are scheduled for young chickens. | 16 samples are scheduled for fresh chicken | 316 |

**Summary Table I** *(continued)*
**Status of the Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) Prohibited Drugs**
**2008 FSIS NRP – Domestic and Import Sampling**

| *AMDUCA[1] Prohibited Drug* | *Scheduled Samples* | | *Total* |
|---|---|---|---|
| | *Domestic* | *Import* | |
| Phenylbutazone[7] | No samples are scheduled for 2008 NRP | No samples are scheduled for 2008 NRP | 0 |
| Ronidazole | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| Vancomycin | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |

[1] Drugs banned by FDA from extralabel use under the Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) are not evaluated using the ranking formula. Instead, these drugs are automatically assigned a high sampling priority and will be included in the NRP if methodologies and resources are available.
[2] beta-Agonist method is applicable to clenbuterol, salbutamol, cimaterol, zilpaterol and ractopamine.
[3] Xenobiotic hormone.
[4] The fluoroquinolones, enrofloxacin and danofloxacin, are approved for use steers and heifers.
[5] Furazolidone and nitrofurazone; antimicrobials.
[6] Nitroimidazoles in the FSIS multi residue method (MRM) are dimetridazole and ipronidazole; antiprotozoal
[7] Although not in the FSIS Scheduled sampling plan for 2008, testing for phenylbutazone will be conducted for inspector generated samples found FAST positive.

**Summary Table II**
**Rank and Status of Veterinary Drugs**
**2008 FSIS NRP – Domestic and Import Scheduled Sampling**

| *Rank* | *Veterinary Drug* | *Score* | *Scheduled Samples* | | *Total* |
|---|---|---|---|---|---|
| | | | *Domestic* | *Import* | |
| 1 | Antibiotics[1] | 15.1 | 300, 300, 230, 230, 45, 300, 90, 95, 300, 230, 300, 300, 300, 90, 45, 300, 60, 230, and 300 samples are scheduled for bulls, boars/stags, bob veal, dairy cows, ducks, formula-fed veal, goats, heavy calves, heifers, lambs, market hogs, mature chickens, mature turkeys, non-formula-fed veal, rabbits, roaster pigs, sheep, sows, and steers, respectively. | 300, 8, 230, 90, 16, 16, 16 and 8 samples are scheduled for cattle, horse, pigs, chicken, turkey and varied combination fresh, respectively | 4,729 |
| 2 | Avermectins[2] | 14.1 | 300, 300, 230, 135, 300, 230, 90, 45, 300, and 300 samples are scheduled for bulls, boars/stags, goats, heavy calves, lambs, mature sheep, non-formula-fed veal, rabbits, roaster pigs, and sows, respectively. | 300, 60, 90, 90 and 24 samples are scheduled for fresh beef, processed beef, fresh veal, fresh lamb and mutton, and fresh goat, respectively | 2,794 |
| 3 | Carbadox[3] | 12.4 | 300 and 300samples are scheduled for market hogs and roaster pigs, respectively. | No samples are scheduled for the 2008 NRP. | 600 |
| 4 | Florfenicol[4] | 12.1 | 230, 230, and 90 samples are scheduled for beef cows, mature chickens, and non-formula fed veal, respectively. | 88 samples are scheduled for fresh beef. | 638 |
| 5 | Sulfonamides[5] | 12.0 | 230, 230, 300, 230, 135, 300, 230, 300, 90, 230, 300, 230, and 300 samples are scheduled for bob veal, dairy cows, egg products, goats, heavy calves, heifers, market hogs, mature chickens, non-formula-fed veal, roaster pigs, sows, steers, and young chickens, respectively. | 300, 60, 8, 230, 64, 16, 8, 8, 16, and 90 are scheduled for fresh beef, processed beef, fresh horse, fresh pork, processed pork, fresh turkey, processed turkey, fresh varied combo, processed varied combo, and fresh veal, respectively. | 3,905 |
| 6 | Arsenicals[6] | 6.8 | 300, 300 and 300 samples are scheduled for beef cows, egg products, and mature turkeys, respectively[7]. | 96, 16, 16, 8, and 8 samples are scheduled for fresh pork, fresh turkey, fresh chicken, processed chicken, and processed turkey, respectively. | 1,044 |

**Summary Table II** *(continued)*
**Rank and Status of Veterinary Drugs**
**2008 FSIS NRP – Domestic and Import Sampling**

| *Rank* | *Veterinary Drug* | *Score* | *Scheduled Samples* | | *Total* |
|---|---|---|---|---|---|
| | | | *Domestic* | *Import* | |
| 7 | Thyreostats[8] | 5.9 | 300 samples are scheduled for beef cows | 90 samples are scheduled for fresh veal | 390 |
| 8 | Dipyrone[9] | 5.5 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 9 | ß-Agonists | 5.5 | 230, 300, and 90 samples are scheduled for goats, market hogs, and non-formula fed veal, respectively. | 90 and 96 samples are scheduled for fresh veal and pork, respectively. | 806 |
| 10 | Flunixin[10] | 5.3 | 90 and 90 samples are scheduled for bulls and dairy cows, respectively. | 88 samples re scheduled for fresh beef. | 268 |
| 11 | Berenil[11] | 5.2 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 12 | Trenbolone | 5.1 | 90 and 90 samples are scheduled for formula-fed veal and non-formula-fed veal, respectively. | No samples are scheduled for the 2008 NRP. | 180 |
| 13 | Zeranol[12] | 5.1 | 90 and 90 samples are scheduled for formula-fed veal and non-formula-fed veal, respectively. | 90 samples are scheduled for fresh veal. | 270 |
| 14 | Methyl prednisone[13] | 4.7 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |

**Summary Table II** *(continued)*
**Rank and Status of Veterinary Drugs**
**2008 FSIS NRP – Domestic and Import Sampling**

| *Rank* | *Veterinary Drug* | *Score* | *Scheduled Samples* | | *Total* |
|---|---|---|---|---|---|
| | | | *Domestic* | *Import* | |
| 15 | Dexamethasone[14] | 4.7 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 16 | Thiamphenicol[15] | 4.6 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 17 | Eprinomectin | 4.5 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 18 | Clorsulon[16] | 4.5 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 19 | Amprolium[17] | 4.2 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 20 | Halofuginone[18] | 4.0 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 21 | Benzimidazoles[19] | 3.9 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 22 | Lasalocid[20] | 3.8 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |

**Summary Table II** *(continued)*
**Rank and Status of Veterinary Drugs**
**2008 FSIS NRP – Domestic and Import Sampling**

| *Rank* | *Veterinary Drug* | *Score* | *Scheduled Samples* | | *Total* |
|---|---|---|---|---|---|
| | | | *Domestic* | *Import* | |
| 23 | Prednisone[21] | 3.8 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 24 | Etodolac[22] | 3.8 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 25 | Hormones (naturally-occurring)[23] | 3.8 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 26 | Melengesterol acetate[24] (MGA) | 3.0 | 300 samples are scheduled for heifers. | No samples are scheduled for the 2008 NRP. | 0 |
| 27 | Levamisole[25] | 3.0 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 28 | Morantel and pyrantel | 2.5 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 29 | Nicarbazin[26] | 1.9 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |
| 30 | Veterinary tranquilizers[27] | 1.9 | Not in the 2008 NRP | Not in the 2008 NRP | 0 |

[1] Tetracyclines : tetracycline, oxytetracycline, chlortetracycline (HPLC for identification, quantitation by bioassay). Aminoglycosides: spectinomycin, hygromycin, streptomycin, dithydrostreptomycin, amikacin, kanamycin, apramycin, gentamycin, neomycin, tobramycin (LC/MS/MS for confirmation, quantitation of streptomycin, dihydrostreptomycin,

gentamycin, and neomycin by bioassay). Macrolides : lincomycin, pirlymycin, clindamycin, tilmicosin, erythromycin, and tylosin. All macrolides are confirmed by LC/MS/MS. Tilmicosin is also quantitated by HPLC. Erythromycin and tylosin are quantitated by the bioassay. Beta Lactams : amoxicillin, ampicillin, cloxacillin, naficillin, cefazolin, DCCD, dicloxacillin, penicillin G, oxacillin, and desacetyl cephaprin (LC/MS/MS for confirmation, quantitation by bioassay for penicillin G and ampicillin). Fluroquinolones: ciprofloxacin, norfloxacin, danofloxacin, enrofloxacin, sarafloxacin, difloxacin, desethylene diprofloxacin, desmethyl danofloxacin (LC/MS/MS for confirmation).

[2] Doramectin, ivermectin, and moxidectin; Antiparasitic.

[3] Antimicrobial.

[4] Chloramphenicol derivative.

[5] Sulfonamides in the FSIS multi-residue method (MRM): Sulfapyridine, sulfadiazine, sulfathiazole, sulfamerazine, sulfamethazine, sulfachloropyridazine, sulfadoxine, sulfamethoxypyridazine, sulfaquinoxaline, sulfadimethoxine, sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfabromomethazine, sulfasalazine, sulfaethoxypyridazine, sulfaphenazole, and sulfatroxazole; Antimicrobials, some are coccidiostats;
FDA has not set a tolerance for the following sulfonamides: sulfapyridine, sulfadiazine, sulfadoxine, sulfamethoxypyridazine, sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfasalazine, sulfaphenazole, and sulfatroxazole.

[6] Detected as As

[7] Beef cows, market hogs, roaster pigs, boars and stags, sows, mature chickens, and mature turkeys have a 0% violation rate for arsenic for the 3 year period (2001-2003). These production classes were rotated back into the scheduled sampling program for 2006 based on the expert opinion of the Surveillance Advisory Team (SAT). Samples from beef cows and mature turkeys are scheduled for the 2008 NRP.

[8] Includes 2- thiouracil, 6-methyl-2-thiouracil, 6-propyl-2-thiouracil, 2-mercapto-1-methylimidazole, 2- mercaptobenzimidazole

[9] Non-Steroidal Anti-Inflammatory Drug (NSAID).

[10] Non-Steroidal Anti-Inflammatory Drug (NSAID). Although not in the FSIS Scheduled sampling plan for 2008, testing forflunixin will be conducted for inspector generated samples found FAST positive.

[11] Antiprotozoal.

[12] Xenobiotic hormone

[13] Glucocorticoid.

[14] Glucocorticoid.

[15] Chloramphenicol derivative

[16] Anthelmintic, Trematodes

[17] Coccidiostat

[18] Antiprotozoal, coccidiostat

[19] Benzimidazoles in the FSIS multi-residue method (MRM) (thiabendazole and its 5-hydroxythiabendazole metabolite, albendazole 2-animosulfone metabolite, benomyl in the active hydrolyzed form carbendazim, oxfendazole, mebendazole, cambendazole, and fenbendazole); Anthelmintics

[20] Coccidiostat

[21] Glucocorticoid

[22] Non-Steroidal Anti-Inflammatory Drug (NSAID).

[23] 17-Estradiol, testosterone, and progesterone

[24] Xenobiotic hormone

[25] Anthelmintic

[26] Coccidiostat

[27] Azaperone and its metabolite azaperol, xylazine, haloperidol, acetopromazine, propionylpromazine, and chlorpromazine

**Summary Table III**
**Rank and Status for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Rank* | *Compound / Compound Class*[1] | *Score* | *Status in the 2008 NRP* | | *Total* |
|---|---|---|---|---|---|
| | | | *Domestic* | *Import* | |
| 1 | Chlorinated hydrocarbons (CHCs) and chlorinated organophosphates (COPs) – those compounds in the FSIS multi-residue method (MRM)[2] including formerly registered pesticides: DDT and coumaphos, and registered pesticides such as endosulfan | 16.0 | 300, 230, 300, 230, 135, 300, 300, 230, and 230 samples are scheduled for beef cows, boars/stags, dairy cows, goats, heavy calves, heifers, lambs, mature sheep, and sows, respectively | 300, 79, 230, 64, 90, 24, 16, 16, 8, 8, 16, 8, and 16 samples are scheduled fresh beef, processed beef, fresh pork, processed pork, fresh lamb/mutton, fresh goat, fresh turkey, fresh chicken, processed chicken, processed turkey, other fowl fresh, fresh varied combo, processed varied combo, respectively | 3,130 |
| 2 | Chlorinated organophosphates (COPs) and organo phosphates (OPs) - those compounds not in FSIS COP and OP multi-residue method (MRM)[3] | 16.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 3 | Imazalil | 16.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 4 | Triazines – those compounds not in FSIS triazine multi-residue method (MRM)[4] | 15.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 5 | Carbamates – those compounds in the FSIS carbamate triazine multi-residue method (MRM)[5] | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 6 | Synthetic Pyrethroids – those compounds in the FSIS synthetic pyrethrin (pyrethroids) multi-residue method (MRM)[6] | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 7 | 1-(2,4-Dichlorophenyl)-2-(1H-imidazole-1-yl)-1-ethanol[7] | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |

**Summary Table III** *(continued)*
**Rank and Status for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Rank* | *Compound / Compound Class*[1] | *Score* | *Status in the 2008 NRP* | | *Total* |
|---|---|---|---|---|---|
| | | | *Domestic* | *Import* | |
| 8 | 1,1-(2,2-Dichloroethylidene)bis(4-methoxybenzene)[8] | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 9 | 1-Methoxy-4-(1,2,2,2-tetrachloroethyl)benzene)[9] | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 10 | 3-(1-(2,4-Dichlorophenyl)-2-(1H-imidazole-1-yl) ethoxy)-1,2-propane diol[10] | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 11 | Cyhalothrin, lambda | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 12 | Fipronil[11] | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 13 | MB 45950 | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 14 | MB 46513 | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 15 | Methoxychlor olefin | 14.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |

**Summary Table III** *(continued)*
**Rank and Status for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Rank* | *Compound / Compound Class*[1] | *Score* | *Status in the 2008 NRP* | | *Total* |
|---|---|---|---|---|---|
| | | | *Domestic* | *Import* | |
| 16 | Triazines – compounds in FSIS triazine multi-residue method (MRM)[12] | 13.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 17 | Arsanilic acid | 13.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 18 | Etoxazole | 13.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 19 | Indoxacarb | 13.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 20 | Metconazole | 13.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 21 | Prothioconazole | 13.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 22 | Tetraconazole | 13.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |
| 23 | Triflumizole | 13.0 | Not in the 2008 NRP. | Not in the 2008 NRP. | 0 |

**Summary Table III** *(continued)*
**Rank and Status for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

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[1] Only those pesticides that have been designated as representing a broad potential public health risk are included in this summary table. For a complete list of pesticides that were considered for the 2008 NRP, see Table 27.

[2] 2,2',4,4',5,5'-hexabromobiphenyl (HBB), Aldrin, BHC alpha, BHC beta, BHC delta, chlordane-cis (-alpha), chlordane-trans, chlorfenvinphos, Chlorpyrifos, Chlorpyrifos methyl, Coumaphos O-analog (oxon), Coumaphos S, Dieldrin, Endosulfan I, Endosulfan sulfate, endrin, halowaxes, Heptachlor, Heptachlor epoxide A, Heptachlor epoxide B, Hexachlorobenzene, Lindane, Methoxychlor, Mirex, o,p'-DDE (2,4), o,p'-DDT, o,p'-TDE (DDD), p,p'-DDE (4,4), p,p'-DDT, p,p'-TDE (DDD), Phosalone, polybrominated biphenyls (PBBs), polychlorinated biphenyls (aroclors 1254, 1260) (PCBs), tetrachlorvinphos (stirofos), Toxaphene, and trans-nonachlor.

[3] Regulatory method is needed: Azinphos-methyl, azinphos-methyl oxon, chlorpyrifos, coumaphos, coumaphos oxon, diazinon, diazinon oxon, diazinon met G-27550, dichlorvos, dimethoate, dimethoate oxon, dioxathion, ethion, ethion monooxon, fenthion, fenthion oxon, fenthion oxon sulfone, fenthion oxon sulfoxide, fenthion sulfone, fenthion sulfoxide, malathion, malathion oxon, naled, phosmet, phosmet oxon, pirimiphos-methyl, trichlorfon, tetrachlorvinphos, tetrachlorvinphos-4 metabolites, acephate, methamidophos, chlorpyrifos-methyl, fenamiphos, fenamiphos sulfoxide,fenamiphos sulfone, fenamiphos sulfoxide desisopropyl, fenamiphos sulfone desisopropyl, isofenphos, isofenphos oxon, isofenphos desisopropyl, isofenphos oxon desisopropyl, methidathion, ODM, parathion (ethyl), parathion oxon, parathion methyl, parathion methyl oxon, phorate, phorate oxon, phorate oxon sulfone, phorate oxon sulfoxide, phorate sulfone, phorate sulfoxide, profenofos, sulprofos, sulprofos oxon, sulprofos oxon sulfone, sulprofos oxon sulfoxide, sulprofos sulfone, sulprofos sulfoxide, tribufos (DEF).

[4] Regulatory method is needed: Atrazine chloro metabolites, metribuzin, metribuzin DADK, metribuzin DA, metribuzin DK, amitraz, amitraz 2,4-DMA metabs., desdiethyl simazine, desethyl simazine, simazine chloro metabolites.

[5] Regulatory method is needed: Aldicarb, aldicarb sulfoxide, aldicarb sulfone, carbaryl, carbofuran, carbofuran, 3-hydroxy.

[6] Cypermethrin, *cis*-permethrin, *trans*-permethrin, fenvalerate, *zeta*-cypermethrin.

[7] Regulatory method is needed.

[8] Regulatory method is needed.

[9] Regulatory method is needed.

[10] Regulatory method is needed.

[11] Regulatory method is needed.

[12] Atrazine, simazine, propazine, terbuthylazine

**Summary Table IV**
**Rank and Status of Unavoidable Contaminants**
**2008 FSIS NRP, Domestic and Import Scheduled Sampling**

| *Unavoidable Contaminant*[1] | *Scheduled Samples* | | *Total* |
|---|---|---|---|
| | *Domestic* | *Import* | |
| Lead and cadmium | 300 samples are scheduled for beef cows. | No samples are scheduled for the 2008 NRP. | 300 |

[1] Environmental contaminants are not assigned a ranking score in the NRP.

# Overview of the National Residue Program Design

The USDA's Food Safety and Inspection Service (FSIS) obtains information on the occurrence of residues in meat, poultry, and egg products from two principal sources: the domestic and import scheduled sampling plans. The design of the domestic and import sampling plans begins with the generation of a list of residues that may occur in meat, poultry, and egg products and that are of concern to human health. To develop this list, FSIS coordinates a meeting of the Surveillance Advisory Team (SAT). The SAT is an interagency committee comprised of members from the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the Centers for Disease Control and Prevention (CDC), the Agricultural Marketing Service (AMS), the Agricultural Research Service (ARS), and FSIS. The SAT identifies the priority compounds of public health concern, and provides FSIS with detailed information about each compound. FSIS then combines this information with its historical data on compound violation rates to develop the domestic scheduled sampling and the import reinspection plan. These sampling plans guide the allocation of FSIS laboratory and inspection resources.

Factors taken into consideration in developing the domestic and import scheduled sampling plans are:

- The overall estimated relative public health risk associated with each compound or compound class in meat, poultry, and egg products;
- The production classes in which each compound or compound class is likely to be of concern;
- The availability of analytical methods, which determines which compounds or compound classes can be analyzed; and
- The analytical capacity of the FSIS laboratories, which determines how many analyses of each compound or compound class can be performed.

The process used to design the import plan is similar to that of the domestic plans, with two important exceptions. First, since many countries ship processed products only, it is often not possible to test raw product at the U.S. port-of-entry. Further, even when raw product is shipped, it often consists of muscle tissue only. By contrast, domestic residue testing often is targeted towards organ tissues (typically kidney and liver). This is because many residues concentrate in organs, which makes them easier to detect. Because of this concentration effect, FDA often bases its tolerances for veterinary drugs upon the levels found in kidney or liver. Second, while countries are required to identify the animal species used in each product, they are not required to identify the production class. Testing on imported meat and poultry is subdivided by animal species (e.g., chicken vs. pig), and cannot be further subdivided within a species (e.g., steer vs. heifer vs. dairy cow. vs. formula-fed veal). Egg products, however, can be distinguished as a separate category.

Because different countries have different approved compounds and different use practices, the compounds analyzed in the import plan may not necessarily be the same as those in the domestic plan.

# Design of the Domestic Scheduled Sampling Plan for Veterinary Drugs

## I. Selecting, Scoring, and Ranking Candidate Veterinary Drugs

The candidate veterinary drugs of concern selected by members of the Surveillance Advisory Team (SAT) are presented below and in Table 1. Some veterinary drugs are grouped together because they are (or are likely to be) detected by the same analytical methodology. Some veterinary drugs listed below are prohibited from extra label use in food animals under the Animal Medicinal Drug Use Clarification Act (AMDUCA) and are high regulatory priorities.

- *Antibiotics: (7-plate bioassay[1])*
  Tetracyclines: tetracycline, oxytetracycline, chlortetracycline (HPLC for identification, quantitation by bioassay). Aminoglycosides: spectinomycin, hygromycin, streptomycin, dithydrostreptomycin, amikacin, kanamycin, apramycin, gentamycin, neomycin, tobramycin (LC/MS/MS for confirmation, quantitation of streptomycin, dihydrostreptomycin, gentamycin, and neomycin by bioassay). Macrolides: Lincomycin, pirlymycin, clindamycin, tilmicosin, erythromycin, and tylosin are confirmed by LC/MS/MS. Tilmicosin is also quantitated by HPLC. Erythromycin and tylosin are quantitated by the bioassay. Beta-Lactams: amoxicillin, ampicillin, cloxacillin, naficillin, cefazolin, DCCD, dicloxacillin, penicillin G, oxacillin, and desacetyl cephaprin (LC/MS/MS for confirmation, quantitation by bioassay for penicillin G and ampicillin). Fluoroquinolones: ciprofloxacin, norfloxacin, danofloxacin, enrofloxacin, sarafloxacin, difloxacin, desethylene diprofloxacin, desmethyl danofloxacin (LC/MS/MS for confirmation).
- Avoparcin (classification: glycopeptide; AMDUCA prohibited)
- Chloramphenicol (classification: antibiotic; AMDUCA prohibited)
- Florfenicol (classification: antibiotic; chloramphenicol derivative)
- Fluoroquinolones (classification: antibiotic; AMDUCA prohibited; compounds: ciprofloxacin, desethyleneciprofloxacin, danofloxacin, difloxacin, enrofloxacin, marbofloxacin, orbifloxacin, and sarafloxacin)
- Thiamphenicol (classification: antibiotic; chloramphenicol derivative)
- Vancomycin (classification: glycopeptide; AMDUCA prohibited)

*Other Veterinary Drugs:*

- Amprolium (classification: coccidiostat)
- Arsenicals (detected as elemental arsenic)
- Avermectins (classification: anthelmintics; compounds in FSIS MRM: doramectin, ivermectin, and moxidectin)
- Benzimidazoles (classification: anthelmintics; compounds in FSIS MRM: thiabendazole and its 5-hydroxythiabendazole metabolite, albendazole 2-animosulfone metabolite, benomyl in the active hydrolyzed form carbendazim, oxfendazole, mebendazole, cambendazole, and fenbendazole)
- Carbadox (classification: antimicrobial)
- ß-Agonists (ractopamine, clenbuterol, cimaterol, zilpaterol and salbutamol; growth promotants)
- Clorsulon (classification: anthelmintic)
- Dexamethasone (classification: glucocorticoid)
- Diethylstilbestrol (DES; AMDUCA prohibited synthetic hormone)
- Dipyrone (classification: NSAID[2])
- Eprinomectin (classification: antiparasitic; avermectin)
- Etodolac (classification: NSAID)

[1] FSIS quantitates most antibiotics using a 7-plate bioassay that measures microbial inhibition. The pattern of inhibition (i.e., the combination of plates showing inhibition) is used to identify the antibiotic. There are some antibiotics, however, that share the same pattern of inhibition. For these antibiotics, it is necessary to undertake follow-up testing (High Performance Liquid Chromatography or mass spectrometry) to establish their identities, where such follow-up methodologies are available.

[2] NSAID = *non*-steroidal anti-inflammatory drug

- Flunixin (classification: NSAID)
- Halofuginone (classification: antiprotozoal, coccidiostat)
- Hormones, endogenous production (17-β estradiol, progesterone, testosterone)
- Hormones, xenobiotics (Melengestrol acetate, trenbolone, zeranol)
- Lasalocid (classification: coccidiostat)
- Levamisole (classification: anthelmintic)
- Methyl prednisone (classification: glucocorticoid)
- Morantel and pyrantel (classification: anthelmintic)
- Nicarbazin (classification: coccidiostat)
- Nitrofurans (compounds: furazolidone, nitrofurazone; AMDUCA prohibited antimicrobials)
- Nitromidazoles (classification: antiprotozoals; compounds in FSIS MRM: dimetridazole, ipronidazole)
- Phenylbutazone (classification: NSAID)
- Prednisone (classification: glucocorticoid)
- Ronidazole (classification: antimicrobial; compound: nitroimidazole)
- Sulfonamides (classification: antimicrobials, and some are coccidiostats; compounds in FSIS MRM: sulfapyridine, sulfadiazine, sulfathiazole, sulfamerazine, sulfamethazine, sulfachlorpyridazine, sulfadoxine, sulfamethoxypyridazine, sulfaquinoxaline, sulfadimethoxine, sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfabromomethazine, sulfasalazine, sulfaethoxypyridazine, sulfaphenazole, and sulfatroxazole)
- Sulfanitran (classification: antibacterial, coccidiostat)[3]
- Thyreostats (compounds: 2-thiouracil, 6-methyl-2-thiouracil, 6-proply-2-thiouracil, 2-mercapto-1-methylimidazole (tapazole), 6-phenyl-2-thiouracil, and 2-mercaptobenzimidazole)
- Veterinary tranquilizers (compounds in FSIS MRM: azaperone and its metabolite azaperol, xylazine, haloperidol, acetopromazine, propionylpromazine, and chlorpromazine)

***Drugs Banned from Extralabel use under AMDUCA***

FDA has advised FSIS that drugs banned from extralabel use under AMDUCA, called AMDUCA prohibited, are of high public health concern. Therefore, these AMDUCA prohibited drugs are not evaluated for inclusion using the ranking formula presented below. Instead, all AMDUCA drugs are automatically assigned a high sampling priority, and are included in the NRP if methodologies and resources are available. AMDUCA prohibited drugs are listed in Summary Table I, *Status of AMDUCA Prohibited Drugs (page 2).*

[3] FSIS, in consultation with FDA, rotated sulfanitran out of the NRP beginning in the 2005 NRP.

***Compound Scoring***

Using a simple 4-point scale (4 = high; 3 = moderate; 2 = low; 1 = none), the SAT scored each of the above veterinary drugs or drug classes in each of the following categories:

- FSIS Historical Testing Information on Violations
- Regulatory Concern
- Lack of FSIS Testing Information on Violations
- Withdrawal Time
- Impact on New and Existing Human Disease
- Relative Number of Animals Treated
- Acute or Chronic Toxicity Concerns

Definitions of each of these categories, and the criteria used for scoring, appear at the end of this section in the *Scoring Key for Veterinary Drugs, 2008 Domestic Residue Program.*

The results of the compound scoring process are presented in Table 1, *Scoring Table for Veterinary Drugs*.

***Compound Ranking***

1. Background

As stated above, FSIS employs risk assessment techniques and principles to obtain a ranking of the relative public health concern represented by each of the above candidate compounds or compound classes.

If FSIS were in possession of detailed historical data on the distribution of levels for each of the candidate compounds or compound classes in meat, poultry, and egg products, then the information could be combined with consumption data to estimate exposure. By combining these exposure data with toxicity information, risk is estimated for each compound or compound class from the following:

Equation 1

Risk = Exposure x Toxicity
= Consumption x Residue Levels x Toxicity
= Consumption x Risk per Unit of Consumption

FSIS does not currently attempt to associate different degrees of risk with different amounts or percentages by which the tolerance or action level is exceeded. FSIS instead determined that the best available method for the measurement of relative toxicity is the tolerance or action level of a compound or compound class. *Specifically, the frequency of violation of a tolerance or action level is used as an indicator of the risk per unit of consumption of a product.*

The category, (see *FSIS Historical Testing Information on Violations,* Table 1) is based on the percent of tested carcasses found to have residues in excess of the tolerance or action level. This percentage is determined from data obtained from the FSIS domestic scheduled sampling plan. Drug compounds were scored by two methods: (a) the maximum violation rate seen in any production class (averaged over 1997-2006); and (b) the maximum, for any production class, of the violation rate (again, averaged over 1997-2006), but weighted by the size of the production class. The final score for each drug was assigned based

on the higher of these two scores.[4] Therefore, it can be seen from *Equation 1* that the violation rate scores assigned in Table 1 represent a rough overall estimate of *relative* risk per unit of consumption.[5] However, for the many candidate compounds or compound classes of concern that have never been included in the FSIS NRP, data on violation rates are not available. It was therefore necessary to generate an estimate of the overall violation rate for each these untested compounds and compound classes.

2. Estimating the Violation Rate

"Regulatory Concern," "Withdrawal Time," and "Relative Number of Animals Treated" were chosen as scoring categories to estimate the violation rate because they are expected to be positively correlated with the violation rate. Therefore, categories are expected to serve as predictors of violations in those compounds or compound classes for which no reliable historical testing information was available. As indicated in the *Scoring Key for Veterinary Drugs* (see page 27), the category, "Regulatory Concern," was designed to predict the "likelihood of occurrence of violations, based on regulatory intelligence information about possible misuse." The category, "Withdrawal Time," is expected to correlate with "FSIS Historical Testing Information on Violations" because a longer withdrawal time is less likely to be properly observed. When a withdrawal time for a drug is not observed prior to slaughter, the carcass may contain violative levels of residues, because the time necessary for sufficient metabolism and elimination of the drug would not have passed. The category, "Relative Number of Animals Treated," is expected to correlate with "FSIS Historical Testing Information on Violations" because heavy compound use increases the likelihood of violations.

Violation rate data are available for selected compounds and compound classes. Using the scores assigned to these compounds and compound classes, it was possible to evaluate how well the above criteria correlate. In an effort to impute values for the missing data, a linear regression model was applied. The dependent variable in this model is the category, "FSIS Historical Testing Information on Violations," while the only significant independent variable is the product of the scores for "Relative Number of Animals Tested" and "Withdrawal Time."

Nine compounds or compound classes for which current, reliable data were available to score the category "FSIS Historical Testing Information on Violations," and 21 compounds or compound classes for which there were no data are listed in Table 1. A least squares linear regression model, using the value of the independent variable from the nine (9) scored compounds or compound classes, was then used to predict scores in the category "FSIS Historical Testing Information on Violations" for the 21 compounds for which this information is not available. The following equation was derived:

[4] For a more detailed explanation, refer the *Scoring Key for Veterinary Drugs*.

[5] While some consideration was given to the size of the production class in scoring "FSIS Historical Testing Information on Violations," no systematic weighting was applied to the scores in this category based upon consumption. Hence, the scores assigned to this category represent relative risk *per unit of consumption*, rather than relative risk. To obtain values for relative risk, the scores in this category must be multiplied by the consumption data for each individual production class. This calculation is implemented subsequently, in Phase IV, using Equation 6; the results are presented in Table 5.

Equation 2

$Vp = 1.157 + 0.18 (W*N)$

Vp = Predicted score for "FSIS Historical Testing Information on Violations"
W = score for "Withdrawal Time
N = Score for "Relative Number of Animals Treated"
W*N = Product of W and N.

This model is the result of using a stepwise regression with several possible independent variables. The independent variables available for the stepwise regression are:

- A score for Regulatory Concern (R)
- A score for Withdrawal Time (W)
- A score for Relative Number of Animals Treated (N)
- $R^2$
- $W^2$
- $N^2$
- The product of R and W
- The product of R and N
- The product of W and N.

No terms involving "Regulatory Concern" were included in the final equation since none were found to be significant factors in the regression model.

In statistics, regression analysis examines the relation of a dependent variable (response variable) to specified independent variables. The model represented by Equation 2 has an overall model p-value of 0.09 and a regression value ($R^2$) of 0.52, which explains a 52% variability in the data.

Where current, reliable historical testing data are available for a compound or compound class, FSIS used the score assigned in Table 1. Where current, reliable historical data were not available, FSIS used the predicted score generated by Equation 2.

3. Rating the Veterinary Drugs According to Relative Public Health Concern

As indicated above, the score for the category, "FSIS Historical Testing Information on Violations," combines information on residue levels and toxicity, and thus represents a rough overall estimate of the relative risk per unit of consumption for each drug or drug class. This score, once multiplied by relative consumption data for each production class, yields a risk-based ranking. In addition to historical violation data, FSIS includes scores for acute and chronic toxicity concerns, impact on new and existing human disease and lack of testing information on violations as parameters for the relative public health concern calculation. The general form of the calculation is given in Equation 3 and the scores for relative public health concern are summarized in Table 1 (see page 31).

Equation 3

Relative Public Health Concern = *Predicted* or *Actual* score for
"FSIS Historical Testing Information on Violations" (Estimate of Relative Hazard)
multiplied by:
- a *modifier for* "Acute or Chronic Toxicity Concerns;" and
- a *modifier for* "Impact on New and Existing Human Disease."

A drug violation means that a compound was found at a level where the likelihood of a toxic effect exceeds the Food and Drug Administration's (FDA's) standards. However, this does not address the *severity* of the effect associated with the toxic endpoint. To capture this concern FSIS has added the category "Acute or Chronic Toxicity Concerns." Compounds in this category that have the highest degree of human toxicity receive the highest score.

The category, "Impact on New and Existing Human Disease," represents the extent to which the use or misuse of a compound will contribute to new and existing human disease. For example, there is a possibility that the creation of antibiotic-resistant human pathogens may result from the use of antibiotics in animals. This represents a potential public health concern that is not captured by the violation rate.

**The category, "Lack of FSIS Testing Information on Violations," has been removed from the expression for relative public health concern beginning with the planning of the 2006 NRP. SAT and other residue experts observed that the scores for the category lacked variability and, therefore, did not result in significant variability in the relative public health concern for a residue.**

The categories for acute and chronic toxicity concerns and impact on new and existing human disease introduce an element of arbitrariness into the calculation for the relative public health concern because there are no fundamentally "correct" assumptions for the appropriate weight that should be given to each category. FSIS considered several possible sets of weighting factors for use in Equation 3. The various formulas that were considered differed principally in the relative weights given to the categories, "Acute or Chronic Toxicity Concerns" versus "Impact on New and Existing Human Disease." FSIS selected the formula shown in the column for "Relative Public Health Concern Score" in Table 1. The selection is based on a consensus by the SAT about the relative importance of each category, and how much each category should be allowed to alter the underlying risk-based score, "V," in Equation 4. In this formula, the score for "FSIS Historical Testing Information on Violations" has been multiplied by a weighted average of the categories for "Acute or Chronic Toxicity Concerns" and "Impact on New and Existing Human Disease." These last two categories were combined because they both represent the negative potential public health effects associated with the use of a compound or compound class. The selected formula formalizes the basis of FSIS's judgment for relative public health concern for each compound and enables others to observe and understand the adjustments that were made. It also ensures consistency in how these adjustments were applied across a wide range of compounds. Equation 4 summarizes the way final adjustments were made.

Equation 4

Relative public health concern, R, rating for veterinary drugs:

$$R = V((D+3T)/4)$$

V = *Predicted* or *Actual* score for "FSIS Historical Testing Information on Violations"
D = score for "Impact on New and Existing Human Disease"
T = score for "Acute or Chronic Toxicity Concerns"

In this formula, the category, "Acute or Chronic Toxicity Concerns," was given three times the weight of "Impact on New and Existing Human Disease," because the former represents known direct health effects, while the latter represents possible indirect health effects.

The formulas used in this section for the veterinary drugs and in the section for the pesticides have been normalized to give the same maximum value. Because the formula for the pesticides uses scoring categories that are different from the veterinary drugs, their scores are not comparable in a quantitative sense. However, as a result of the normalization, the scores for the pesticides and veterinary drugs are comparable in magnitude, which enables a rough comparison to be made between the two different categories of compounds.

In Summary Table II, *Rank and Status for Veterinary Drugs* (page 3), the drugs are ranked by their rating scores, as generated using the above weighting formula. The scores presented in the Summary Table II enable FSIS to bring consistency, grounded in formal risk-based considerations, to its efforts to differentiate among a very diverse range of drugs and drug classes in a situation that is marked by minimal data on relative exposures**.** These rankings do not account for differences in exposure due to differences in overall consumption. Data on relative consumption are applied subsequently, in Phase IV, when relative exposure values for each compound/production class (C/PC) pair are estimated.

## II. Prioritizing Candidate Drugs

Once the ranking of the veterinary drugs was completed, the ranking scores for relative public health concern were used as criteria for selecting compounds and compound classes to include in the 2008 NRP and to determine which compounds and compound classes to include in the 2008 NRP based on the availability of laboratory resources.

The consensus of FSIS and FDA was that those compounds and compound classes that have rankings of 1-10, 12, and 13 (out of a total of 30) represent a potential public health concern sufficient to justify their inclusion in the 2008 NRP. In addition, FSIS is performing limited testing on MGA (ranked 26$^{th}$).

Once the high-priority compounds and compound classes had been identified, it was necessary for FSIS to apply practical considerations to determine the compounds for which the Agency would sample. The principal consideration was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Based on these considerations, FSIS plans to schedule the following veterinary drugs in the 2008 NRP for domestic sampling:

- Antibiotics (7-plate bioassay)
- Arsenicals
- Avermectins
- *beta*-Agonists
- Carbadox
- Chloramphenicol
- Florfenicol
- Flunixin
- Melengestrol acetate (MGA)
- Nitrofurans
- Nitroimidazoles
- *Phenylbutazone*, Note that phenylbutazone will not be scheduled in the 2008 NRP. However, FAST positive samples will be tested for phenylbutazone.
- Sulfonamides
- Thyreostats
- Xenobiotic hormones

In the 2008 NRP, FSIS will employ a number of analytical methodologies to characterize (identify and quantitate) veterinary drug residues. The methodologies are effective for the analysis of individual compounds and there are also multi residue methods (MRMs) for antibiotics, avermectins, *beta*-agonists, and sulfonamides that distinguish individual compounds in a compound class.

Summary Table II (see page 3) lists all of the original candidate veterinary drugs in rank order. This table specifies individual compounds and compound classes that will be scheduled for domestic sampling in the 2008 NRP. For each highly ranked compound or compound class that is not included for domestic sampling in the 2008 NRP, a brief explanation of the reason for its exclusion is provided. This table will be used to identify future method development needs for veterinary drugs for the FSIS NRP.

## III. Identifying Compound/Production Class (C/PC) Pairs for Veterinary Drugs

The SAT participants identify the production classes of concern for each of the drugs and drug classes to be included in the 2008 NRP. These determinations were based upon professional judgment of the likelihood of finding violations within each production class (information examined included use approvals, extent of use, evidence of misuse and, if available, past violation history), combined with the proportion of total domestic meat consumption each production class represented. The results are presented in Table 3, *Production Classes Considered for Each Veterinary Drug/Drug Class* (see page 37). Compound/Production Class pairs included in the 2008 NRP are designated by a "●." Those C/PC pairs that are of regulatory concern, but that could not be included in the 2008 NRP because of laboratory resource constraints, are marked with a "○."

FSIS suspended scheduled testing for certain production classes in 2008; these are marked with a "■."

Production class nomenclature:

- Beef cows are mature female cattle bred for muscle development, ordinarily having given birth to one or more calves.
- Boars are mature swine showing male sexual characteristics.
- Bulls are mature, uncastrated male cattle.
- Calves/veal definitions are under FSIS review.
- Dairy cows are mature female cattle bred for milk production, ordinarily having given birth to one or more calves.
- Ducks are birds of both sexes and any age.
- Egg products are yolks, whites, or whole eggs after breaking and are processed as dried, frozen, or liquid.
- Geese are birds of both sexes and any age.
- Goats are animals of both sexes and any age.
- Heifers are young, female cattle that have not yet given birth to a calf.
- Lambs are generally defined as sheep younger than 14 months and having a break joint in at least one leg.
- Market hogs are swine usually marketed near six months of age and 200 to 300 pounds live weight.
- Mature chickens are adult female birds, usually more than 10 months of age.
- Mature turkeys are birds of both sexes and usually more than 15 months of age.
- Other livestock include bison, deer, elk, etc.

- Other poultry include ratites (typically ostriches, emus and rheas), guineas, squabs (young, unfledged pigeons), adult pigeons, pheasants, grouse, partridge, quail, etc.
- Rabbits are any of several lagomorph mammals of both sexes and any age.
- Roaster pigs are animals of both sexes and any age that are marketed with the carcass unsplited and with the head on.
- Sheep are mature animals of both sexes.
- Sows are mature female swine ordinarily having given birth to one or more litters.
- Stags are male swine castrated after they have reached sexual maturity.
- Steers are male cattle castrated before sexual maturity.
- Young chickens include: broilers/fryers birds of both sexes that are usually less than 10 weeks of age; roasters, birds of both sexes usually less than 12 weeks of age; and capons, surgically castrated male birds usually less than 8 months of age.
- Young turkeys include fryer/roaster birds that are of both sexes and usually less than 12 weeks of age, and include turkeys that are birds of both sexes usually less than 6 months of age.

## IV. Allocation of Sampling Resources

***"Full-Resource" Sampling***

Table 3 lists the estimated consumption of each production class as a percentage of the total consumption of all the production classes in the table. To obtain these estimates, production data for animals (and egg products) that were presented for slaughter (or processing) in federally inspected establishments during calendar year 2006 were employed as a surrogate for consumption. The production data for calves were collected, collated and reported by FSIS, using the Automated Data Reporting System. The production data for all other production classes, including egg products, were collected by FSIS, and collated and reported by the National Agricultural Statistical Service. As shown in Equation 5, the estimated relative percent of consumption represented by each production class was obtained by dividing the estimated total annual U.S. domestic production (pounds dressed weight) for that class by the total poundage for all production classes that are listed in Table 3:

Equation 5

Percent Estimated Relative Percent of Domestic Consumption (ERC)

ERC = AP/TP x 100
AP = Annual Production (dressed weight in pounds)
TP = Total Annual Production of all Production Classes

All calculations and results are presented in Table 3, *Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products*.

To establish a relative sampling priority for each compound-production class pair, the ranking score (as calculated in Table 1) was multiplied by the estimated relative percent of domestic consumption for each production class (as calculated in Table 4 and as presented in Table 3). The resulting priority score for compound-production class pairs is shown in tables 4 and 5 and is calculated as follows (Equation 6):

Equation 6

Priority Score (PS)

PS = CP x RPC
CP = compound priority score rating
RPC = relative percent consumption

Equation 6 is analogous to the equation used to estimate risk in Equation 1, in which risk per unit of consumption is multiplied by consumption. While the results of Equation 6 do not constitute an estimate of risk, they provide a numerical representation of the relative public health concern represented by each C/PC pair, and thus can be used to prioritize FSIS analytical sampling resources according to the latter. Note that the risk ranking provided by Equation 6 is based upon average consumption across the entire U.S. population, rather than upon maximally exposed individuals.

In Table 4, *Veterinary Drug Compound-Production Class Pairs, Sorted by Sampling Priority Score, "Full Resource" Sampling*, the calculation shown in Equation 6 has been carried out for the antibiotics, arsenicals, avermectins, and sulfonamides, MGA, florfenicol, flunixin, xenobiotic hormones, carbadox, *beta*-agonists, and thyreostats for each production class in which the specified drug might appear (as indicated in Table 5). Initially, the compound-production class pairs were sorted by their sampling priority scores (see Table 4). Then, the compound-production class pairs were assigned sampling numbers of 300. These priority scores were combined with historical violation rate information for each individual compound-production class pair, information on laboratory sampling capacity, and the number of slaughter facilities to select, for each pairing the final number of samples to be scheduled for each analysis. Statistically, if v is the true violation rate in the population and n is the number of samples, the probability, P, of finding at least one violation among the *n* samples (assuming random sampling) is: $P = 1-(1-v)^n$. Therefore, if the true violation rate is 1%, the probabilities of detecting at least one violation with sampling levels of 300, 230 are 95% and 90%, respectively (see Appendix III: Statistical Table). The 300 per year sampling level is useful for scheduling production classes with somewhat lower violation rates (which is typically done for larger production classes, since these represent a larger potential consumer exposure).

Beginning in the 2006 NRP, minor species, rabbits, ratites, squab, geese, ducks, and bison, have not be scheduled for the domestic sampling program. The reason is that minor species are low production animals. Not scheduling the minor species allows FSIS to focus those resources on the development of methodologies in areas that are of high public health concern. However, based on field reports, FDA expressed interest in performing limited testing for antibiotics in ducks and rabbits, and for avermectins in rabbits in the 2008 NRP.

## Adjusting Relative Sampling Numbers

### *Adjusting for historical data on violation rates of individual C/PC pairs*

As described above, FSIS uses "FSIS Historical Testing Information on Violations" as a critical factor in ranking the various veterinary drugs and drug classes according to their relative public health concern. Because this information is available for each production class individually, it can also be used to further refine the relative priority of sampling each C/PC pair. Table 5, *Number of Scheduled Samples for Veterinary Drug/Production Class Pairs, 2008 NRP Domestic Scheduled Sampling,* lists the number of analyses assigned to each C/PC pair in Table 4. Table 5 also reports the total number of samples analyzed in the FSIS scheduled sampling plan for the period 01/01/1997-12/31/2006, and the percent of samples found to be violative (i.e., present at a level in excess of the action level or regulatory tolerance; or, for those compounds that are prohibited, present at any detectable level) for each compound-production class pair. Using these data, the following rules were applied to adjust the sampling numbers:

- If less than 300 samples (i.e., 230 samples) were tested in the FSIS scheduled sampling plan for a compound-production class pair for the period of 01/01/1997-12/31/2006, maintain the sampling level (if 300 were assigned initially, maintain 300 samples).
- If the number of samples tested in the FSIS scheduled sampling plan for a compound-production class pair for the period 01/01/1997-12/31/2006 was 300 samples, and violations were found during CY 2007, or the violation rate greater than or equal to 0.70% ($\geq$ 0.70%) during 01/01/1997-12/31/2006, decrease the sampling level using Statistical Table in Appendix III.
- If 300 samples were tested in the FSIS scheduled sampling plan for a compound-production class pair for the period 01/01/1997-12/31/2006, and no violations were found during CY 2007, maintain the sampling level.
- If at least 300 samples tested in the FSIS scheduled sampling plan for a compound-production class pair (for the period 01/01/2004-12/31/2006), and a violation rate of 0.00% was found, rotate the C/PC pair out of the NRP.[6]
- The maximum number of samples to be scheduled for testing is 300.

All of the above adjustments were applied, and the sampling numbers obtained following these adjustments are listed in Table 5 under the heading "Initial Adjustment" (initial adjusted number of samples).

### *Adjusting for laboratory capacity*

After adjusting for historical data, it was necessary to make a final set of adjustments to match the total sampling numbers for each compound class with the analytical capabilities of the FSIS laboratories.

### *Adjustment for the Number of Slaughter Facilities*

An adjustment to the total number of scheduled samples was made based on the number of production facilities. For this adjustment, FSIS considered the total number of production facilities (USDA Inspected Establishments for 2006) for each production class. If the total number of production facilities for a production class was found to be low relative to other production classes, the total number of scheduled samples was reduced for that production class. The number of samples selected for the

6 Compound-production class pairs removed from scheduled sampling will be reintroduced at a later date.

reduction is based on FSIS professional judgment. If the number of facilities is less than 100, the number of scheduled samples was adjusted down by at least 1 level (if 300 were assigned initially, decrease to at least 230 samples).

***Adjustment for a zero percent (0%) violation rate for the three year period, 2004 – 2006***

FSIS historical violation data were examined for the 2004-2006 production years. For compound slaughter class pairs that had a zero percent violation rate for the three year period, the number of scheduled samples has been reduced to zero.

***Final Adjustment***

The total number of scheduled samples for compound-production class pairs were obtained following adjustments for laboratory capacity, production, and violation rate data are listed in Table 5, under the heading "Final Adjustment."

## "Limited Resource" Sampling

The 2008 NRP includes a number of compounds for which FSIS does not have extensive sampling data. FSIS is concerned with obtaining information on their occurrence in production classes where it is suspected they might be of concern. To enable FSIS to sample this entire range of compounds, it is necessary to limit the number of samples taken per compound. In apportioning this "limited resource" sampling among the production classes of concern, it was particularly important to ensure that a sufficient number of samples be taken from each production class analyzed. If too few samples are taken from a production class, and no violations are detected, it would be difficult to interpret such a result. Where possible, 300 analyses are scheduled in each production class to be sampled. This yields a 95% confidence of detecting a violation, if the true violation rate is 1%.

For the 2008 NRP, selection of production classes for the limited resource sampling for compounds (Table 5) was made as follows:

- Flunixin is of concern in bulls, dairy cows, beef, cows, and heavy calves. The analytical capacity is 260 samples for flunixin in the domestic 2008 NRP. FSIS will schedule 180 analyses for flunixin in bulls, and dairy cows for domestic sampling and 88 fresh beef samples for the import program for a total of 258 samples.

- Nitrofurans (furazolidone and furaltadone) are of concern in dairy cows, market hogs and sows. The analytical capacity for nitrofurans in the 2008 NRP is 830 samples. FSIS will schedule 830 analyses for nitrofurans in dairy cows, market hogs and sows for domestic sampling in the 2008 NRP. No import samples are scheduled for nitrofurans.

- Nitroimidazoles (dimetridazole and ipronidazole) are of concern in young chickens. The analytical capacity for nitroimidazoles in the 2008 domestic NRP is 300 samples. FSIS will schedule 300 analyses for nitroimidazoles for young chickens in the 2008 NRP and will also schedule 16 fresh chicken import samples for a total of 316 nitroimidazole samples.

- Phenylbutazone is of concern in bulls, dairy cows, and beef cows for the 2008 domestic NRP; the analytical capacity for phenylbutazone is limited. FSIS will not schedule samples for the domestic 2008 domestic or import program. However, testing for phenylbutazone will be conducted for in-plant FAST positive samples.

- Thyreostats are of concern beef cows for the 2008 domestic NRP; the analytical capacity for thyreostats is 300 samples. FSIS will schedule 300 analyses in beef cows for domestic sampling and 90 fresh veal samples for import sampling for a total of 390 samples.

- Trenbolone is of concern in formula-fed veal and non-formula-fed veal for the 2008 NRP; the analytical capacity for trenbolone is 180 samples in 2007 domestic NRP. FSIS will schedule 180 samples in formula-fed veal and non-formula-fed veal for domestic sampling. No samples will be scheduled for the import program.

- Zeranol is of concern in formula-fed veal and non-formula-fed veal for the 2008 NRP; the analytical capacity for zeranol is 270 samples in the domestic 2007 NRP. FSIS will schedule 180 samples in formula-fed veal and non-formula-fed veal for domestic sampling .FSIS will also schedule 90 fresh veal import samples for a total of 270 samples.

The above information is presented in tabular format at the end of the section, "Summary of Domestic and Import Sampling," in Table 50, *Combined Summary, 2008 FSIS NRP, Domestic and Import Scheduled Sampling, and Exploratory Assessments*.

## V. Scoring Key

***FSIS Historical Testing Information on Violations (01/01/1997 - 12/31/2006)***

Violation rate scores were calculated by two different methods (see below), using violation rate data from FSIS random sampling of animals entering the food supply:

Method A: Maximum Violation Rate. Identify the production class exhibiting the highest average violation rate (the number of violations over the period from 1997 - 2006, divided by the total number of samples analyzed). Score as follows:

4 = > 0.70%
3 = 0.31% - 0.70 %
2 = 0.15% - 0.30%
1 = < 0.15%
NT = Not tested by FSIS
NA = Tested by FSIS, but violation information does not apply

*Note that the above violation rate criteria are different from those used in planning the 1998 – 2002 NRP's. For previous NRP's the criteria were as follows: 4 = > 1.0%; 3 = 0.50% - 1.0 %; 2 = 0.15% - 0.49%; and 1 = < 0.15%. The new cutoffs permit FSIS to better distinguish between "high-violation" and "low-violation" slaughter classes.*

Method B: Violation Rate Weighted by Size of Production Class. For each production class analyzed, multiply the average violation rate (defined above) by the relative consumption value for that class (weighted annual U.S. production for that class, divided by total production for all classes for which FSIS has regulatory responsibility). Add together the values for all production classes. Score as follows:

4 = > 0.15%
3 = 0.076% - 0.15%
2 = 0.01% - 0.075%
1 = < 0.01%
NT = Not tested by FSIS
NA = Tested by FSIS, but violation information does not apply

A final score is determined by assigning, to each drug or drug class, the greater of the scores from Method A and Method B.

It can be seen that Method A identifies those drugs that are of regulatory concern because they exhibit high violation rates, independent of the relative consumption value of the production class in which the violations have occurred. Method B identifies those drugs that may not have the highest violation rates, but would nevertheless be of concern because they exhibit moderate violation rates in a relatively large proportion of the U.S. meat supply. By employing methods A and B together, and assigning a final score based on the highest score received from each, both of the above concerns are captured.

***Regulatory Concern***

This consists of professional judgments made about the likelihood of occurrence of violations, based on regulatory intelligence information about possible misuse. Due to the public health significance of drug residue violations, information concerning a compound must meet only one of the requirements listed under each number below to receive that numerical ranking.

4 = Well-documented intelligence information gathered from a variety of reliable sources indicates possible widespread misuse of the compound, and/or this compound not approved for use in food animals in the U.S.

3 = Intelligence information gathered through a variety of sources indicates only occasional misuse of this compound. The dosage form/packaging of this compound has potential for misuse.

2 = Intelligence information rarely indicates misuse of this compound.

1 = Intelligence information has never indicated misuse of this compound.

***Withdrawal Time***

Producers using approved animal drugs are required to follow approved "conditions of use." For each drug, in each production class in which it is approved, the conditions of use specify the dosing regimen and the withdrawal time. The withdrawal time is the number of days that must pass between completion of the dosing regimen and the time of slaughter. This allows sufficient time for the concentration of drug in the animal to decrease below the tolerance. For approved drugs, the following scores were used:

- Score = 4, when the withdrawal time greater than 14 days;
- Score = 3, when the withdrawal time is between 8 and 14 days;
- Score = 2, when the withdrawal time is between 1 and 7 days; and
- Score = 1, when there is a zero-day withdrawal time

For unapproved drugs, scores in this category were assigned based on estimates of their half-lives.

***Impact on New and Existing Human Disease***

This represents the extent to which the use or misuse of a drug may contribute to new and existing human disease by changing the patterns of antibiotic resistance in human pathogens. A score for impact on new and existing human disease is determined as follows:

4= Scientific information gathered from a variety of reliable sources indicates that possible widespread use of this compound might significantly modify drug resistance patterns of human pathogenic organisms.

3 = Limited scientific information is available to suggest or document public health risk but compound has the potential to affect microflora.

2 = No scientific information is available to suggest or document public health risk.

1 = Current scientific information available suggests no public health risk.

***Relative Number of Animals Treated***

These scores are based on economic data on doses sold, as well as surveys of treatment practices in animal populations that are representative of national feedlot, dairy, poultry, and swine production.

4 = Products containing this drug fall within the top third of those administered to animals treated within a particular category and dosage form of active ingredient.

3 = Products containing this drug fall within the middle third of those administered to animals treated within a particular category and dosage form of active ingredient.

2 = Products containing this drug fall within the bottom third of those administered to animals treated within a particular category and dosage form of active ingredient (but have more usage than products given a score of "1," as defined below).

1 = Products containing this drug are estimated to have extremely limited usage.

Note: Where data were unavailable, scores were estimated, based on comparison to related drugs with known usage levels. Numbers estimated in this way are in parentheses.

***Acute or Chronic Toxicity Concerns***

This represents a combination of the toxicity of the compound and the severity associated with the compound's toxic endpoint.

4 = Compound is a carcinogen, or potentially life threatening, or has significant acute effects including the anaphylactic response to an allergen.

3 = Systemic No Observed Effect Levels (NOEL's) seen at intermediate to low doses in laboratory test animals. Antimicrobial effects with a high potential to alter intestinal microflora.

2 = Systemic NOEL's seen at high oral doses in laboratory test animals. Antimicrobial effects with a moderate potential to alter intestinal microflora.

1 = Compound generally shows no toxicity in laboratory test animals even at doses much higher than present in edible tissues at zero-day withdrawal.

**Table 1**
**Scoring Table for Veterinary Drugs**
**2008 FSIS NRP, Domestic Scheduled Sampling**

| *Compound / Compound Class* | *Historical Testing for Violations[1] (V)* | *Regulatory Concern[2] (R)* | *Withdrawal Time[3] (W)* | *Relative Number Treated[4] (N)* | *Predicted V (V = 1.157 + 0.18 (W*N))[5]* | *Impact New & Existing Human Disease[6] (D)* | *Acute or Chronic Toxicity Concerns[7] (T)* | *Relative Public Health Concern Score (P = V[(D+3T)/4])* |
|---|---|---|---|---|---|---|---|---|
| Antibiotics[8] | 4 | 4 | 4 | 4 | 4.0 | 3 | 4 | **15.1** |
| Avermectins[9] | 4 | 3 | 4 | 4 | 4.0 | 2 | 4 | **14.1** |
| Carbadox[10] | 3 | 4 | 4 | 3 | 3.0 | 3 | 4 | **12.4** |
| Florfenicol | NA-3[11] | 3 | 4 | 4 | 4.0 | 3 | 3 | **12.1** |
| Sulfonamides[12] | 4 | 4 | 3 | 4 | 4.0 | 3 | 3 | **12.0** |
| Arsenicals[13] | 3 | 4 | 2 | 4 | 3.0 | 3 | 2 | **6.8** |
| Thyreostats[14] | NA-0[15] | 4 | 3 | 1 | 1.7 | 2 | 4 | **5.9** |
| Dipyrone[16] | Not Tested | 4 | 3 | 1 | 1.7 | 1 | 4 | **5.5** |
| Ractopamine[17] | 2 | 4 | 2 | 3 | 2.0 | 2 | 3 | **5.5** |
| Flunixin | 3 | 4 | 2 | 3 | 3.0 | 1 | 2 | **5.3** |
| Berenil[18] | NA-2[19] | 4 | 4 | 1 | 1.9 | 2 | 3 | **5.2** |
| Trenbolone[20] | NA-2[21] | 4 | 1 | 3 | 1.7 | 3 | 3 | **5.1** |
| Zeranol[22] | NA-2[23] | 3 | 1 | 3 | 1.7 | 3 | 3 | **5.1** |
| Methyl prednisone | Not Tested | 4 | 2 | 2 | 1.9 | 1 | 3 | **4.7** |
| Dexamethasone | NA-O[24] | 4 | 2 | 2 | 1.9 | 1 | 3 | **4.7** |
| Thiamphenicol | Not Tested | 3 | 2 | 1 | 1.5 | 3 | 3 | **4.6** |
| Eprinomectin | Not Tested | 2 | 2 | 3 | 2.2 | 2 | 2 | **4.5** |
| Clorsulon[25] | Not Tested | 2 | 3 | 2 | 2.2 | 2 | 2 | **4.5** |
| Amprolium[26] | Not Tested | 4 | 2 | 2 | 1.9 | 3 | 2 | **4.2** |
| Halofuginone[27] | NA-1[28] | 1 | 2 | 2 | 2.0 | 2 | 2 | **4.0** |

**Table 1** *(continued)*
**Scoring Table for Veterinary Drugs**
**2008 FSIS NRP, Domestic Scheduled Sampling**

| *Compound / Compound Class* | *Historical Testing for Violations[1] (V)* | *Regulatory Concern[2] (R)* | *Withdrawal Time[3] (W)* | *Relative Number Treated[4] (N)* | *Predicted V (V = 1.157 + 0.18 (W*N))[5]* | *Impact New & Existing Human Disease[6] (D)* | *Acute or Chronic Toxicity Concerns[7] (T)* | *Relative Public Health Concern Score (P = V[(D+3T)/4])* |
|---|---|---|---|---|---|---|---|---|
| Benzimidazoles[29] | Not Tested | 1 | 3 | 2 | 2.2 | 1 | 2 | **3.9** |
| Lasalocid[30] | Not Tested | 2 | 1 | 3 | 1.7 | 3 | 2 | **3.8** |
| Prednisone | Not Tested | 2 | 2 | 1 | 1.5 | 1 | 3 | **3.8** |
| Etodolac[31] | Not Tested | 3 | 2 | 1 | 1.5 | 1 | 3 | **3.8** |
| Hormones, endogenous | Not Tested | 2 | 1 | 4 | 1.9 | 2 | 2 | **3.8** |
| Melengesterol acetate (MGA)[32] | 1 | 3 | 1 | 4 | 1.0 | 3 | 3 | **3.0** |
| Levamisole[33] | NA-1[34] | 3 | 3 | 2 | 3.0 | 1 | 1 | **3.0** |
| Morantel and pyrantel[35] | Not Tested | 1 | 1 | 2 | 2.0 | 2 | 1 | **2.5** |
| Nicarbazin[36] | Not Tested | 2 | 2 | 1 | 1.5 | 2 | 1 | **1.9** |
| Veterinary tranquilizers | Not Tested | 4 | 2 | 2 | 1.9 | 1 | 1 | **1.9** |

[1] Scores for historical testing information for residue violations, *V*, are provided by USDA's Food Safety and Inspection Service (FSIS).
[2] Scores for regulatory concern, *R*, are provided by FDA's Center for Veterinary Medicine (CVM).
[3] Scores for withdrawal time *W*, are provided by FDA's Center for Veterinary Medicine (CVM).
[4] Scores for relative number of animals treated, *N*, are provided by FDA's Center for Veterinary Medicine (CVM).
[5] Equation is derived from linear regression. For an explanation, see the section on *Compound Rankings, Estimating Violation Rates.* Note that the predicted value is used unless *V* is known.
[6] Scores impact on new and existing human disease, *D*, are provided by FDA's Centers for Disease Control (CDC).
[7] Scores for acute or chronic toxicity concerns, *T*, are provided by FDA's Center for Veterinary Medicine (CVM).
[8] Antibiotics in the 7-Plate Bioassay.
[9] Avermectins in the FSIS MRM are doramectin, ivermectin, moxidectin.
[10] Antimicrobial.
[11] NA-3 = The data are preliminary. Data have been collected for only 1-2 years for 2 or more production classes.
[12] Antimicrobials and some are coccidiostats.
[13] Detected as As.
[14] Includes 2-thiouracil, 6-methyl-2-thiouracil, 6-proply-2-thiouracil, 2-mercapto-1-methylimidazole (tapazole), 6-phenyl-2-thiouracil, and 2-mercaptobenzimidazole

**Table 1** *(continued)*
**Scoring Table for Veterinary Drugs**
**2008 FSIS NRP, Domestic Scheduled Sampling**

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[15] NA-O = The data are preliminary. Data have been collected for only one year for 2 or more production classes.
[16] NSAID.
[17] Historical testing data for Ractopamine violations is used to determine the Relative Public Concern score for beta-Agonists.
[18] Antiprotozoal, histomonas.
[19] NA-2 = Scheduled sampling data have been collected for a single production class and for a limited time period.
[20] Xenobiotic hormone.
[21] NA-2 = Scheduled sampling data have been collected for a single production class and for a limited time period.
[22] Xenobiotic hormone.
[23] NA-2 = Scheduled sampling data have been collected for a single production class and for a limited time period. Not included in regression analysis.
[24] NA-1 = Scheduled sampling data have not been collected in the past 3-5 years; therefore, the data are not current enough to be considered reliable for calculating a value for V.
[25] Anthelmintic, Trematodes.
[26] Coccidiostat.
[27] Antiprotozoal, coccidiostat.
[28] NA-1 = Scheduled sampling data have not been collected in the past 3-5 years; therefore, the data are not current enough to be considered reliable for calculating a value for V.
[29] Anthelmintics.
[30] Coccidiostat.
[31] NSAID.
[32] Xenobiotic hormone; FDA decreased the score for regulatory concern for melengestrol acetate (MGA) from 3 (2005 NRP) to 2 for the 2006 NRP.
[33] Anthelmintic, Nematodes.
[34] NA-1 = Scheduled sampling data have not been collected in the past 3-5 years; therefore, the data are not current enough to be considered reliable for calculating a value for V.
[35] Anthelmintics.
[36] Coccidiostat.

**Table 2A**
**Production Classes Considered for each Veterinary Drug and Drug Class**
**2008 FSIS NRP, Domestic Scheduled Sampling**

| *ERC*[i] | *Production Class* | Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) Prohibited *Drugs*[ii] | | | | | |
|---|---|---|---|---|---|---|---|
| | | *Clenbuterol*[iii] | *Chloramphenicol* | *Fluoroquinolones* | *Nitrofurans* | *Nitroimidazoles* | *Phenylbutazone*[iv] *(ELISA method)* |
| 1.753 | Beef cows | | | | | | ○ |
| 0.086 | Boars/Stags | | | ● | | | |
| 0.015 | Bob veal | | ● | ● | | | |
| 0.455 | Bulls | | | ● | | | ○ |
| 1.388 | Dairy cows | | | ● | ● | | ○ |
| 0.180 | Ducks | | | ● | | | |
| 3.364 | Egg products | | | | | | |
| 0.108 | Formula-fed veal | | | ● | | | |
| 0.027 | Goats | ● | | ● | | | |
| 0.011 | Heavy calves | | | ● | | | |
| 7.099 | Heifers | | ● | ● | | | |
| 0.160 | Lambs | | | ● | | | |
| 18.552 | Market hogs | ● | | ● | ● | | |
| 0.694 | Mature chickens | | ● | ● | | | |
| 0.007 | Mature sheep | | | ● | | | |
| 0.080 | Mature turkeys | | ● | ● | | | |
| 0.003 | non-Formula-fed veal | ● | | ● | | | |
| 0.001 | Rabbits | | | ● | | | |
| 0.052 | Roaster pigs | | | ● | | | |
| 1.008 | Sows | | | ● | ● | | |
| 13.719 | Steers | | ● | ● | | | |
| 44.495 | Young chickens | | | | | ● | |
| 6.665 | Young turkeys | | | | | | |

● = Compound/Production Class Pairs included in the 2008 NRP.
○ = Compound/Production Class Pairs that are of regulatory concern, but are not included in the 2008 NRP because of laboratory resource constraints.

[i] ERC = Estimated relative percent of domestic consumption, calendar year 2006. This was derived by estimating the total annual U.S. domestic production (pounds dressed weight) for each production class, and dividing by the total poundage for all production classes on this list (see Table 4).
[ii] AMDUCA Drug Use Clarification Act of 1994 (AMDUCA) drugs are considered high priority in the NRP; for this reason, they do not receive a ranking score.
[iii] Clenbuterol is analyzed using the beta-Agonist methodology that includes ractopamine, clenbuterol, cimaterol, zilpaterol, and salbutamol.
[iv] Phenylbutazone will not be scheduled in the 2008 NRP; however, FAST positive samples will be tested for phenylbutazone (ELISA method).

**Table 2B**
**Production Classes to be Considered for each Veterinary Drug and Drug Class**
**2008 FSIS NRP, Domestic Scheduled Sampling**

| *ERC*[i] | *Production Class* | *Veterinary Drug and Priority Rating* | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | *Antibiotics*[ii] | *Arsenicals* | *Avermectins* | *Carbadox* | *Florfenicol* | *Flunixin* | *Melengestrol Acetate (MGA)* |
| | | 15.1 | 6.8 | 14.1 | 12.4 | 12.1 | 5.3 | 3.0 |
| 1.753 | Beef cows | ■ | ● | | | ● | ○ | |
| 0.086 | Boars/Stags | ● | | ● | | ○ | | |
| 0.015 | Bob veal | ● | | | | ○ | | |
| 0.455 | Bulls | ● | | ● | | ○ | ● | |
| 1.388 | Dairy cows | ● | | | | ○ | ● | |
| 0.180 | Ducks | ● | | | | | | |
| 3.364 | Egg products | | ● | | | | | |
| 0.108 | Formula-fed veal | ● | | | | | | |
| 0.027 | Goats | ● | | ● | | | | |
| 0.011 | Heavy calves | ● | | ● | | | ○ | |
| 7.099 | Heifers | ● | | | | | | ● |
| 0.160 | Lambs | ● | | ● | | | | |
| 18.552 | Market hogs | ● | | | ● | ○ | | |
| 0.694 | Mature chickens | ● | | | | ● | | |
| 0.007 | Mature sheep | ● | | ● | | | | |
| 0.080 | Mature turkeys | ● | ● | | | ○ | | |
| 0.003 | non-Formula-fed veal | ● | | ● | | ● | | |
| 0.001 | Rabbits | ● | | ● | | | | |
| 0.052 | Roaster pigs | ● | | ● | ● | ○ | | |
| 1.008 | Sows | ● | | ● | | ○ | | |
| 13.719 | Steers | ● | | | | | | |
| 44.495 | Young chickens | | | | | ○ | | |
| 6.665 | Young turkeys | | | | | | | |

**Table 2B** *(continued)*
**Production Classes Considered for each Veterinary Drug and Drug Class**
**2008 FSIS NRP, Domestic Scheduled Sampling**

| *ERC* | *Production Class* | *Veterinary Drug and Priority Rating* | | | | |
|---|---|---|---|---|---|---|
| | | *beta-Agonists*[iii] | *Sulfonamides* | *Thyreostats* | *Trenbolone* | *Zeranol* |
| | | 5.5 | 12.0 | 5.9 | 5.1 | 5.1 |
| 1.753 | Beef cows | | | ● | | |
| 0.086 | Boars/Stags | | | | | |
| 0.015 | Bob veal | | ● | | | |
| 0.455 | Bulls | | | | | |
| 1.388 | Dairy cows | | ● | | | |
| 0.180 | Ducks | | | | | |
| 3.364 | Egg products | | ● | | | |
| 0.108 | Formula-fed veal | | | | ● | ● |
| 0.027 | Goats | ● | ● | | | |
| 0.011 | Heavy calves | | ● | | | |
| 7.099 | Heifers | | ● | | | |
| 0.160 | Lambs | | | | | |
| 18.552 | Market hogs | ● | ● | ■ | | |
| 0.694 | Mature chickens | | ● | | | |
| 0.007 | Mature sheep | | | | | |
| 0.080 | Mature turkeys | | | | | |
| 0.003 | non-Formula-fed veal | ● | ● | | ● | ● |
| 0.001 | Rabbits | | | | | |
| 0.052 | Roaster pigs | | ● | | | |
| 1.008 | Sows | | ● | | | |
| 13.719 | Steers | | ● | | | |
| 44.495 | Young chickens | | ● | | | |
| 6.665 | Young turkeys | | | | | |

● = Compound/Production Class Pairs included in the 2008 NRP.
○ = Compound/Production Class Pairs that are of regulatory concern, but are not included in the 2008 NRP because of laboratory resource constraints.
■ = Compound/Production Class Pairs that have been suspended from testing by FSIS in the 2008 NRP.

[i] ERC = Estimated relative percent of domestic consumption, calendar year 2006. This was derived by estimating the total annual U.S. domestic production (pounds dressed weight) for each production class, and dividing by the total poundage for all production classes on this list (see Table 3).
[ii] Antibiotics in the 7-Plate Bioassay
[iii] *beta*-Agonists were ranked using the historical testing data on ractopamine violations.

**Table 3**
**Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products Based on 2006 Animal and Egg Production Data[A]**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| Production Class | Number of Head Slaughtered [B] | Pounds per Animal (dressed weight) [C] | Total Pounds (dressed weight) | Percent Estimated Relative Consumption |
|---|---|---|---|---|
| Bulls | 528,266 | 914 | 482,835,124 | 0.455 |
| Beef cows | 2,989,010 | 622 | 1,859,164,220 | 1.753 |
| Dairy cows | 2,366,281 | 622 | 1,471,826,782 | 1.388 |
| Heifers | 9,813,470 | 767 | 7,526,931,490 | 7.099 |
| Steers | 17,462,162 | 833 | 14,545,980,946 | 13.719 |
| Bob veal | 206,266 | 75 | 15,469,950 | 0.015 |
| Formula-fed veal | 465,270 | 245 | 113,991,150 | 0.108 |
| Non-formula-fed veal | 8,716 | 350 | 3,050,600 | 0.003 |
| Heavy calves | 27,943 | 400 | 11,177,200 | 0.011 |
| **SUBTOTAL, CATTLE** | **33,867,384** | | **26,030,427,462** | **24.550** |
| Market hogs | 99,346,502 | 198 | 19,670,607,396 | 18.552 |
| Roaster pigs | 789,959 | 70 | 55,297,130 | 0.052 |
| Boars/Stags | 399,629 | 227 | 90,715,783 | 0.086 |
| Sows | 3,460,066 | 309 | 1,069,160,394 | 1.008 |
| **SUBTOTAL, SWINE** | **103,996,156** | | **20,885,780,703** | **19.698** |
| Sheep | 115,243 | 67 | 7,721,281 | 0.007 |
| Lambs | 2,419,751 | 70 | 169,382,570 | 0.160 |
| Goats | 569,319 | 50 | 28,465,950 | 0.027 |
| **SUBTOTAL, OVINE** | **3,104,313** | | **205,569,801** | **0.194** |
| Horses | 104,433 | 500 | 52,216,500 | 0.049 |
| Bison | 42,506 | 610 | 25,928,660 | 0.024 |
| **TOTAL, ALL LIVESTOCK** | **141,114,792** | | **47,199,923,126** | **44.516** |
| Young chickens | 8,901,364,574 | Not reported | 47,177,232,242 | 44.495 |
| Mature chickens | 131,490,164 | Not reported | 736,344,918 | 0.694 |
| Young turkeys | 252,383,910 | Not reported | 7,066,749,480 | 6.665 |
| Mature turkeys | 3,412,675 | Not reported | 85,316,875 | 0.080 |
| Ducks | 28,026,675 | Not reported | 190,581,390 | 0.180 |
| Geese | 153,837 | Not reported | 1,999,881 | 0.002 |
| Other fowl (includes squab) | 1,338,642 | Not reported | 2,543,420 | 0.002 |
| **SUBTOTAL, POULTRY** | **9,318,170,477** | | **55,260,768,206** | **52.119** |
| Rabbits | 310,093 | Not reported | 1,581,474 | 0.001 |
| Egg products [D] | Not applicable | Not applicable | 3,566,786,000 | 3.364 |
| **GRAND TOTAL in POUNDS, ALL PRODUCTION CLASSES** | | | **106,029,058,806** | **100** |

**(A) The purpose of this table is to estimate, for each individual production class for which FSIS has regulatory responsibility, the amount of domestically-produced product consumed relative to the total for all of these production classes. This was estimated by assuming that the relative amount of each production class consumed would be approximately proportional to the total poundage (based on dressed weight) of each production class presented for slaughter or processing in federally inspected establishments. Dressed weight, which represents the weight of the carcass after hide, hoof, hair, and viscera have been removed, was used instead of live weight, because the former was thought to be more closely representative of total pounds consumed.** ***Note: this table estimates the amount of domestically produced product that is consumed, regardless of who consumes it (i.e., no distinction is made between domestic products consumed domestically and products that are exported).*** **(B) Number of heads is obtained from the Animal Disposition Reporting System (ADRS). (C) Average dressed weights are obtained from the publication: "Livestock Slaughter," National Agricultural Statistics Service (NASS), March 2006. In instances when the average weight is not available, an average weight based on previous calendar year's data was imputed. (D) For Fiscal Year 2006**

**Table 4**
**Veterinary Drug/Production Class Pairs,**
**Sorted by Sampling Priority Score**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Veterinary Drug or Drug Class* | *Compound Priority Rating (P)* | *Production Class* | *Relative Percent Consumption in 2006(C)* | *Sampling Priority Score (P * C)* | *Unadjusted Number of Samples* |
|---|---|---|---|---|---|
| Sulfonamides | 12.0 | Young chickens | 44.495 | 533.940 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Market hogs | 18.552 | 280.135 | 300 |
| Carbadox | 12.4 | Market hogs | 18.552 | 230.045 | 300 |
| Sulfonamides | 12.0 | Market hogs | 18.552 | 222.624 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Steers | 13.719 | 207.157 | 300 |
| Sulfonamides | 12.0 | Steers | 13.719 | 164.628 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Heifers | 7.099 | 107.195 | 300 |
| *beta* Agonists | 5.5 | Market hogs | 18.552 | 102.036 | 300 |
| Sulfonamides | 12.0 | Heifers | 7.099 | 85.188 | 300 |
| Sulfonamides | 12.0 | Egg products | 3.364 | 40.368 | 300 |
| Arsenicals | 6.8 | Egg products | 3.364 | 22.875 | 300 |
| MGA | 3.0 | Heifers | 7.099 | 21.297 | 300 |
| Florfenicol | 12.1 | Beef cows | 1.753 | 21.211 | 300 |

**Table 4** (*continued)*
**Veterinary Drug/Production Class Pairs,**
**Sorted by Sampling Priority Score**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Veterinary Drug or Drug Class* | *Compound Priority Rating (P)* | *Production Class* | *Relative Percent Consumption in 2006(C)* | *Sampling Priority Score (P * C)* | *Unadjusted Number of Samples* |
|---|---|---|---|---|---|
| Antibiotics (7-Plate Bioassay) | 15.1 | Dairy cows | 1.388 | 20.959 | 300 |
| Sulfonamides | 12.0 | Dairy cows | 1.388 | 16.656 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Sows | 1.008 | 15.221 | 300 |
| Avermectins | 14.1 | Sows | 1.008 | 14.213 | 300 |
| Sulfonamides | 12.0 | Sows | 1.008 | 12.096 | 300 |
| Arsenicals | 6.8 | Beef cows | 1.753 | 11.920 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Mature chickens | 0.694 | 10.479 | 300 |
| Thyreostats | 5.9 | Beef cows | 1.753 | 10.343 | 300 |
| Florfenicol | 12.1 | Mature chickens | 0.694 | 8.397 | 300 |
| Sulfonamides | 12.0 | Mature chickens | 0.694 | 8.328 | 300 |
| Flunixin | 5.3 | Dairy cows | 1.388 | 7.356 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Bulls | 0.455 | 6.871 | 300 |
| Avermectins | 14.1 | Bulls | 0.455 | 6.416 | 300 |

**Table 4** (*continued)*
**Veterinary Drug/Production Class Pairs,**
**Sorted by Sampling Priority Score**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Veterinary Drug or Drug Class* | *Compound Priority Rating (P)* | *Production Class* | *Relative Percent Consumption in 2006(C)* | *Sampling Priority Score (P * C)* | *Unadjusted Number of Samples* |
|---|---|---|---|---|---|
| Antibiotics (7-Plate Bioassay) | 15.1 | Ducks | 0.18 | 2.718 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Lambs | 0.16 | 2.416 | 300 |
| Flunixin | 5.3 | Bulls | 0.455 | 2.412 | 300 |
| Avermectins | 14.1 | Lambs | 0.16 | 2.256 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Formula-fed veal | 0.108 | 1.631 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Boars/stags | 0.086 | 1.299 | 300 |
| Avermectins | 14.1 | Boars/stags | 0.086 | 1.213 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Mature turkeys | 0.08 | 1.208 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Roaster pigs | 0.052 | 0.785 | 300 |
| Avermectins | 14.1 | Roaster pigs | 0.052 | 0.733 | 300 |
| Carbadox | 12.4 | Roaster pigs | 0.052 | 0.645 | 300 |
| Sulfonamides | 12.0 | Roaster pigs | 0.052 | 0.624 | 300 |
| Trenbolone | 5.1 | Formula fed veal | 0.108 | 0.551 | 300 |

**Table 4** (*continued)*
**Veterinary Drug/Production Class Pairs,**
**Sorted by Sampling Priority Score**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Veterinary Drug or Drug Class* | *Compound Priority Rating (P)* | *Production Class* | *Relative Percent Consumption in 2006(C)* | *Sampling Priority Score (P * C)* | *Unadjusted Number of Samples* |
|---|---|---|---|---|---|
| Zeranol | 5.1 | Formula fed veal | 0.108 | 0.551 | 300 |
| Arsenicals | 6.8 | Mature turkeys | 0.08 | 0.544 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Goats | 0.027 | 0.408 | 300 |
| Avermectins | 14.1 | Goats | 0.027 | 0.381 | 300 |
| Sulfonamides | 12.0 | Goats | 0.027 | 0.324 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Bob veal | 0.015 | 0.227 | 300 |
| Sulfonamides | 12.0 | Bob veal | 0.015 | 0.180 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Heavy calves | 0.011 | 0.166 | 300 |
| Avermectins | 14.1 | Heavy calves | 0.011 | 0.155 | 300 |
| *beta* Agonists | 5.5 | Goats | 0.027 | 0.149 | 300 |
| Sulfonamides | 12.0 | Heavy calves | 0.011 | 0.132 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Mature sheep | 0.007 | 0.106 | 300 |
| Avermectins | 14.1 | Mature sheep | 0.007 | 0.099 | 300 |

**Table 4** (*continued)*
**Veterinary Drug/Production Class Pairs,**
**Sorted by Sampling Priority Score**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Veterinary Drug or Drug Class* | *Compound Priority Rating (P)* | *Production Class* | *Relative Percent Consumption in 2006(C)* | *Sampling Priority Score (P * C)* | *Unadjusted Number of Samples* |
|---|---|---|---|---|---|
| Antibiotics (7-Plate Bioassay) | 15.1 | Non-formula-fed veal | 0.003 | 0.045 | 300 |
| Avermectins | 14.1 | Non-formula-fed veal | 0.003 | 0.042 | 300 |
| Florfenicol | 12.1 | Non-formula-fed veal | 0.003 | 0.036 | 300 |
| Sulfonamides | 12.0 | Non-formula-fed veal | 0.003 | 0.036 | 300 |
| *beta* Agonists | 5.5 | Non-formula-fed veal | 0.003 | 0.017 | 300 |
| Trenbolone | 5.1 | Non-formula-fed veal | 0.003 | 0.015 | 300 |
| Zeranol | 5.1 | Non-formula-fed veal | 0.003 | 0.015 | 300 |
| Antibiotics (7-Plate Bioassay) | 15.1 | Rabbits | 0.001 | 0.015 | 300 |
| Avermectins | 14.1 | Rabbits | 0.001 | 0.014 | 300 |

**Table 5**
**Number of Scheduled Samples for Veterinary Drug/Production Class Pairs**
**2008 NRP, Domestic Scheduled Sampling**

| *Veterinary Drug (or drug class)* | *Production Class* | *Priority Score*[1] | *Number of Samples*[2] | *% Violation*[3] | *% Violation*[4] | *Unadjusted Number of Samples*[5] | *Adjustment for Violations*[6] | *Adjustment for minor species*[7] | *Adjustment for Lab Capacity*[8] | *Adjustment for Production Facilities*[9] | *Final*[10] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antibiotics[11] | Boars/stags | 1.299 | 2,043 | 0.29 | ‹ 1 | 300 | 300 | 300 | 300 | 300 | 300 |
| Antibiotics[11] | Bob veal | 0.227 | 3,628 | 2.89 | › 1 | 300 | 230 | 230 | 230 | 230 | 230 |
| Antibiotics[11] | Bulls | 6.871 | 1,695 | 0.31 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Antibiotics[11] | Dairy cows | 20.959 | 4,547 | 0.00 | › 1 | 300 | 230 | 230 | 230 | 230 | 230 |
| Antibiotics[11] | Ducks | 2.718 | 2,381 | 0.00 | N/A | 300 | 300 | 45 | 45 | 45 | 45 |
| Antibiotics[11] | Formula-fed veal | 1.631 | 4,338 | 0.67 | ‹ 1 | 300 | 300 | 300 | 300 | 300 | 300 |
| Antibiotics[11] | Goats | 0.408 | 1,842 | 0.11 | N/A | 300 | 300 | 90 | 90 | 90 | 90 |
| Antibiotics[11] | Heavy calves | 0.166 | 2,165 | 0.69 | › 1 | 300 | 230 | 95 | 95 | 95 | 95 |
| Antibiotics[11] | Heifers | 107.195 | 4,120 | 0.07 | ‹ 1 | 300 | 300 | 300 | 300 | 300 | 300 |
| Antibiotics[11] | Lambs | 2.416 | 2,532 | 0.04 | N/A | 300 | 300 | 230 | 230 | 230 | 230 |
| Antibiotics[11] | Market hogs | 280.135 | 4,948 | 0.16 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Antibiotics[11] | Mature chickens | 10.479 | 1,993 | 0.05 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Antibiotics[11] | Mature turkeys | 1.208 | 1,184 | 0.03 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Antibiotics[11] | Non-formula-fed veal | 0.045 | 1,648 | 1.94 | › 1 | 300 | 230 | 90 | 90 | 90 | 90 |
| Antibiotics[11] | Rabbits | 0.015 | 1,203 | 3.24 | N/A | 300 | 230 | 45 | 45 | 45 | 45 |
| Antibiotics[11] | Roaster pigs | 0.785 | 867 | 0.81 | ‹ 1 | 300 | 300 | 300 | 300 | 300 | 300 |
| Antibiotics[11] | Sheep | 0.106 | 1,390 | 0.00 | N/A | 300 | 300 | 60 | 60 | 60 | 60 |
| Antibiotics[11] | Sows | 15.221 | 3,196 | 0.44 | ‹ 1 | 300 | 300 | 300 | 230 | 230 | 230 |
| Antibiotics[11] | Steers | 207.157 | 3,133 | 0.03 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| **Totals** | | | | | | **5,700** | | | | | **4,045** |
| | | | | | | | | | | | |
| Arsenicals | Beef cows | 11.920 | 1,325 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Arsenicals | Egg products | 22.875 | 1,494 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Arsenicals | Mature turkeys | 0.544 | 436 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| **Totals** | | | | | | **900** | | | | | **900** |
| | | | | | | | | | | | |
| Avermectins | Boars/stags | 1.213 | 967 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Avermectins | Bulls | 6.416 | 2,884 | 0.31 | ‹ 1 | 300 | 300 | 300 | 300 | 300 | 300 |
| Avermectins | Goats | 0.381 | 2,827 | 1.8 | › 1 | 300 | 230 | 230 | 230 | 230 | 230 |
| Avermectins | Heavy calves | 0.155 | 1,632 | 0.37 | ‹ 1 | 300 | 300 | 135 | 135 | 135 | 135 |
| Avermectins | Lambs | 2.256 | 2,475 | 0.20 | › 1 | 300 | 300 | 300 | 300 | 300 | 300 |
| Avermectins | Mature sheep | 0.099 | 1,117 | 0.36 | › 1 | 300 | 230 | 230 | 230 | 230 | 230 |
| Avermectins | Non-formula-fed veal | 0.042 | 1,081 | 0.37 | › 1 | 300 | 230 | 90 | 90 | 90 | 90 |
| Avermectins | Rabbits | 0.014 | 581 | 0.00 | N/A | 300 | 300 | 45 | 45 | 45 | 45 |
| Avermectins | Roaster pigs | 0.733 | 433 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Avermectins | Sows | 14.213 | 1,747 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| **Totals** | | | | | | **3,000** | | | | | **2,230** |

**Table 5** *(continued)*
**Number of Scheduled Samples for Veterinary Drug/Production Class Pairs**
**2008 NRP, Domestic Scheduled Sampling**

| *Veterinary Drug (or drug class)* | *Production Class* | *Priority Score*[1] | *Number of Samples*[2] | *% Violation*[3] | *% Violation*[4] | *Unadjusted Number of Samples*[5] | *Adjustment for Violations*[6] | *Adjustment for minor species*[7] | *Adjustment for Lab Capacity*[8] | *Adjustment for Production Facilities*[9] | *Final*[10] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| *beta* Agonists | Goats | 0.149 | 0 | N/A | N/A | 300 | 300 | 230 | 230 | 230 | 230 |
| *beta* Agonists | Market hogs | 102.036 | 1,496 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| *beta* Agonists | Non-formula-fed veal | 0.017 | 395 | 0.25 | › 1 | 300 | 230 | 90 | 90 | 90 | 90 |
| **Totals** | | | | | | **900** | | | | | **620** |
| | | | | | | | | | | | |
| Carbadox | Market hogs | 230.045 | 575 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Carbadox | Roaster pigs | 0.645 | 498 | 0.60 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| **Totals** | | | | | | **600** | | | | | **600** |
| | | | | | | | | | | | |
| Chloramphenicol | Bob veal | N/A | 0 | N/A | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Chloramphenicol | Heifers | N/A | 0 | N/A | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Chloramphenicol | Mature chickens | N/A | 488 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Chloramphenicol | Mature turkeys | N/A | 204 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Chloramphenicol | Steers | N/A | 0 | N/A | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| **Totals** | | | | | | **1,500** | | | | | **1,500** |
| | | | | | | | | | | | |
| Florfenicol | Beef cows | 21.211 | 0 | N/A | N/A | 300 | 300 | 300 | 230 | 230 | 230 |
| Florfenicol | Mature chickens | 8.397 | 0 | N/A | N/A | 300 | 300 | 300 | 230 | 230 | 230 |
| Florfenicol | Non-formula-fed veal | 0.036 | 78 | 4.32 | › 1 | 300 | 135 | 90 | 90 | 90 | 90 |
| **Totals** | | | | | | **900** | | | | | **550** |
| | | | | | | | | | | | |
| Flunixin | Bulls | 2.412 | 232 | 0.43 | › 1 | 300 | 135 | 135 | 90 | 90 | 90 |
| Flunixin | Dairy cows | 7.356 | 1,502 | 0.93 | › 1 | 300 | 90 | 90 | 90 | 90 | 90 |
| **Totals** | | | | | | **600** | | | | | **180** |
| | | | | | | | | | | | |
| MGA | Heifers | 21.297 | 1,181 | 0.00 | ‹ 1 | 300 | 300 | 300 | 300 | 300 | 300 |
| **Totals** | | | | | | **300** | | | | | **300** |
| | | | | | | | | | | | |
| Nitrofurans | Dairy cows | N/A | 538 | 0.37 | › 1 | 300 | 230 | 230 | 230 | 230 | 230 |
| Nitrofurans | Market hogs | N/A | 0 | N/A | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Nitrofurans | Sows | N/A | 0 | N/A | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| **Totals** | | | | | | **900** | | | | | **830** |
| Nitroimidazoles | Young chickens | N/A | 0 | N/A | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| **Totals** | | | | | | **300** | | | | | **300** |

**Table 5** *(continued)*
**Number of Scheduled Samples for Veterinary Drug/Production Class Pairs**
**2008 NRP, Domestic Scheduled Sampling**

| *Veterinary Drug (or drug class)* | *Production Class* | *Priority Score*[1] | *Number of Samples*[2] | *% Violation*[3] | *% Violation*[4] | *Unadjusted Number of Samples*[5] | *Adjustment for Violations*[6] | *Adjustment for minor species*[7] | *Adjustment for Lab Capacity*[8] | *Adjustment for Production Facilities*[9] | *Final*[10] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| Sulfonamides | Bob veal | 0.180 | 3,469 | 0.72 | › 1 | 300 | 230 | 230 | 230 | 230 | 230 |
| Sulfonamides | Dairy cows | 16.656 | 2,794 | 0.36 | › 1 | 300 | 230 | 230 | 230 | 230 | 230 |
| Sulfonamides | Egg products | 40.368 | 1,649 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Sulfonamides | Goats | 0.324 | 1,750 | 0.06 | N/A | 300 | 300 | 230 | 230 | 230 | 230 |
| Sulfonamides | Heavy calves | 0.132 | 1,983 | 0.20 | › 1 | 300 | 230 | 135 | 135 | 135 | 135 |
| Sulfonamides | Heifers | 85.188 | 2,223 | 0.04 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Sulfonamides | Market hogs | 222.624 | 4,489 | 0.49 | › 1 | 300 | 230 | 230 | 230 | 230 | 230 |
| Sulfonamides | Mature chickens | 8.328 | 1,460 | 0.00 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Sulfonamides | Non-formula-fed veal | 0.036 | 1,631 | 0.55 | ‹ 1* | 300 | 300 | 90 | 90 | 90 | 90 |
| Sulfonamides | Roaster pigs | 0.624 | 1,028 | 1.65 | › 1 | 300 | 230 | 230 | 230 | 230 | 230 |
| Sulfonamides | Sows | 12.096 | 2,503 | 0.40 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| Sulfonamides | Steers | 164.628 | 3,565 | 0.14 | › 1 | 300 | 230 | 230 | 230 | 230 | 230 |
| Sulfonamides | Young chickens | 533.940 | 2,338 | 0.04 | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| **Totals** | | | | | | **3,900** | | | | | **3,105** |
| | | | | | | | | | | | |
| Thyreostats | Beef cows | 10.343 | 0 | N/A | N/A | 300 | 300 | 300 | 300 | 300 | 300 |
| **Totals** | | | | | | **300** | | | | | **300** |
| | | | | | | | | | | | |
| Trenbolone | Formula fed veal | 0.551 | 1,399 | 0.00 | ‹ 1 | 300 | 300 | 90 | 90 | 90 | 90 |
| Trenbolone | Non-formula-fed veal | 0.015 | 174 | 1.15 | › 1 | 300 | 230 | 90 | 90 | 90 | 90 |
| **Totals** | | | | | | **600** | | | | | **180** |
| | | | | | | | | | | | |
| Zeranol | Formula fed veal | 0.551 | 1,985 | 2.27 | ‹ 1 | 300 | 230 | 90 | 90 | 90 | 90 |
| Zeranol | Non-formula-fed veal | 0.015 | 0 | N/A | N/A | 300 | 300 | 90 | 90 | 90 | 90 |
| **Totals** | | | | | | **600** | | | | | **180** |

[1] For an explanation of this score, see Table 4.
[2] Number of Samples (1997-2006) analyzed by the FSIS Scheduled Sampling Plan.
[3] The percent of samples with residue concentrations exceeding the tolerance or action level (or, for a drug whose use was not permitted in the production class in which it was detected, the percent of samples with any detectable residue), for the 10 year period, 1997-2006.
[4] The percent of samples with residue concentrations exceeding the tolerance or action level (or, for a drug whose use was not permitted in the production class in which it was detected, the percent of samples with any detectable residue) for CY 2006 based on the guideline that one violation within 300 samples represent a violation rate equal or greater than 1%, see Statistical Table in Appendix III. * Incomplete set of data, less than 230 samples were collected and analyzed.

**Table 5** *(continued)*
**Number of Scheduled Samples for Veterinary Drug/Production Class Pairs**
**2008 NRP, Domestic Scheduled Sampling**

[5] The number obtained from the last column of Table 4
[6] If the violation rate for a compound-production class pair was determined to be 0% for the 3 year period (2004-2006), it was rotated out of the program and no samples were scheduled. Note that, SAT can, based on new intelligence or professional judgment, rotate a compound-production class pair back into the FSIS scheduled sampling program at any time.
[7] The following minor species have been rotated out of the FSIS scheduled sampling plan: bison; geese; squab; and ratites.
[8] Change is based on the analytical capabilities of the FSIS Laboratories.
[9] For this adjustment, FSIS considered the total number of production facilities (USDA Inspected Establishments for 2005) for each production class. If the total number of production facilities for a production class was found to be low relative to other production classes, the total number of scheduled samples was reduced for that production class. The number of samples selected for the reduction is based on FSIS professional judgment. If the number of facilities is less than 100, the number of scheduled samples was adjusted down by 1 level (if 300 were assigned initially, decrease to 230 samples).
[10] Final numbers were obtained following an assessment of laboratory capacity, production volume, and violation rate data.
[11] Antibiotics in the 7-plate Bioassay

# Design of the Import Reinspection Scheduled Sampling Plan for Veterinary Drugs

## I. Selecting and Ranking Candidate Compounds

The candidate veterinary drugs of concern selected by members of the Surveillance Advisory Team (SAT) for the import reinspection sampling plan (IRSP) are the same as those listed in the section, *Design of the Domestic Scheduled Sampling Plan for Veterinary Drugs*. Furthermore, in ranking drugs for inclusion in the IRSP, FSIS also employs the ranking scores generated for the domestic scheduled sampling plan. This is because FSIS does not have sufficient historical data on drugs in imported products to predict their violation rates; and because this is reinspection of product already inspected at the country of origination. 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 IRSP.

## II. Prioritizing Candidate Drugs

FSIS selects compounds and compound classes from the list of ranked veterinary drugs. The selection is based purely on their relative public health concern. FSIS and SAT decided that those compounds and compound classes that are a potential public health concern justify their inclusion in the 2008 NRP.

Once the high-priority compounds and compound classes were identified, FSIS applied other practical considerations to determine the compounds FSIS should sample. The principal consideration was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Where the laboratory resources were limited, FSIS decided that more resources should be allocated to test domestic products because imported products have been inspected previously by the country of origination. Based on these considerations, the following compounds are included in the 2008 FSIS scheduled sampling plan.

*Antibiotics:*

At present, the following antibiotics are quantitated using the 7-plate bioassay:
Tetracyclines: tetracycline, oxytetracycline, chlortetracycline (HPLC for identification, quantitation by bioassay).
Aminoglycosides: spectinomycin, hygromycin, streptomycin, dithydrostreptomycin, amikacin, kanamycin, apramycin, gentamycin, neomycin, tobramycin (LC/MS/MS for confirmation, quantitation of streptomycin, dihydrostreptomycin, gentamycin, and neomycin by bioassay).
Macrolides: Lincomycin, pirlymycin, clindamycin, tilmicosin, erythromycin, and tylosin are confirmed by LC/MS/MS. Tilmicosin is also quantitated by HPLC. Erythromycin and tylosin are quantitated by the bioassay.
Beta-Lactams: amoxicillin, ampicillin, cloxacillin, naficillin, cefazolin, DCCD, dicloxacillin, penicillin G, oxacillin, and desacetyl cephaprin (LC/MS/MS for confirmation, quantitation by bioassay for penicillin G and ampicillin).
Fluoroquinolones: ciprofloxacin, norfloxacin, danofloxacin, enrofloxacin, sarafloxacin, difloxacin, desethylene diprofloxacin, desmethyl danofloxacin (LC/MS/MS for confirmation).

*Other Veterinary Drugs:*

- Avermectins in FSIS Multiresidue Method (MRM) (doramectin, ivermectin and moxidectin)**.**
- Sulfonamides (sulfapyridine, sulfadiazine, sulfathiazole, sulfamerazine, sulfamethazine, sulfachloropyridazine, sulfadoxine, sulfamethoxypyridazine, sulfaquinoxaline, sulfadimethoxine,

sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfabromomethazine, sulfasalazine, sulfaethoxypyridazine, sulfaphenazole, and sulfatroxazole)

*Banned Drugs:*

- Chloramphenicol (Single compound method)

## III. Identifying Compound/Production Class (C/PC) Pairs

SAT participants from the FDA identified, for each of the drugs and drug classes to be included in the 2008 NRP, production classes in which they had a concern. The results are presented in Table 6, *Product Classes Considered for Each Drug/Drug Class.* Compound/product class pairs included in the 2008 NRP are designated by a "●". Those compound/product class pairs that are of potential public health concern, but that are not included in the 2008 NRP because of laboratory resource constraints, are marked with a "○".

## IV. Allocation of Sampling Resources

*Egg Products*

The samples for residue analysis for imported egg products are selected in a different manner than the other product classes. In order to establish a history of compliance with the U.S. requirements for each category of egg product, the first ten shipments from individual foreign establishments are subjected to 100 % reinspection. If the egg product is in compliance, the rate of inspection is reduced to a random selection of one reinspection out of eight product lots from each foreign establishment. This reinspection rate continues as long as the product is in compliance.

*Animal Product Classes*

Table 7**,** *Estimated Annual Amount (in pounds) of Product Imported*, lists the estimated amount of all the product classes imported into U.S. and includes the percentage of each of the product classes. The data for the product classes are obtained from the Automated Import Information System. The percent of each product class imported annually is calculated as shown in equation 7:

$$\%\ \text{Product Class Imported } (P_C) = \frac{\text{Amount Product Class Imported}}{\text{Total Product Imported}} \times 100 \qquad \text{Equation 7}$$

The relative sampling priority is obtained by multiplying the percent product class ($P_C$) by the drug scores obtained in Phase I, using equation 8.

$$\text{Relative Sampling Priority} = (P_C) \times \text{Drug Score} \qquad \text{Equation 8}$$

Based on the scores, one of the following sampling options is chosen: (1) high regulatory concern (300 samples/year) and (2) moderate regulatory concern (230 samples/year), low regulatory concern (90 samples/year)**.** These data are presented in Table 10, *Number of Drug Samples/Product Class,* in the column labeled "Number of Samples."

FSIS, in its IRISP, 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 product and are actively exporting to the United States. Processed beef from Australia, Brazil, Canada, Mexico, New Zealand, Uruguay, combination products (varied) and veal from Canada, lamb and meat from Australia, Canada and New Zealand, pork from Canada, Denmark, Mexico and Netherlands, chicken processed and turkey from Canada and Mexico and ducks/geese from Canada and France will not be sampled because the raw materials used are from countries that are eligible to ship raw products to the U.S.

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 veal fresh is imported from only three countries and the amount imported is 0.50 % relative to the total U.S. import, twenty four samples (3 countries X 8 samples) of veal fresh would be taken for each analysis, eight from each country.

The adjusted number of samples is listed in Table 10. 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 10. The numbers in the table 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 is 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 One Percent*

If the amount of an import product class is less than one percent, eight samples per compound/compound class are taken from each country. The relative amounts of veal processed, lamb/mutton processed, goat fresh and processed, turkey fresh and processed, other fowl fresh and processed, varied combination fresh and processed, ratite fresh and guineas/squabs are less than one percent. In addition, if a country is exporting either fresh and processed products or sources all their raw materials from eligible sources then no residue samples are scheduled for processed products from that country. The unadjusted numbers of samples are listed in the columns labeled, "Unadjusted Number of Samples" in Tables 11-26. The adjusted numbers of samples per country/per product class is listed in the column labeled, "Final Number of Samples" in Tables 11-26.

#### *Allocation of Samples in Product Classes Where the Total Volume Imported is Greater Than One Percent*

For major product classes, the number of samples is allocated to each country depending upon the relative amount of product imported from that country. Table 8, *Estimated Annual Amount (in pounds) of Product Imported/Country,* lists the amount of product imported from each country. The percent of a

product class imported from a country is calculated as follows and is in Table 9, *Relative Annual Amount of Product Imported/Country.*

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

$$\frac{\text{Amount of Product Class from Country}}{\text{Total Amount of Product Class}} \times 100 \qquad \text{Equation 9}$$

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:

$$\text{Unadjusted Number of Samples per Country } (U_{C/S}) = \text{Total Number of Samples} \times (P_{C/C})/100 \quad \ldots\text{Equation 10}$$

This is indicated in the column labeled "Unadjusted Number of Samples ($U_{C/S}$)," in Tables 11-26.

After determining the number of samples required from each country, each country with less than eight samples is assigned a minimum of eight samples. This is indicated in the column labeled "Adjustment #1" in Tables 11-26. 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 had to be made, so that the total number of samples would be within an allocated number. This adjustment is made only to those countries from which greater than eight samples are to be taken. This adjustment is accomplished using the following equation:

$$\text{Number of Samples after Adjustment \#2} = (U_{C/S}) - \frac{(N \times P_{C/C})}{(P_{T/C})} \qquad \text{Equation 11}$$

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

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 11-26 in the column labeled "Final Adj.#."

*Notes:*

The candidate veterinary drugs of concern selected by members of the SAT for the IRSP are the same as those listed in the section, *Design of the Domestic Scheduled Sampling Plan for Veterinary Drugs.*

The number of samples/product class/country is discussed in the section, *Design of the Import Scheduled Sampling Plan for Pesticides.*

**Table 6**
**Product Classes Considered for Each Drug/Drug Class**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| DRUG→ | AB | AVM | AS | ß-A | CHMP | FLNX | FLF | NTM | SLF | THY | ZRL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Beef, fresh | ● | ● | | | ● | ● | ● | | ● | | |
| Beef, processed | ○ | ● | | | ○ | ○ | | | ● | | |
| Horse, fresh | ● | | | | | | | | ● | | |
| Chicken, fresh | ● | | ● | | ● | | | ● | ○ | | |
| Chicken, processed | ○ | ○ | ● | | ○ | | | ○ | ○ | | |
| Goat, fresh | ○ | ● | | | | | | | | | |
| Lamb/Mutton fresh | ○ | ● | | | | | | | ○ | | |
| Lamb/Mutton processed | ○ | | | | | | | | ○ | | |
| Other fowl fresh | ● | | | | | | | | | | |
| Pork, fresh | ○ | | ● | ● | | | | | ● | | |
| Pork, processed | ○ | | ○ | ○ | | | | | ● | | |
| Turkey, fresh | ● | | ● | | ● | | | | ● | | |
| Turkey, processed | ○ | | ● | | ○ | | | | ● | | |
| Veal, fresh | ● | ● | | ● | ● | ○ | | | ● | ● | ● |
| Veal, processed | ○ | ○ | | ○ | ○ | ○ | | | ○ | ○ | ○ |
| Varied combination fresh | ● | | | | | | | | ● | | |
| Varied combination, processed | ○ | | | | | | | | ● | | |

**Key**
● = Compound/product class sampled in the 2008 FSIS IRSP
○ = Compound/product class pair of regulatory concern but not included in the plan because of resources
AB=Antibiotics;AVM=Avermectins, AS=Arsenicals; ß-A= beta agonist; CHMP=Chloramphenicol; RCT=Ractopamine; THY=Thyreostats; NTF= Nitrofurans; NTM=Nitroimidazoles; SLF=Sulfonamides; ZRL=Zeralenol

**Table 7**
**Estimated Annual Amount of Product Imported**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| PRODUCT | PRODUCT IMPORTED IN POUNDS | PRODUCT IMPORTED |
|---|---|---|
| Beef, fresh | 2095899474 | 56.392% |
| Beef, processed | 243208195 | 6.544% |
| Pork, fresh | 840188103 | 22.69% |
| Pork, processed | 187129415 | 1.674% |
| Veal, fresh | 64058600 | 1.724% |
| Veal, processed | 28721 | 01% |
| Lamb/Mutton, fresh | 174066710 | 4.683% |
| Lamb/Mutton, processed | 226440 | 09% |
| Goat, fresh | 25695283 | 0.691% |
| Goat , processed | 0 | 00% |
| Turkey , fresh | 16399306 | 0.441% |
| Ratite, fresh | 349212 | 08% |
| Chicken, fresh | 67886794 | 1.827% |
| Chicken, processed | 85685882 | 2.305% |
| Turkey, processed | 12681450 | 0.341% |
| Other Fowl, fresh | 4937489 | 0.133% |
| Other Fowl, processed | 96772 | 03% |
| Varied combination, fresh | 38846 | 01% |
| Varied combination, processed | 20158957 | 0.537% |
| Guineas/squabs | 178 | 4.789E-08 |
| **Total/country** | 3838735828 | 100% |

**Table 8**
**Estimated Annual Amount of Product Imported/Country**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **PRODUCTION CLASS** | Argentina | Australia | Belgium | Brazil | Canada |
|---|---|---|---|---|---|
| Beef, fresh | 0 | 666538313 | | 35979 | 680038567 |
| Beef, processed | 48033972 | 2964410 | | 148727367 | 22700360 |
| Pork, fresh | 0 | 56344 | | | 734632264 |
| Pork, processed | | 0 | 899487 | | 535567 |
| Veal, fresh | | 11929649 | | | 2803551 |
| Veal, processed | | 0 | | | 28721 |
| Lamb/Mutton, fresh | | 127884250 | | | 421,148 |
| Lamb/Mutton, processed | | 213269.00 | | | 6,298 |
| Goat, fresh | | 24857297 | | | |
| Turkey , fresh | | | | | 16398204 |
| Ratite, fresh | | 186284 | | | |
| Chicken, fresh | | | | | 67874387 |
| Chicken, processed | | | | | 71734439 |
| Turkey, processed | | | | | 5649718 |
| Other Fowl, fresh | | | | | 4721723 |
| Other Fowl, processed | | | | | 65803 |
| Varied combination, fresh | | | | | 38846 |
| Varied combination, processed | | 14128 | | | 14776045 |
| Guineas/squabs | | | | | 178 |
| Total | 48033972 | 96067944 | 899487 | 148763346 | 1647657719 |

**Table 8** (*continued)*
**Estimated Annual Amount of Product Imported/Country**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **PRODUCTION CLASS** | Chile | Costa Rica | Croatia | Denmark | Finland |
|---|---|---|---|---|---|
| Beef, fresh | 177645 | 14088111 | | | |
| Beef, processed | | | | | |
| Pork, fresh | 1302363 | | | 83836979 | 2732228 |
| Pork, processed | | | 535567 | 18649715 | |
| Veal, fresh | | | | | |
| Veal, processed | | | | | |
| Lamb/Mutton, fresh | 8 | | | | |
| Lamb/Mutton, processed | | | | | |
| Goat, fresh | | | | | |
| Turkey , fresh | | | | | |
| Ratite, fresh | | | | | |
| Chicken, fresh | | | | | |
| Chicken, processed | | | | | |
| Turkey, processed | | | | | |
| Other Fowl, fresh | | | | | |
| Other Fowl, processed | | | | | |
| Varied combination, fresh | | | | | |
| Varied combination, processed | | | | | |
| Guineas/squabs | | | | | |
| Total | 1480016 | 14088111 | 535567 | 102486694 | 2732228 |

**Table 8** (*continued)*
**Estimated Annual Amount of Product Imported/Country**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **PRODUCTION CLASS** | France | Germany | Honduras | Hungary | Iceland | Ireland |
|---|---|---|---|---|---|---|
| Beef, fresh | | | 916984 | | | |
| Beef, processed | | | | | | |
| Pork, fresh | | | | | | 4229911 |
| Pork, processed | 865 | 1131154 | | 1319251 | | |
| Veal, fresh | | | | | | |
| Veal, processed | | | | | | |
| Lamb/Mutton, fresh | | | | | 128371 | |
| Lamb/Mutton, processed | | | | | | |
| Goat, fresh | | | | | | |
| Turkey , fresh | | | | | | |
| Ratite, fresh | | | | | | |
| Chicken, fresh | | | | | | |
| Chicken, processed | | | | | | |
| Turkey, processed | | | | | | |
| Other Fowl, fresh | 215766 | | | | | |
| Other Fowl, processed | 30969 | | | | | |
| Varied combination, fresh | | | | | | |
| Varied combination, processed | | | | | | |
| Guineas/squabs | | | | | | |
| Total | 247600 | 1131154 | 916984 | 1319251 | 128371 | 4229911 |

**Table 8** (*continued)*
**Estimated Annual Amount of Product Imported/Country**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **PRODUCTION CLASS** | Israel | Italy | Japan | Mexico | Netherland | New Zealand |
|---|---|---|---|---|---|---|
| Beef, fresh | | | 81567 | 29843153 | | 399723465 |
| Beef, processed | | | | 6087736 | | 3008816 |
| Pork, fresh | | | | 3157420 | 5968414 | 114669 |
| Pork, processed | | 7986975 | | 11175793 | 1828487 | |
| Veal, fresh | | | | | | 24093500 |
| Veal, processed | | | | | | |
| Lamb/Mutton, fresh | | | | | | 45632833 |
| Lamb/Mutton, processed | | | | | | 108965 |
| Goat, fresh | | | | 39338 | | 798648 |
| Turkey , fresh | | | | 1102 | | |
| Ratite, fresh | | | | | | 114669 |
| Chicken, fresh | | | | 12407 | | |
| Chicken, processed | 357312 | | | 13594131 | | |
| Turkey, processed | 144012 | | | 6887720 | | |
| Other Fowl, fresh | | | | | | |
| Other Fowl, processed | | | | | | |
| Varied combination, fresh | | | | | | |
| Varied combination, processed | | | | 5169643 | | |
| Guineas/squabs | | | | | | |
| Total | 501324 | 7986975 | 81567 | 75968443 | 7796901 | 473595565 |

**Table 8** (*continued)*
**Estimated Annual Amount of Product Imported/Country**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| PRODUCTION CLASS | Nicaragua | N.Ireland | Poland | Spain | Sweden | UK | Uruguay |
|---|---|---|---|---|---|---|---|
| Beef, fresh | 55396017 | | | | | | 249059673 |
| Beef, processed | | | | | | | 11685535 |
| Pork, fresh | | 1891930 | | | 888357 | 1377224 | |
| Pork, processed | | | 16565778 | 1583028 | | | |
| Veal, fresh | | | | | | | |
| Veal, processed | | | | | | | |
| Lamb/Mutton, fresh | | | | | | | |
| Lamb/Mutton, processed | | | | | | | |
| Goat, fresh | | | | | | | |
| Turkey , fresh | | | | | | | |
| Ratite, fresh | | | | | | | |
| Chicken, fresh | | | | | | | |
| Chicken, processed | | | | | | | |
| Turkey, processed | | | | | | | |
| Other Fowl, fresh | | | | | | | |
| Other Fowl, processed | | | | | | | |
| Varied combination, fresh | | | | | | | |
| Varied combination, processed | | | | | | | |
| Guineas/squabs | | | | | | | |
| Total | 55396017 | 1891930 | 16565778 | 1583028 | 888357 | 1377224 | 260745208 |

**Table 9**
**Relative Annual Amount of Product Imported/Country**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Production Class | Argentina | Australia | Belgium | Brazil | Canada | Chile |
|---|---|---|---|---|---|---|
| Beef, fresh | 0 | 31.80 | 0 | 0 | 32.45 | 0.01 |
| Beef, processed | 19.75 | 1.22 | 0 | 61.15 | 9.33 | 0 |
| Pork, fresh | 0 | 0.01 | 0 | 0 | 87.12 | 0.15 |
| Pork, processed | 0 | 0 | 1.45 | 0 | 0.86 | 0 |
| Veal, fresh | 0 | 18.62 | 0 | 0 | 43.77 | 0 |
| Veal, processed | 0 | 0 | 0 | 0 | 100 | 0 |
| Lamb/Mutton, fresh | 0 | 73.47 | 0 | 0 | 0.24 | 0 |
| Lamb/Mutton, processed | 0 | 64.92 | 0 | 0 | 1.92 | 0 |
| Goat, fresh | 0 | 96.74 | 0 | 0 | 0 | 0 |
| Turkey , fresh | 0 | 0 | 0 | 0 | 99.99 | 0 |
| Ratite, fresh | 0 | 61.90 | 0 | 0 | 0 | 0 |
| Chicken, fresh | 0 | 0 | 0 | 0 | 99.98 | 0 |
| Chicken, processed | 0 | 0 | 0 | 0 | 83.72 | 0 |
| Turkey, processed | 0 | 0 | 0 | 0 | 44.55 | 0 |
| Other Fowl, fresh | 0 | 0 | 0 | 0 | 95.63 | 0 |
| Other Fowl, processed | 0 | 0 | 0 | 0 | 68.00 | 0 |
| Varied combination, fresh | 0 | 0 | 0 | 0 | 100 | 0 |
| Varied combination, processed | 0 | 0.07 | 0 | 0 | 74.03 | 0 |

**Table 9** *(continued)*
**Relative Annual Amount of Product Imported/Country**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Production Class | Costa Rica | Croatia | Denmark | Finland | France | Germany |
|---|---|---|---|---|---|---|
| Beef, fresh | 0.67 | 0 | 0 | 0 | 0 | 0 |
| Beef, processed | 0 | 0 | 0 | 0 | 0 | 0 |
| Pork, fresh | 0 | 0 | 9.94 | 0.32 | 0 | 0 |
| Pork, processed | 0 | 0.86 | 29.98 | 0 | 0.001 | 1.82 |
| Veal, fresh | 0 | 0 | 0 | 0 | 0 | 0 |
| Veal, processed | 0 | 0 | 0 | 0 | 0 | 0 |
| Lamb/Mutton, fresh | 0 | 0 | 0 | 0 | 0 | 0 |
| Lamb/Mutton, processed | 0 | 0 | 0 | 0 | 0 | 0 |
| Goat, fresh | 0 | 0 | 0 | 0 | 0 | 0 |
| Turkey, fresh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ratite, fresh | 0 | 0 | 0 | 0 | 0 | 0 |
| Chicken, fresh | 0 | 0 | 0 | 0 | 0 | 0 |
| Chicken, processed | 0 | 0 | 0 | 0 | 0 | 0 |
| Turkey, processed | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Fowl, fresh | 0 | 0 | 0 | 0 | 4.37 | 0 |
| Other Fowl, processed | 0 | 0 | 0 | 0 | 32.00 | 0 |
| Varied combination, fresh | 0 | 0 | 0 | 0 | 0 | 0 |
| Varied combination, processed | 0 | 0 | 0 | 0 | 0 | 0 |

**Table 9** *(continued)*
**Relative Annual Amount of Product Imported/Country**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Production Class | Honduras | Hungary | Iceland | Ireland | Israel | Italy | Japan |
|---|---|---|---|---|---|---|---|
| Beef, fresh | 0.04 | 0 | 0 | 0 | 0 | 0 | 1.71E+12 |
| Beef, processed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pork, fresh | 0 | 0 | 0 | 0.50 | 0 | 0 | 0 |
| Pork, processed | 0 | 2.12 | 0 | 0 | 0 | 12.84 | 0 |
| Veal, fresh | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Veal, processed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lamb/Mutton, fresh | 0 | 0 | 0.07 | 0 | 0 | 0 | 0 |
| Lamb/Mutton, processed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Goat, fresh | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Turkey , fresh | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ratite, fresh | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chicken, fresh | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chicken, processed | 0 | 0 | 0 | 0 | 0.42 | 0 | 0 |
| Turkey, processed | 0 | 0 | 0 | 0 | 1.14 | 0 | 0 |
| Other Fowl, fresh | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Fowl, processed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Varied combination, fresh | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Varied combination, processed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Table 9** *(continued)*
**Relative Annual Amount of Product Imported/Country**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Production Class | Mexico | Netherlands | New Zealand | Nicaragua | N.Ireland |
|---|---|---|---|---|---|
| Beef, fresh | 1.42 | 0 | 19.07 | 2.64 | 0 |
| Beef, processed | 2.50 | 0 | 1.24 | 0 | 0 |
| Pork, fresh | 0.37 | 0.71 | 0.01 | 0 | 0.22 |
| Pork, processed | 17.96 | 2.94 | 0 | 0 | 0 |
| Veal, fresh | 0 | 0 | 37.61 | 0 | 0 |
| Veal, processed | 0 | 0 | 0 | 0 | 0 |
| Lamb/Mutton, fresh | 0 | 0 | 26.22 | 0 | 0 |
| Lamb/Mutton, processed | 0 | 0 | 33.17 | 0 | 0 |
| Goat, fresh | 0.15 | 0 | 3.11 | 0 | 0 |
| Turkey , fresh | 0.01 | 0 | 0 | 0 | 0 |
| Ratite, fresh | 0 | 0 | 38.10 | 0 | 0 |
| Chicken, fresh | 0.02 | 0 | 0 | 0 | 0 |
| Chicken, processed | 15.87 | 0 | 0 | 0 | 0 |
| Turkey, processed | 54.31 | 0 | 0 | 0 | 0 |
| Other Fowl, fresh | 0 | 0 | 0 | 0 | 0 |
| Other Fowl, processed | 0 | 0 | 0 | 0 | 0 |
| Varied combination, fresh | 0 | 0 | 0 | 0 | 0 |
| Varied combination, processed | 25.90 | 0 | 0.57 | 0 | 0 |

**Table 9** *(continued)*
**Relative Annual Amount of Product Imported/Country**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Production Class | Poland | Spain | Sweden | UK |
|---|---|---|---|---|
| Beef, fresh | 0 | 0 | 0 | 0 |
| Beef, processed | 0 | 0 | 0 | 0 |
| Pork, fresh | 0 | 0 | 0 | 0 |
| Pork, processed | 0 | 0 | 0.10 | 0.16 |
| Veal, fresh | 26.63 | 2.54 | 0 | 0 |
| Veal, processed | 0 | 0 | 0 | 0 |
| Lamb/Mutton, fresh | 0 | 0 | 0 | 0 |
| Lamb/Mutton, processed | 0 | 0 | 0 | 0 |
| Goat, fresh | 0 | 0 | 0 | 0 |
| Turkey , fresh | 0 | 0 | 0 | 0 |
| Ratite, fresh | 0 | 0 | 0 | 0 |
| Chicken, fresh | 0 | 0 | 0 | 0 |
| Chicken, processed | 0 | 0 | 0 | 0 |
| Turkey, processed | 0 | 0 | 0 | 0 |
| Other Fowl, fresh | 0 | 0 | 0 | 0 |
| Other Fowl, processed | 0 | 0 | 0 | 0 |
| Varied combination, fresh | 0 | 0 | 0 | 0 |
| Varied combination, processed | 0 | 0 | 0 | 0 |

**Table 10**
**Number of Drug Samples/Product Class**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| No of Countries | Production Class | Drug | % Product Imported | Score | RSP | No. of Samples | Unadjusted No. of Samples | Final No of Samples |
|---|---|---|---|---|---|---|---|---|
| 11 | Beef, fresh | Antibiotics | 56.4 | 15 | 819 | 300 | 300 | 300 |
| 1 | Chicken, fresh | Antibiotics | 1.8 | 15 | 27 | 16 | 16 | 16 |
| 0 | Horse, fresh | Antibiotics | 0 | 15 | 0 | 8 | 8 | 8 |
| 12 | Pork, fresh | Antibiotics | 20.6 | 15 | 310 | 230 | 230 | 230 |
| 2 | Turkey, fresh | Antibiotics | 0.43 | 15 | 6 | 90 | 16 | 16 |
| 1 | Varied combination, fresh | Antibiotics | 0.006 | 15 | 0 | 8 | 8 | 8 |
| 3 | Veal, fresh | Antibiotics | 1.67 | 15 | 25 | 90 | 90 | 90 |
| 2 | Other fowl, fresh | Antibiotics | 0.13 | 15 | 1.95 | 16 | 16 | 16 |
| 2 | Other fowl, processed | Antibiotics | 0 | 15 | 0.045 | 16 | 16 | 0 |
| 1 | Chicken, fresh | Arsenic | 1.8 | 4.5 | 8 | 16 | 16 | 16 |
| 3 | Chicken, processed | Arsenic | 2.2 | 4.5 | 10 | 8 | 8 | 8 |
| 12 | Pork, fresh | Arsenic | 20.6 | 4.5 | 93 | 90 | 90 | 96 |
| 2 | Turkey , fresh | Arsenic | 0.43 | 4.5 | 2 | 16 | 16 | 16 |
| 3 | Turkey, processed | Arsenic | 0.33 | 4.5 | 1 | 24 | 24 | 8 |
| 11 | Beef, fresh | Avermectins | 56.40 | 14 | 764 | 300 | 300 | 300 |
| 7 | Beef, processed | Avermectins | 6.34 | 14 | 89 | 60 | 60 | 60 |
| 2 | Goat, fresh | Avermectins | 0.7 | 14 | 10 | 90 | 24 | 24 |
| 5 | Lamb/Mutton, fresh | Avermectins | 4.50 | 14 | 63 | 90 | 90 | 90 |
| 3 | Lamb/Mutton, processed | Avermectins | 0.010 | 14 | 0 | 90 | 32 | 0 |
| 3 | Veal, fresh | Avermectins | 1.67 | 14 | 23 | 90 | 90 | 90 |
| 12 | Pork, fresh | B-agonist | 1.60 | 2.75 | 4 | 90 | 90 | 96 |
| 3 | Veal, fresh | B-agonist | 1.67 | 2.75 | 5 | 90 | 90 | 90 |

**Table 10** (*continued)*
**Number of Drug Samples/Product Class**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| No of Countries | Production Class | Drug | % Product Imported | Score | RSP | No. of Samples | Unadjusted No. of Samples | Final No of Samples |
|---|---|---|---|---|---|---|---|---|
| 11 | Beef, fresh | Chloramphenicol | 56.4 | 0 | 0 | 96 | 96 | 96 |
| 1 | Chicken, fresh | Chloramphenicol | 1.80 | 0 | 0 | 16 | 16 | 16 |
| 2 | Turkey , fresh | Chloramphenicol | 0.43 | 0 | 0 | 16 | 16 | 16 |
| 3 | Veal, fresh | Chloramphenicol | 1.67 | 0 | 0 | 90 | 90 | 90 |
| 11 | Beef, fresh | Florfenicol | 56.4 | 0 | 0 | 88 | 88 | 88 |
| 11 | Beef, fresh | Flunixin | 56.4 | 7 | 382 | 141 | 88 | 88 |
| 1 | Chicken, fresh | Nitroimidazoles | 1.80 | 4.5 | 8 | 16 | 16 | 16 |
| 11 | Beef, fresh | Sulfonamides | 56.4 | 6.34 | 346 | 300 | 300 | 300 |
| 7 | Beef, processed | Sulfonamides | 6.34 | 12 | 76 | 60 | 60 | 60 |
| 0 | Horse, fresh | Sulfonamides | 0 | 12 | 0 | 8 | 8 | 8 |
| 12 | Pork, fresh | Sulfonamides | 20.65 | 12 | 248 | 230 | 230 | 230 |
| 12 | Pork, processed | Sulfonamides | 4.57 | 12 | 55 | 64 | 64 | 64 |
| 2 | Turkey , fresh | Sulfonamides | 0.43 | 12 | 5 | 90 | 16 | 16 |
| **3** | Turkey, processed | Sulfonamides | 0.33 | 12 | 4 | 24 | 24 | 8 |
| 1 | Varied combination, fresh | Sulfonamides | 0.006 | 12 | 0 | 8 | 8 | 8 |
| 3 | Varied combination, processed | Sulfonamides | 0.50 | 12 | 6 | 90 | 32 | 16 |
| 3 | Veal, fresh | Sulfonamides | 1.67 | 12 | 20 | 90 | 90 | 90 |
| 1 | Veal, processed | Sulfonamides | 0.001 | 12 | 0 | 90 | 24 | 0 |
| 3 | Veal, fresh | Thyreostats | 1.67 | 7 | 12 | 90 | 90 | 90 |
| 3 | Veal, fresh | Zeranol | 1.67 | 12 | 20 | 90 | 90 | 90 |
| | **Total** | | | | | **3525** | **3076** | **2968** |

**Table 11**
**Number of Samples/Product Class – Pork, Processed**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Sulfonamides | % product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Final No of Samples |
|---|---|---|---|---|
| Belgium | 1.45 | 1 | 8 | 8 |
| Canada | 0.86 | 1 | 0 | 0[1] |
| Croatia | 0.86 | 1 | 8 | 8 |
| Denmark | 30.00 | 27 | 0 | 0[1] |
| France | 0.01 | 0 | 8 | 8 |
| Germany | 1.82 | 2 | 8 | 8 |
| Hungary | 2.12 | 2 | 8 | 8 |
| Italy | 13.00 | 12 | 8 | 8 |
| Mexico | 18.00 | 16 | 0 | 0[1] |
| Netherlands | 3.00 | 3 | 0 | 0[1] |
| Poland | 27.00 | 24 | 8 | 8 |
| Spain | 2.70 | 2 | 8 | 8 |
| **Total** | **100** | **91** | **64** | 64 |

**Table 12**
**Number of Samples/Product Class – Mutton/Lamb, Processed**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Avermectins | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Final Adj |
|---|---|---|---|---|
| Australia | 65 | 8 | 0 | 0[1] |
| Canada | 1.9 | 8 | 0 | 0[1] |
| New Zealand | 33.2 | 8 | 0 | 0[1] |
| **Total** | **100** | **24** | **0** | **0** |

**Table 13**
**Number of Samples/Product Class – Turkey Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Antibiotics | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Final Adj |
|---|---|---|---|---|
| Canada | 99.999 | 8 | 8 | 8 |
| Mexico | 0.001 | 8 | 8 | 8 |
| **Total** | 100 | 16 | 16 | 16 |
| **Sulfonamides** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Canada | 99.999 | 8 | 8 | 8 |
| Mexico | 0.001 | 8 | 8 | 8 |
| **Total** | 100 | 16 | 16 | 16 |
| **Chloramphenicol** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Canada | 99.999 | 8 | 8 | 8 |
| Mexico | 0.001 | 8 | 8 | 8 |
| **Total** | 100 | 16 | 16 | 16 |
| **Arsenicals** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Canada | 99.999 | 8 | 8 | 8 |
| Mexico | 0.001 | 8 | 8 | 8 |
| **Total** | 100 | 16 | 16 | 16 |

**Table 14**
**Number of Samples/Product Class – Turkey Processed**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Arsenicals** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
|---|---|---|---|---|
| Canada | 44.55 | 8 | 0 | 0[1] |
| Israel | 1.13 | 8 | 8 | 8 |
| Mexico | 54.32 | 8 | 0 | 0[1] |
| **Total** | **100** | **24** | **8** | **8** |
| **Sulfonamides** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Canada | 44.55 | 8 | 0 | 0[1] |
| Israel | 1.13 | 8 | 8 | 8 |
| Mexico | 54.32 | 8 | 0 | 0[1] |
| **Total** | **100** | **24** | **8** | **8** |

**Table 15**
**Number of Samples/Product Class – Varied Combination Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Antibiotics** | **%Product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust # 1** | **Final Adj** |
|---|---|---|---|---|
| Canada | **100** | **8** | **8** | **8** |
| **Sulfonamides** | **%Product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust # 1** | **Final Adj** |
| Canada | **100** | **8** | **8** | **8** |

**Table 16**
**Number of Samples/Product Class – Horse Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Antibiotics** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
|---|---|---|---|---|
| Canada | **100.00** | **8** | **8** | **8** |
| **Sulfonamides** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Canada | **100.00** | **8** | **8** | **8** |

**Table 17**
**Number of Samples/Product Class – Other Fowl Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Antibiotics** | **%Product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust # 1** | **Final Adj** |
|---|---|---|---|---|
| Canada | 96 | 8 | 8 | 8 |
| France | 4 | 8 | 8 | 8 |
| **Total** | **100** | **16** | **16** | **16** |

**Table 18**
**Number of Samples/Product Class – Varied Combination Processed**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Sulfonamides** | **%Product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust # 1** | **Final Adj** |
|---|---|---|---|---|
| Australia | 0.07 | 8 | 8 | 8 |
| Canada | 74 | 8 | 0 | 0[1] |
| Mexico | 25.9 | 8 | 8 | 8 |
| New Zealand | 0.57 | 8 | 8 | 8 |
| **Total** | **100** | **32** | **24** | **24** |

**Table 19**
**Number of Samples/Product Class – Veal Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Antibiotics** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
|---|---|---|---|---|
| Australia | 19 | 17.1 | 13 | 13 |
| Canada | 44 | 39.6 | 38 | 38 |
| New Zealand | 37 | 33.3 | 39 | 39 |
| **Total** | **100** | **90** | **90** | **90** |
| **Avermectins** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Australia | 19 | 17.1 | 13 | 13 |
| Canada | 44 | 39.6 | 38 | 38 |
| New Zealand | 37 | 33.3 | 39 | 39 |
| **Total** | 100 | 90 | 90 | 90 |
| **B-agonist** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Australia | 19 | 17.1 | 13 | 13 |
| Canada | 44 | 39.6 | 38 | 38 |
| New Zealand | 37 | 33.3 | 39 | 38 |
| **Total** | **100** | **90** | **90** | **90** |
| **Sulfonamides** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Australia | 19 | 17.1 | 13 | 13 |
| Canada | 44 | 39.6 | 38 | 38 |
| New Zealand | 37 | 33.3 | 39 | 39 |
| **Total** | **100** | **90** | **90** | **90** |
| **Thyreostats** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Australia | 19 | 17.1 | 13 | 13 |
| Canada | 44 | 39.6 | 38 | 38 |
| New Zealand | 37 | 33.3 | 39 | 39 |
| **Total** | **100** | **90** | **90** | **90** |
| **Zeranol** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Australia | 19 | 17.1 | 13 | 13 |
| Canada | 44 | 39.6 | 38 | 38 |
| New Zealand | 37 | 33.3 | 39 | 39 |
| **Total** | **100** | **90** | **90** | **90** |
| **Chloramphenicol** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Final Adj** |
| Australia | 19 | 17.1 | 13 | 13 |
| Canada | 44 | 39.6 | 38 | 38 |
| New Zealand | 37 | 33.3 | 39 | 39 |
| **Total** | **100** | **90** | **90** | **90** |

**Table 20**
**Number of Samples/Product Class – Other Fowl Processed**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Antibiotics** | **%Product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust # 1** | **Final Adj** |
|---|---|---|---|---|
| Canada | **100** | **8** | **8** | **0**[1] |

**Table 21**
**Number of Samples/Product Class – Beef, Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Antibiotics** | **%product (Pc/c)** | **Uc/s=300*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
|---|---|---|---|---|---|---|
| Australia | 32 | 96 | 0 | 96 | 82 | 82 |
| Brazil | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Canada | 32 | 96 | 0 | 96 | 82 | 82 |
| Chile | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Costa Rica | 0.7 | 2.1 | 8 | 8 | 8 | 8 |
| Honduras | 0.04 | 0.12 | 8 | 8 | 8 | 8 |
| Japan | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Mexico | 1.5 | 4.5 | 8 | 8 | 8 | 8 |
| New Zealand | 19 | 57 | 0 | 57 | 49 | 49 |
| Nicaragua | 2.6 | 7.8 | 8 | 8 | 8 | 8 |
| Uruguay | 12 | 36 | 0 | 36 | 31 | 31 |
| **Total** | **99.843** | **300** | **56** | **341** | **300** | **300** |
| **Sulfonamides** | **%product (Pc/c)** | **Uc/s=300*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
| Australia | 32 | 96 | 0 | 96 | 82 | 82 |
| Brazil | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Canada | 32 | 96 | 0 | 96 | 82 | 82 |
| Chile | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Costa Rica | 0.7 | 2.1 | 8 | 8 | 8 | 8 |
| Honduras | 0.04 | 0.12 | 8 | 8 | 8 | 8 |
| Japan | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Mexico | 1.5 | 4.5 | 8 | 8 | 8 | 8 |
| New Zealand | 19 | 57 | 0 | 57 | 49 | 49 |
| Nicaragua | 2.6 | 7.8 | 8 | 8 | 8 | 8 |
| Uruguay | 12 | 36 | 0 | 36 | 31 | 31 |
| **Total** | **99.843** | **300** | **56** | **341** | **300** | **300** |
| **Avermectins** | **%product (Pc/c)** | **Uc/s=300*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
| Australia | 32 | 96 | 0 | 96 | 82 | 82 |
| Brazil | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Canada | 32 | 96 | 0 | 96 | 82 | 82 |
| Chile | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Costa Rica | 0.7 | 2.1 | 8 | 8 | 8 | 8 |
| Honduras | 0.04 | 0.12 | 8 | 8 | 8 | 8 |
| Japan | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Mexico | 1.5 | 4.5 | 8 | 8 | 8 | 8 |
| New Zealand | 19 | 57 | 0 | 57 | 49 | 49 |
| Nicaragua | 2.6 | 7.8 | 8 | 8 | 8 | 8 |
| Uruguay | 12 | 36 | 0 | 36 | 31 | 31 |
| **Total** | **99.843** | **300** | **56** | **341** | **300** | **300** |

**Table 21***(continued)*
**Number of Samples/Product Class – Beef, Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Chloramphenicol** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
|---|---|---|---|---|---|---|
| Australia | 32 | 28.8 | 0 | 29 | 12 | 12 |
| Brazil | 0.001 | 0.0009 | 8 | 8 | 8 | 8 |
| Canada | 32 | 28.8 | 0 | 29 | 12 | 12 |
| Chile | 0.001 | 0.0009 | 8 | 8 | 8 | 8 |
| Costa Rica | 0.7 | 0.63 | 8 | 8 | 8 | 8 |
| Honduras | 0.04 | 0.036 | 8 | 8 | 8 | 8 |
| Japan | 0.001 | 0.0009 | 8 | 8 | 8 | 8 |
| Mexico | 1.5 | 1.35 | 8 | 8 | 8 | 8 |
| New Zealand | 19 | 17.1 | 0 | 17 | 8 | 8 |
| Nicaragua | 2.6 | 2.34 | 8 | 8 | 8 | 8 |
| Uruguay | 12 | 10.8 | 0 | 10 | 8 | 8 |
| **Total** | **99.843** | **90** | **56** | **141** | **96** | **96** |
| **Florfenicol** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
| Australia | 32 | 28.8 | 0 | 29 | 12 | 8 |
| Brazil | 0.001 | 0.0009 | 8 | 8 | 8 | 8 |
| Canada | 32 | 28.8 | 0 | 29 | 12 | 8 |
| Chile | 0.001 | 0.0009 | 8 | 8 | 8 | 8 |
| Costa Rica | 0.7 | 0.63 | 8 | 8 | 8 | 8 |
| Honduras | 0.04 | 0.036 | 8 | 8 | 8 | 8 |
| Japan | 0.001 | 0.0009 | 8 | 8 | 8 | 8 |
| Mexico | 1.5 | 1.35 | 8 | 8 | 8 | 8 |
| New Zealand | 19 | 17.1 | 0 | 17 | 8 | 8 |
| Nicaragua | 2.6 | 2.34 | 8 | 8 | 8 | 8 |
| Uruguay | 12 | 10.8 | 0 | 10 | 8 | 8 |
| **Total** | **99.843** | **90** | **56** | **141** | **96** | **88** |
| **Flunixin** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
| Australia | 32 | 28.8 | 0 | 29 | 8 | 8 |
| Brazil | 0.001 | 0.0009 | 8 | 8 | 8 | 8 |
| Canada | 32 | 28.8 | 0 | 29 | 8 | 8 |
| Chile | 0.001 | 0.0009 | 8 | 8 | 8 | 8 |
| Costa Rica | 0.7 | 0.63 | 8 | 8 | 8 | 8 |
| Honduras | 0.04 | 0.036 | 8 | 8 | 8 | 8 |
| Japan | 0.001 | 0.0009 | 8 | 8 | 8 | 8 |
| Mexico | 1.5 | 1.35 | 8 | 8 | 8 | 8 |
| New Zealand | 19 | 17.1 | 0 | 17 | 8 | 8 |
| Nicaragua | 2.6 | 2.34 | 8 | 8 | 8 | 8 |
| Uruguay | 12 | 10.8 | 0 | 10 | 8 | 8 |
| **Total** | **99.843** | **89.8587** | **56** | **141** | **88** | **88** |

**Table 22**
**Number of Samples/Product Class – Beef Processed**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Sulfonamides** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
|---|---|---|---|---|---|---|
| Argentina | 19.8 | 27 | 0 | 27 | 20 | 20 |
| Australia | 1.22 | 1.098 | 8 | 8 | 0 | 0[1] |
| Brazil | 61.15 | 55.035 | 0 | 0 | 40 | 40 |
| Canada | 9.33 | 8.397 | 0 | 0 | 0 | 0[1] |
| Mexico | 2.5 | 2.25 | 8 | 8 | 0 | 0[1] |
| New Zealand | 1.23 | 1.107 | 8 | 8 | 0 | 0[1] |
| Uruguay | 4.8 | 4.32 | 8 | 0 | 0 | 0[1] |
| **Total** | **100.03** | **72.207** | **32** | **51** | **60** | **60** |
| **Avermectins** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
| Argentina | 19.8 | 27 | 0 | 27 | 20 | 20 |
| Australia | 1.22 | 1.098 | 8 | 8 | 0 | 0[1] |
| Brazil | 61.15 | 55.035 | 0 | 0 | 40 | 40 |
| Canada | 9.33 | 8.397 | 0 | 0 | 0 | 0[1] |
| Mexico | 2.5 | 2.25 | 8 | 8 | 0 | 0[1] |
| New Zealand | 1.23 | 1.107 | 8 | 8 | 0 | 0[1] |
| Uruguay | 4.8 | 4.32 | 8 | 0 | 0 | 0[1] |
| **Total** | **100.03** | **72.207** | **32** | **51** | **60** | **60** |

**Table 23**
**Number of Samples/Product Class – Chicken Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Antibiotics** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
|---|---|---|---|---|---|---|
| Canada | 99.98 | 8 | | 8 | 8 | 8 |
| Mexico | 0.018 | 8 | | 8 | 8 | 8 |
| **Total** | **100** | **16** | | **16** | **16** | **16** |
| **Arsenicals** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
| Canada | 100 | 8 | | 8 | 8 | 8 |
| Mexico | 0.018 | 8 | | 8 | 8 | 8 |
| **Total** | **100** | **16** | | **16** | **16** | **16** |
| **Chloramphenicol** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
| Canada | 100 | 8 | | 8 | 8 | 8 |
| Mexico | 0.018 | 8 | | 8 | 8 | 8 |
| **Total** | **100** | **16** | | **16** | **16** | **16** |
| **Nitroimidazole** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
| Canada | 100 | 8 | | 8 | 8 | 8 |
| Mexico | 0.018 | 8 | | 8 | 8 | 8 |
| **Total** | **100** | **16** | | **16** | **16** | **16** |

**Table 24**
**Number of Samples/Product Class – Chicken Processed**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **Arsenicals** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
|---|---|---|---|---|---|---|
| Canada | 83.7 | 75.33 | 8 | 0 | 0 | 0[1] |
| Israel | 0.42 | 0.378 | 8 | 8 | 8 | 8 |
| Mexico | 16 | 14.4 | 8 | 0 | 0 | 0[1] |
| **Total** | **100.12** | **90** | **24** | **8** | **8** | **8** |

**Table 25**
**Number of Samples/Product Class – Mutton/Lamb Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Avermectins | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Initial Adj | Adjust # 2 | Final Adj |
|---|---|---|---|---|---|---|
| Australia | 73.5 | 66.15 | 66 | 66 | 43 | 43 |
| Canada | 0.24 | 0.216 | 0 | 8 | 8 | 8 |
| Chile | 0.004 | 0.0036 | 0 | 8 | 8 | 8 |
| Iceland | 0.1 | 0.09 | 0 | 8 | 8 | 8 |
| Mexico | 0.01 | 0.009 | 0 | 8 | 8 | 8 |
| New Zealand | 26.2 | 23.58 | 23 | 23 | 15 | 15 |
| **Total** | **100** | **90.0486** | **89** | **121** | **90** | **90** |

**Table 26**
**Number of Samples/Product Class – Pork Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Antibiotics | %product (Pc/c) | Uc/s=230*(Pc/c)/100 | Adjust #1 | Initial Adj | Adjust # 2 | Final Adj |
|---|---|---|---|---|---|---|
| Australia | 0.01 | 0.023 | 1 | 8 | 8 | 8 |
| Canada | 87 | 200.1 | 200 | 200 | 135 | 135 |
| Chile | 0.1 | 0.23 | 1 | 8 | 8 | 8 |
| Denmark | 10 | 23 | 21 | 21 | 15 | 15 |
| Finland | 0.3 | 0.69 | 1 | 8 | 8 | 8 |
| Ireland | 0.5 | 1.15 | 1 | 8 | 8 | 8 |
| Mexico | 0.37 | 0.851 | 1 | 8 | 8 | 8 |
| Netherlands | 3 | 6.9 | 1 | 8 | 8 | 8 |
| N. Ireland | 0.22 | 0.506 | 1 | 8 | 8 | 8 |
| New Zealand | 0.01 | 0.023 | 1 | 8 | 8 | 8 |
| Sweden | 0.1 | 0.23 | 1 | 8 | 8 | 8 |
| United Kingdom | 0.16 | 0.368 | 1 | 8 | 8 | 8 |
| Total | 101.77 | 230 | 231 | 301 | 230 | 230 |
| **Arsenicals** | **%product (Pc/c)** | **Uc/s=90*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
| Australia | 0.01 | 0.023 | 1 | 8 | 8 | 8 |
| Canada | 87 | 200.1 | 200 | 200 | 8 | 8 |
| Chile | 0.1 | 0.23 | 1 | 8 | 8 | 8 |
| Denmark | 10 | 23 | 21 | 21 | 8 | 8 |
| Finland | 0.3 | 0.69 | 1 | 8 | 8 | 8 |
| Ireland | 0.5 | 1.15 | 1 | 8 | 8 | 8 |
| Mexico | 0.37 | 0.851 | 1 | 8 | 8 | 8 |
| Netherlands | 3 | 6.9 | 1 | 8 | 8 | 8 |
| N. Ireland | 0.22 | 0.506 | 1 | 8 | 8 | 8 |
| New Zealand | 0.01 | 0.023 | 1 | 8 | 8 | 8 |
| Sweden | 0.1 | 0.23 | 1 | 8 | 8 | 8 |
| United Kingdom | 0.16 | 0.368 | 1 | 8 | 8 | 8 |
| **Total** | **101.77** | **230** | **231** | **301** | **96** | **96** |

**Table 26** *(continued)*
**Number of Samples/Product Class – Pork Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| **B-agonist** | **%product (Pc/c)** | **Uc/s=230*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
|---|---|---|---|---|---|---|
| Australia | 0.01 | 0.023 | 1 | 8 | 8 | 8 |
| Canada | 87 | 200.1 | 200 | 8 | 8 | 8 |
| Chile | 0.1 | 0.23 | 1 | 8 | 8 | 8 |
| Denmark | 10 | 23 | 21 | 8 | 8 | 8 |
| Finland | 0.3 | 0.69 | 1 | 8 | 8 | 8 |
| Ireland | 0.5 | 1.15 | 1 | 8 | 8 | 8 |
| Mexico | 0.37 | 0.851 | 1 | 8 | 8 | 8 |
| Netherlands | 3 | 6.9 | 1 | 8 | 8 | 8 |
| N. Ireland | 0.22 | 0.506 | 1 | 8 | 8 | 8 |
| New Zealand | 0.01 | 0.023 | 1 | 8 | 8 | 8 |
| Sweden | 0.1 | 0.23 | 1 | 8 | 8 | 8 |
| United Kingdom | 0.16 | 0.368 | 1 | 8 | 8 | 8 |
| **Total** | **101.77** | **230** | **231** | **96** | **96** | **96** |
| **Sulfonamides** | **%product (Pc/c)** | **Uc/s=230*(Pc/c)/100** | **Adjust #1** | **Initial Adj** | **Adjust # 2** | **Final Adj** |
| Australia | 0.01 | 0.023 | 1 | 8 | 8 | 8 |
| Canada | 87 | 200.1 | 200 | 200 | 135 | 135 |
| Chile | 0.1 | 0.23 | 1 | 8 | 8 | 8 |
| Denmark | 10 | 23 | 21 | 21 | 15 | 15 |
| Finland | 0.3 | 0.69 | 1 | 8 | 8 | 8 |
| Ireland | 0.5 | 1.15 | 1 | 8 | 8 | 8 |
| Mexico | 0.37 | 0.851 | 1 | 8 | 8 | 8 |
| Netherlands | 3 | 6.9 | 1 | 8 | 8 | 8 |
| N. Ireland | 0.22 | 0.506 | 1 | 8 | 8 | 8 |
| New Zealand | 0.01 | 0.023 | 1 | 8 | 8 | 8 |
| Sweden | 0.1 | 0.23 | 1 | 8 | 8 | 8 |
| United Kingdom | 0.16 | 0.368 | 1 | 8 | 8 | 8 |
| **Total** | **101.77** | **230** | **231** | **301** | **230** | **230** |

[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

# Design of the Domestic Scheduled Sampling Plan for Pesticides

## I. Selecting and Ranking Candidate Pesticides

The candidate pesticides of concern were selected by members of the Surveillance Advisory Team (SAT) from the Environmental Protection Agency (EPA). The candidates selected for the 2008 NRP are presented in Table 27, *Scoring Table for Pesticides*. Because the Food Safety and Inspection Service (FSIS) prioritizes which *analyses* should be conducted, compounds that are, or are likely to be, detected by the same analytical methodology have been grouped together.

*Compound Scoring*

Using a 4-point scale (4 = high; 3 = moderate; 2 = low; 1 = none), members of the SAT scored each of the pesticides in each of the following categories. Note that some of these categories differ from those used for the veterinary drugs:

- FSIS Historical Testing Information on Violations
- Regulatory Concern
- Pre-slaughter Interval
- Bioconcentration Factor
- Endocrine Disruption
- Toxicity

Definitions of each of these categories, and the criteria used for scoring, appear below in the section, "*Scoring Key for Pesticides*."

The results of the compound scoring process are presented in Table 27. Where compounds were grouped together, the score assigned to each category is the highest score for all members of the group.

*Compound Ranking*

1. Background

   Using *Equation 1*[1]:

   Risk = Exposure x Toxicity
   = Consumption x Residue Levels x Toxicity
   = Consumption x "Risk per Unit of Consumption"

FSIS employed risk assessment techniques and principles to obtain a ranking of the relative public health concern represented by each of the candidate compounds or compound classes. However, unlike the case with veterinary drugs, FSIS does not have historical data on a sufficient range of different pesticide compounds or compound classes to predict violation scores (and thus risk per unit of consumption) using a regression equation. Therefore, a somewhat different approach (although related to that used for the veterinary drugs) was necessary to estimate the "Risk per Unit of Consumption" term.

1 See the Section, *Design of the Domestic Scheduled Sampling Plan for Veterinary Drugs.*

2. Rating the Pesticides According to Relative Public Health Concern

The categories of "Regulatory Concern," "Pre-slaughter Interval" and "Bioconcentration Factor" were employed as predictors of risk per unit of consumption from pesticides in animal products. As indicated above, the "Regulatory Concern" category reflects EPA's professional judgment of the likelihood that a compound or compound class will exceed EPA's level of concern in meat, poultry, or egg products. Thus, it combines residue level and toxicity information. As with the "Withdrawal Time" category for veterinary drugs, the "Pre-slaughter Interval" category is expected to correlate with residue level because longer pre-slaughter intervals are less likely to be properly observed. When the pre-slaughter interval is not observed, the carcass may contain violative levels of residues since the time necessary for sufficient metabolism and/or elimination of the pesticide may not have passed. Bioconcentration is a measure of the extent to which a pesticide concentrates within the fat deposits of animals. Pesticides that bioconcentrate are more likely to accumulate to higher levels within animal tissue, which is expected to increase the potential for human exposure.

The "Toxicity" category reflects both the dose required to achieve a toxic effect and the severity of that effect. Because the numerical value assigned to toxicity is independent of other parameters, it can be used directly as a term in *Equation 1*.

EPA assigns a value to regulatory concern, pre-slaughter interval and bioconcentration factor to each pesticide compound or class of compounds. These values are multiplied by a weighted average and then by the toxicity value to give an estimate of the relative risk per unit of consumption, as shown in *Equation 12*.

Equation 12

Relative Public Health Concern

= Estimated relative risk per unit of consumption x *modifier for* "Lack of FSIS Testing Information on Violations"
= Estimated relative exposure x Relative toxicity x *modifier for* "Lack of FSIS Testing Information on Violations"
= Weighted average of {"Regulatory Concern," "Pre-slaughter Interval," "Bioconcentration factor"} x "Toxicity."

Comparing *Equation 12* to *Equation 3*, it can be seen that the "Weighted average of {'Regulatory Concern,' 'Pre-slaughter Interval,' "Bioconcentration factor'}" has been used in place of "Predicted or Actual Score for 'FSIS Historical Testing Information on Violations'." Endocrine Disruption" was not included in *Equation 12*, because scores for this category were not available for most of the pesticides.

The pesticides in Table 27 are rated according to their relative public health concern by combining the scoring categories presented in *Equation 12* using a weighting formula. The formula is presented in *Equation 13* and in Table 27. FSIS selected this formula, based on a consensus about the relative importance of each modifier, and of how much each modifier should be allowed to alter the underlying risk-based score for Relative Public Health Concern. The value of the selected mathematical formula is that it formalizes the basis of FSIS's judgement. This enables others to observe and understand the adjustments that were made, and it ensures consistency in how these adjustments were applied across a wide range of compounds.

Equation 13

Relative public health concern rating, pesticides = ((2*R+P+B)/4))*T

Where: R = score for "Regulatory Concern"
P = score for "Pre-slaughter Interval"
B = score for "Bioconcentration Factor"
T = score for "Toxicity."

In *Equation 13*, the variable for regulatory concern (R) is given twice as much weight as the pre-slaughter interval (P) and bioconcentration factor (B) because FSIS considers regulatory concern to be more of a direct measurement of exposure.

*Equation 13* for pesticides and *Equation 4* for veterinary drugs have been normalized to give the same maximum value so that their values appear to be comparable. However, because Equation 13 uses variables that are derived from terms (scoring categories) that are not the same as the terms used in *Equation 4*, their scores are not comparable. The scores for the pesticides and drugs were normalized to provide a rough comparison between these two different categories of compounds.

In Summary Table III (see page 8), *Rank and Status for Pesticides*, the pesticides with the top Relative Public Health Concerns Scores are ranked by their rating scores, as generated using the selected weighting scheme given in *Equation 13*. The scores presented in Summary Table III enable FSIS to bring consistency, grounded in formal risk-based considerations, to its efforts to differentiate among a very diverse range of pesticides and pesticide classes in a situation that is marked by minimal data on relative exposures**.** These rankings do not account for differences in exposure due to differences in overall consumption. Data on relative consumption are applied subsequently, in Phase IV, when relative exposure values for each compound/production class (C/PC) pair are estimated.

## II. Prioritizing Candidate Pesticides

Once the SAT completed ranking the pesticides according to their relative public health concern, the ranking scores were used to select compounds for the 2008 NRP. Using professional judgment, SAT participants decided that the pesticide compounds and compound classes that received a ranking of 23 or greater, as shown in Summary Table III, represent a potential public health concern that is sufficient to justify their inclusion in the 2008 NRP.

Once these high-priority compounds and compound classes had been identified, it was necessary for FSIS to apply considerations beyond those related to public health to determine the compounds that would be sampled. The principal consideration that was not related to public health was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Based on this constraint, only the chlorinated hydrocarbon/chlorinated organophosphate (CHC/COP) compound class can currently be included in the NRP. There are 29 compounds in this compound class that FSIS will analyze for quantity and chemical identity. There are 18 additional compounds that will only be identified. The compounds are:

aldrin, alpha-BHC, chlorfenvinphos, chlorpyrifos, cis-chlordane, trans-chlordane, coumaphos-S, p,p'-DDT, p,p'-DDE, dieldrin, PCB 1254, PCB 1260, endosulfan II, endosulfan sulfate, endrin, endrin ketone, heptachlor, heptachlor epoxides, hexachlorobenzene, 2,2',4,4',5,5' hexabromobiphenyl, lindane, methoxychlor, mirex, trans-nonachlor, oxychlordane, ronnel, stirophos (tetrachlorvinphos), p, p'-TDE, toxaphene, captan*, carbophenothion*, chlordene*, chlorpyrifos-methyl*, dichlofenthion*, endosulfan I*,

halowaxes*, kepone*, linuron*, phosalone*, polybrominated biphenyls*, polybrominated diphenyl ethers*, beta-BHC*, delta-BHC*, coumaphos-O*, o,p'-DDT*, o,p'-DDE*, and o,p'-TDE* (*identification only; not quantitated)

The sampling status of each compound or compound class in the 2008 scheduled sampling plan is provided in Summary Table III. For each highly ranked compound or compound class that was not scheduled for inclusion in the 2008 NRP, a brief explanation of the reason for its exclusion is provided. This table will be used to identify future method development needs for pesticides for the FSIS NRP.

It can be seen that a number of highly ranked pesticides could not be included in the 2008 NRP due to methodological limitations. FSIS will apply methodology capable of capturing chlorinated hydrocarbons and chlorinated and non-chlorinated organophosphates when such methodology can be implemented.

## III. Identifying the Compound/Production Class (C/PC) Pairs

The CHC/COP class includes pesticides that may be present in the foods animals eat, creating the potential for the occurrence of "secondary residues" (i.e., residues that are not the result of direct treatment) in all classes of animals. Other compounds within this class (such as the PCBs) are environmental contaminants to which any animal may be exposed.

Since the 2006 NRP, FSIS has suspended scheduled sampling testing for CHCs and COPs for the following production classes: minor species (ducks, geese, ratites, rabbits, squab, and bison); young chickens; market hogs; steers; young turkeys; mature chickens; bulls; formula-fed veal; mature turkeys; roaster pigs; and bob veal. Not scheduling these species will allow FSIS to focus those resources on the development of methodologies in areas that are of high public health concern. FSIS will continue sampling for CHCs and COPs as a means of scheduled sampling for the occurrence of accidental contamination incidents.

## IV. Allocation of Sampling Resources

Since only the CHC/COP compound class will be included in the 2008 NRP, this phase is relatively straightforward. FSIS has sufficient analytical capability to implement CHC/COP analysis in all production classes. To establish a relative sampling priority for each C/PC pair, the ranking score for the CHC/COPs were calculated (Table 27) and multiplied by the estimated relative percent of domestic consumption for each production class (presented in Table 3) and shown in *Equation 14*. This is identical to *Equation 6*, which was used to calculate the relative sampling priorities for the veterinary drugs:

Equation 14

$$(\text{Rel. sampling priority})_{C/PC} = (\text{Ranking score})_{C} \times (\text{Est. rel. \% domestic consumption})_{PC}$$

As stated above for veterinary drugs, *Equation 14* is analogous to the equation used to estimate risk in *Equation 1*, in which risk per unit of consumption is multiplied by consumption. While the results of *Equation 14* do not constitute an estimate of risk, they provide a numerical representation of the relative public health concern associated with each C/PC pair, and thus can be used to prioritize FSIS analytical sampling resources according to the latter. Note that the risk ranking provided by *Equation 14* is based upon average consumption across the entire U.S. population, rather than upon maximally exposed individuals.

A ranking of the C/PC pairs within this single compound class could be obtained merely using the estimated relative percent of domestic consumption for each production class. In other words, the *rank order and the relative magnitude of the score* assigned to each of the C/PC pairs within this compound class is not changed by multiplying all the relative consumption values by the ranking score, since the ranking score is a constant term. Nevertheless, to maintain a rough parity between the sampling numbers assigned to the veterinary drugs and those assigned to the pesticides, all of the relative consumption figures were multiplied by the ranking score for the CHC/COP compound class. The initial sample number was chosen to be 300 animals regardless of the priority score. This sampling level provides 95% confidence in detecting a residue violation if the violation rate is 1% or higher. The results are presented in Table 28, *Pesticide Compound/Production Class Pairs, Sorted by Sampling Priority Score, with Adjusted Number of Analyses*.

## Adjusting Relative Sampling Numbers

### *Adjusting for historical data on violation rates of individual C/PC pairs*

Extensive FSIS historical testing information on violations, subdivided by production class, is available for the CHC/COP compound class. This information has been used to further refine the relative priority of sampling each C/PC pair. Table 28 lists the priority score calculated by multiplying the total number of samples analyzed by FSIS in each production class under its scheduled sampling plan (i.e., random sampling only)for the period 01/01/1997 -12/31/2006 and the percent of samples found to be violative (i.e., present at a level in excess of the action level or regulatory tolerance; or, for those compounds that are prohibited, present at any detectable level). Using these data, the following rules were applied to adjust the sampling numbers:

1. Less than 300 samples from the C/PC pair tested over the 10 year period: +1 level (i.e., increase by one sampling level, e.g., from 230 samples to 300 samples).
2. At least 300 samples tested over the 10-year period, violation rate and violations were found during CY 2007, or the violation rate is greater than or equal to 0.25% ($\geq$ 0.25%) during 01/01/1997-12/31/2006, decrease the sampling level using Statistical Table in Appendix III.
3. At least 300 samples tested over the 10-year period, violation rate = 0.00%, maintain the initial sampling level.
4. The maximum number of samples to be scheduled for testing is 300.

An exception to these rules is:

> For the 2008 NRP, FSIS has suspended scheduled sampling testing for for CHCs and COPs for the following production classes: minor species (ducks, geese, ratites, rabbits, squab, and bison); young chickens; market hogs; steers; young turkeys; mature chickens; bulls; formula-fed veal; mature turkeys; roaster pigs; and bob veal.

All of the above adjustments were applied. The sampling numbers obtained following these adjustments are listed in Table 28 under the heading, "First Adjust," (initial adjusted number of samples).

### *Adjusting for laboratory capacity*

No adjustment for laboratory capacity was necessary for the 2008 NRP.

***Adjustment for the Number of Slaughter Facilities***

An adjustment to the total number of scheduled samples was made based on the number of production facilities (Table 28). For this adjustment, FSIS considered the total number of production facilities (USDA Inspected Establishments for 2004) for each production class. If the total number of production facilities for a production class was found to be low relative to other production classes, the total number of scheduled samples was reduced for that production class. The number of samples selected for the reduction was based on FSIS professional judgment. If the number of facilities is less than 100, the number of scheduled samples was adjusted down by 1 level (if 300 were assigned initially, decrease to 230 samples). Based on these parameters, the number of scheduled samples was adjusted for the following production classes: "Formula-fed veal", "Bob Veal", "Young Turkeys", "Mature Chickens", and "Mature Turkeys." No adjustment was made for the minor species (bison, ducks, rabbits, geese, squab, and ratites) since these minor species are suspended from pesticide testing for the 2008 NRP.

## V. Scoring Key for Pesticides

*FSIS Historical Testing Information on* Violations (01/01/1997 -12/31/2006)

Violation rate scores were calculated by two different methods, A and B, using violation rate data from FSIS random sampling of animals entering the food supply:

Method A: Maximum Violation Rate. Identify the production class exhibiting the highest average violation rate (the number of violations over the period from 1997-2006, divided by the total number of samples analyzed). Score as follows:

4 = > 0.5%
3 = 0.25% - 0.5 %
2 = 0.07% - 0.24%
1 = < 0.07%
NT = Not tested by FSIS.
NA = Tested by FSIS, but violation information does not apply.

Method B: Violation Rate Weighted by Size of Production Class. For each production class analyzed, multiply the average violation rate (defined above) by the relative consumption value for that class (weight annual U.S. production for that class, divided by total production for all classes for which FSIS has regulatory responsibility). Add together the values for all production classes. Score as follows:

4 = > 0.08%
3 = 0.035% - 0.08%
2 = 0.003% - 0.034%
1 = < 0.003%
NT = Not tested by FSIS.
NA = Tested by FSIS, but violation information does not apply.

*The final score is determined by assigning, to each pesticide or pesticide class, the greater of the scores from Method A and Method B.*

It can be seen that Method A identifies those pesticides that are of regulatory concern because they exhibit high violation rates, independent of the relative consumption value of the production class in which the violations have occurred. Method B identifies those pesticides that may not have the highest violation rates, but would nevertheless be of concern because they exhibit moderate violation rates in a relatively large proportion of the U.S. meat, poultry, and egg products. By employing Methods A and B together, and assigning a final score based on the highest score received from each, both of the above concerns are captured.

***Regulatory Concern***

These scores represent EPA's professional assessment of the extent to which the acute or chronic dietary exposure to this compound may exceed EPA's level of concern. For compounds other than carcinogens, this was determined by comparing a compound's Acute or Chronic Population Adjusted Dose (PAD) (whichever was lower) to the estimated level of exposure. The Acute and Chronic PAD's are calculated as follows:

The Acute Reference Dose (Acute RfD) is an estimate (with uncertainty spanning an order of magnitude or greater) of a single oral exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects.

The Chronic Reference Dose (Chronic RfD) is an estimate (with uncertainty spanning an order of magnitude or greater) of a daily oral exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects during a lifetime.

The Acute and Chronic RFD's are calculated by dividing the No Observed Adverse Effect Level (NOAEL) (i.e., the highest dose that gave no observable adverse effect) or the Lowest Observed Adverse Effect Level (LOAEL) (i.e., the lowest dose at which an adverse effect was seen) by Uncertainty Factors (UF). UF's are used to account for differences between different humans (intraspecies variability) and for differences between the test animals and humans (interspecies extrapolation). If the LOAEL is used, an additional UF is required.

RfD = (NOAEL or LOAEL)/Total UF

The Acute and Chronic Population Adjusted Dose (PAD) are the Acute and Chronic RfD, respectively, modified by the FQPA Safety Factor:

Acute or Chronic PAD = (Acute or Chronic RfD)/FQPA Safety Factor

The acute and chronic dietary risks are expressed as a percentage of the Acute or Chronic PAD. A dietary risk of 100% of the Acute or Chronic PAD (*whichever is lower*) is the target level of exposure that should not be exceeded (i.e., the estimated risk associated with any exposure that is less than 100% of the PAD has been judged not to be of concern). In the following, "PAD" is the lower of the Acute and Chronic PAD's.

4 = PAD exceeded or carcinogenic.

3 = Close to PAD.

2 = Exposure estimated to be a low percentage of PAD.

1 = Exposure estimated to be a very low percentage of PAD.

***Pre-Slaughter Interval***

A numerical value of 1, 2, 3 or 4 is assigned by EPA to pesticides for the category "Pre-Slaughter Interval" (Table 27). Pesticides in this category have been accepted for direct dermal application and have a minimum pre-slaughter interval, which is the interval between the last dermal application and the time of slaughter. FSIS determines a value for a pesticide in this category as follows:

- A value of 4 is assigned when dermal application is permitted and the pre-slaughter interval is 1 day or greater.
- A value of 3 is assigned when dermal application is permitted and the pre-slaughter interval is 0 days.
- A value of 2 is assigned when dermal application is not permitted, but the treatment of premises (e.g., holding cells, feedlots, barns, etc.) is permitted.
- A value of 1 is assigned when neither dermal application nor premise treatment are permitted.

***Bioconcentration Factor***

A numerical value of 1, 2, 3 or 4 is assigned by EPA to pesticides for the category "Bioconcentration Factor" (Table 27). Bioconcentration is a measure of a compound's relative affinity for fat, as measured by the $K_{o/w}$. The $K_{o/w}$ is defined as the logarithm of the partition coefficient between octanol and water ($\log P_{o/w}$). Compounds that have a high affinity for octanol (and thus a high $K_{o/w}$) tend to bioaccumulate in body fat. A bioconcentration value is determined according to the following criteria:

- A value of 4 is assigned if the $\log K_{o/w}$ is greater than 3.
- A value of 3 is assigned if the $\log K_{o/w}$ is between 2 and 3.
- A value of 2 is assigned if the $\log K_{o/w}$ is between 1 and 2.
- A value of 1 is assigned if the $\log K_{o/w}$ is less than 1.

***Endocrine Disruption***

A numerical value of 3 or 4 (or NT if not tested) is assigned by EPA to pesticides for the category "Endocrine Disruption" (Table 27). Endocrine disruption is a measure of the extent to which the compound changes endocrine function and causes adverse effects to individual organisms and/or their progeny, or to organism populations and subpopulations. A value for endocrine disruption is assigned as follows:

- A value of 4 is assigned if endocrine disruption is likely.
- A value of 3 is assigned if endocrine disruption is suspected.

- NT is reported if the compound has not been tested.

***Toxicity***

A numerical value of 1, 2, 3 or 4 is assigned by EPA to pesticides for the category "Toxicity" (Table 27). The toxicity value represents EPA's professional judgment of the toxicity of the compound, including both the dose required to achieve a toxic effect, and the severity of the toxic effect. In the following, "RfD" is the lower of the Acute and Chronic RfD's. [An explanation of Acute and Chronic RfD is provided in the description of Regulatory Concern, above.] A value for toxicity is determined as follows:

- A value of 4 is assigned if the pesticide compound is a cholinesterase inhibitor, carcinogen or has a low RfD.

- A value of 3 is assigned if the pesticide compound has a low RfD.

- A value of 2 is assigned if the pesticide compound has a medium RfD.

- A value of 1 is assigned if the pesticide compound has a high RfD.

**Table 27**
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Benzimidazole Pesticides – compounds in FSIS benzimidazole MRM[6] | Not Tested[7] | 3 | 1 | 4 | 3 | 4 | 11.0 |
| Carbamates in FSIS Carbamate – compounds in the FSIS MRM[8] | Not Tested | 4 | 4 | 2 | 3 | 4 | 14.0 |
| Carbamates – compounds not in the FSIS carbamate MRM[9] | Not Tested | 4 | 1 | 3 | Not Available | 4 | 12.0 |
| Chlorinated hydrocarbons and chlorinated organophosphates (CHCs and COPs) – compounds in the FSIS CHC/COP MRM[10] | 3 | 4 | 4 | 4 | Not Available | 4 | 16.0 |
| Chlorinated organophosphates and organophosphates (COPs and OPs) not in the FSIS CHC/COP MRM[11] | Not Tested | 4 | 4 | 4 | Not Available | 4 | 16.0 |
| Synthetic Pyrethroids – compounds in the FSIS Synthetic Pyrethrin MRM[12] | Not Tested | 3 | 4 | 4 | 3 | 4 | 14.0 |
| Triazines – compounds in the FSIS triazine MRM[13] | Not Tested | 4 | 2 | 3 | 4 | 4 | 13.0 |
| Triazines – compounds not in the FSIS triazine MRM[14] | Not Tested | 4 | 4 | 3 | 4 | 4 | 15.0 |
| 1-(2,4-dichlorophenyl)-2-(1H-imidazole-1-yl)-1-ethanol | Not Tested | 3 | 4 | 4 | Not Available | 4 | 14.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| 1,1-(2,2-dichloroethylidene) bis(4-methoxybenzene) | Not Tested | 3 | 4 | 4 | Not Available | 4 | 14.0 |
| 1,1,3,3,-tetrakis(2-methyl-2-phenylpropyl) -1,3-dihydroxydistannoxane | Not Tested | 2 | 1 | 4 | Not Available | 3 | 6.8 |
| 1-methoxy -4-(1,2,2,2-tetrachloroethyl)benzene) | Not Tested | 3 | 4 | 4 | Not Available | 4 | 14.0 |
| 1-methyl cyromazine | Not Tested | 3 | 4 | 2 | Not Available | 4 | 12.0 |
| 2-((2-ethyl-6-methylphenyl)-amino) -1-propanol | Not Tested | 3 | 1 | 3 | 3 | 4 | 10.0 |
| 2-(1-hydroxyethyl) -6-ethylaniline | Not Tested | 4 | 1 | 3 | 3 | 4 | 12.0 |
| 2-(4-((6-chloro-2-benzoxazolyl)oxy) phenoxy)propanoic acid | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| 2,3-dihydro-3,3-dimethyl -2-oxo-5-benzofuranyl methyl sulfonate | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| 2,4-D | Not Tested | 3 | 2 | 1 | 3 | 2 | 4.5 |
| 2,5-dichloro-4-methoxyphenol | Not Tested | 1 | 1 | 2 | Not Available | 3 | 3.8 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| 2,6-diethylaniline | Not Tested | 4 | 1 | 3 | 3 | 4 | 12.0 |
| 2,6 DIPN | Not Tested | 1 | 1 | 1 | Not Available | 1 | 1.0 |
| 2-aminobenzimidazole | Not Tested | 3 | 1 | 2 | 3 | 4 | 9.0 |
| 2-amino-n-isopropylbenzamide | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| 2-carboxyisopropyl-4-(2,4-dichloro)-5-isopropoxyphenyl)-1,3,4-oxadiazolin-5-one | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| 2-hydroxy-2,3-dihydro-3,3-dimethyl-5-benzofuranyl methyl sulfonate | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| 2-t-butyl-4-(2,4-dichloro-5-hydroxyphenyl)-delta 2-1,3,4-oxadiazolin-1,3,4,5-one | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| 3-(1-(2,4-dichlorophenyl)-2-(1H-imidazole-1-yl)ethoxy)-1,2-propane diol | Not Tested | 3 | 4 | 4 | Not Available | 4 | 14.0 |
| 3-(2-chloro-4-hydroxyphenyl)-6-(2-chlorophenyl)-1,2,4,5-tetrazine | Not Tested | 3 | 1 | 1 | Not Available | 4 | 8.0 |
| 3-(3,4-dichlorophenyl)-1-methoxyurea | Not Tested | 3 | 2 | 3 | Not Available | 4 | 11.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| 3,4-Dichloroaniline | Not Tested | 3 | 2 | 3 | Not Available | 4 | 11.0 |
| 3,4-dichlorophenylurea | Not Tested | 3 | 2 | 3 | Not Available | 4 | 11.0 |
| 3-carboxy-5-ethoxy-1,2,4-thiadiazole | Not Tested | 3 | 1 | 4 | Not Available | 3 | 8.3 |
| 3-t-butyl-5-chloro-6-hydroxymethyluracil | Not Tested | 1 | 1 | 1 | Not Available | 3 | 3.0 |
| 4-(2-ethyl-6-methylphenyl)-2-hydroxy-5-methyl-3-morpholinone | Not Tested | 3 | 1 | 3 | 3 | 4 | 10.0 |
| 4-chloro-2-trifluoromethylaniline | Not Tested | 3 | 1 | 4 | Not Available | 3 | 8.3 |
| 4-hydrocythidiazuron | Not Tested | 2 | 1 | 2 | Not Available | 4 | 7.0 |
| 6-chloro-2,3-dihydro-3,3,7-trimethyl-5H-oxazolo(3,2a)pyrimidin-5-one | Not Tested | 1 | 1 | 1 | Not Available | 3 | 3.0 |
| 6-chloro-2,3-dihydro-7-hydroxymethyl-3,3-dimethyl-5H-oxazolo(3,2-a)pyrimidin-5-one | Not Tested | 1 | 1 | 1 | Not Available | 3 | 3.0 |
| 6-chloro-2,3-dihydro-benzoxazol-2-one | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| 6-chloronicotinic acid | Not Tested | 3 | 1 | 1 | Not Available | 3 | 6.0 |
| 6-chloropicolinic acid | Not Tested | 1 | 1 | 4 | Not Available | 3 | 5.3 |
| 6-methyl-2,3-quinoxalinedithiol | Not Tested | 3 | 1 | 2 | Not Available | 4 | 9.0 |
| Abamectin | Not Tested | 2 | 1 | 4 | Not Available | 4 | 9.0 |
| Abamectin delta 8,9 geometric isomer | Not Tested | 2 | 1 | 4 | Not Available | 4 | 9.0 |
| Acifluorfen, amino analog | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| Alachlor | Not Tested | 4 | 1 | 3 | 3 | 4 | 12.0 |
| Allophanate | Not Tested | 3 | 1 | 2 | Not Available | 4 | 9.0 |
| Amicarbazone | Not Tested | 1 | 1 | 2 | Not Available | 2 | 2.5 |
| Aminomethylphosphonic acid | Not Tested | 1 | 2 | 1 | Not Available | 1 | 1.3 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Aminopyralid | Not Tested | 1 | 2 | 1 | Not Available | 2 | 2.5 |
| Arsanilic acid | Not Tested | 4 | 1 | 4 | Not Available | 4 | 13.0 |
| Azoxystrobin | Not Tested | 1 | 1 | 3 | Not Available | 2 | 3.0 |
| Azoxystrobin Z isomer | Not Tested | 1 | 1 | 3 | Not Available | 2 | 3.0 |
| Benoxacor | Not Tested | 1 | 1 | 3 | Not Available | 4 | 6.0 |
| Bensulfuron methyl ester | Not Tested | Not Available | 1 | 1 | Not Available | 2 | 1.0 |
| Bentazon, 6-hydroxy bentazon, 8-hydroxy bentazon | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| Bifenthrin | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Bifenthrin, 4'-hydroxy | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Bispyribac-sodium | Not tested | 1 | 1 | 4 | Not Available | 2 | 3.5 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Bis(trichloromethyl)disulfide | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Boscalid | Not Tested | 2 | 1 | 3 | Not Available | 2 | 4.0 |
| Bromoxynil | Not Tested | 3 | 1 | 1 | Not Available | 4 | 8.0 |
| Buprofezin | Not Tested | 2 | 1 | 4 | Not Available | 3 | 6.8 |
| Butafenacil | Not Tested | 1 | 1 | 4 | Not Available | 2 | 3.5 |
| Butylamine, sec- | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| Cacodylic acid | Not Tested | 3 | 3 | 3 | 3 | 4 | 12.0 |
| Captan epoxide | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Carboxin | Not Tested | 3 | 1 | 2 | Not Available | 4 | 9.0 |
| Carboxin sulfoxide | Not Tested | 3 | 1 | 2 | Not Available | 4 | 9.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Carfentrazone Ethyl | Not Tested | 1 | 1 | 4 | Not Available | 1 | 1.8 |
| CGA 150829 | Not Tested | 2 | 1 | 1 | Not Available | 4 | 6.0 |
| CGA 161149 | Not Tested | 1 | 1 | 1 | Not Available | 3 | 3.0 |
| CGA 171683 | Not Tested | 2 | 1 | 1 | Not Available | 4 | 6.0 |
| CGA 195654 | Not Tested | 1 | 1 | 1 | Not Available | 3 | 3.0 |
| Chlorfenapyr | Not Tested | 1 | 1 | 2 | Not Available | 4 | 5.0 |
| Chlorobenzilate | Not Tested | 3 | 1 | 4 | Not Available | 3 | 8.3 |
| Chloroneb | Not Tested | 1 | 1 | 2 | Not Available | 3 | 3.8 |
| Chloroneb, hydroxy- | Not Tested | 1 | 1 | 2 | Not Available | 3 | 3.8 |
| Chlorsulfuron | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Chlorsulfuron, 5-hydroxy- | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| Clethodim | Not Tested | Not Available | 1 | 2 | Not Available | 3 | 2.3 |
| Clothiodin | Not Tested | 1 | 1 | 1 | Not Available | 1 | 1.0 |
| Clofencet | Not Tested | 1 | 1 | 2 | Not Available | 3 | 3.8 |
| Clofentezine | Not Tested | 3 | 1 | 1 | Not Available | 4 | 8.0 |
| Cloprop | Not Tested | 1 | 1 | 1 | Not Available | 3 | 3.0 |
| Clopyralid | Not Tested | 1 | 2 | 1 | Not Available | 2 | 2.5 |
| Compound 125670 | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| CP 101394 | Not Tested | 4 | 1 | 3 | 3 | 4 | 12.0 |
| CP 108064 | Not Tested | 4 | 1 | 3 | 3 | 4 | 12.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| CP 108065 | Not Tested | 4 | 1 | 3 | 3 | 4 | 12.0 |
| CP 108267 | Not Tested | 4 | 1 | 3 | 3 | 4 | 12.0 |
| CP 51214 | Not Tested | 4 | 1 | 3 | 3 | 4 | 12.0 |
| Cyclanilide | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Cyclohexylstannoic acid | Not Tested | 2 | 1 | 2 | Not Available | 4 | 7.0 |
| Cyfluthrin | Not Tested | 4 | 4 | 2 | Not Available | 3 | 10.5 |
| Cyhalothrin, lambda- | Not Tested | 4 | 4 | 2 | Not Available | 4 | 14.0 |
| Cyhexatin | Not Tested | 2 | 1 | 2 | Not Available | 4 | 7.0 |
| Cyromazine | Not Tested | 3 | 4 | 2 | Not Available | 4 | 12.0 |
| Dalapon | Not Tested | 2 | 2 | 2 | Not Available | 3 | 6.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Deltamethrin | Not Tested | 3 | 2 | 4 | Not Available | 3 | 9.0 |
| Dialifor | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Dialifor oxon | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Dicamba | Not Tested | 3 | 2 | 3 | Not Available | 4 | 11.0 |
| Dicyclohexyltin oxide | Not Tested | 2 | 1 | 2 | Not Available | 4 | 7.0 |
| Difenoconazole | Not Tested | 4 | 1 | 4 | Not Available | 3 | 9.8 |
| Difenzoquat | Not Tested | 1 | 1 | 1 | Not Available | 4 | 4.0 |
| Diflubenzuron | Not Tested | 3 | 4 | 4 | Not Available | 2 | 7.0 |
| Diflufenzopyr | Not Tested | 1 | 1 | 2 | Not Available | 4 | 5.0 |
| Dimethenamid | Not Tested | 2 | 1 | 1 | Not Available | 2 | 3.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Dimethipin | Not Tested | 1 | 1 | 1 | Not Available | 3 | 3.0 |
| Dioxathion | Not Tested | 3 | 1 | 3 | Not Available | 4 | 10.0 |
| Diphenamid | Not Tested | 3 | 1 | 1 | Not Available | 3 | 6.0 |
| Diphenamid, desmethyl | Not Tested | 3 | 1 | 1 | Not Available | 3 | 6.0 |
| Diphenylamine | Not Tested | 3 | 3 | 4 | Not Available | 3 | 9.8 |
| Dipropyl isocinchomerate | Not Tested | 3 | 4 | 4 | Not Available | 2 | 7.0 |
| Diquat dibromide | Not Tested | 1 | 1 | 3 | Not Available | 4 | 6.0 |
| Diuron | Not Tested | 3 | 2 | 3 | Not Available | 4 | 11.0 |
| Dodine | Not Tested | 2 | 1 | 1 | Not Available | 3 | 4.5 |
| Emamectin | Not Tested | 2 | 1 | 4 | Not Available | 3 | 6.8 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Esfenvalerate | Not Tested | 3 | 4 | 3 | Not Available | 3 | 9.8 |
| Ethalfluralin | Not Tested | 3 | 1 | 2 | Not Available | 4 | 9.0 |
| Ethephon | Not Tested | 3 | 1 | 1 | Not Available | 2 | 4.0 |
| Ethofumesate | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| Ethoxyquin | Not Tested | 4 | 2 | 4 | Not Available | 2 | 7.0 |
| Etoxazole | Not Tested | 4 | 1 | 4 | Not Available | 4 | 13.0 |
| Etridiazole . | Not Tested | 4 | 1 | 4 | Not Available | 3 | 9.8 |
| ETU | Not Tested | 3 | 1 | 2 | 3 | 4 | 9.0 |
| Famoxadone | Not Tested | 2 | 1 | 3 | Not Available | 2 | 4.0 |
| Fenamidone | Not Tested | 2 | 1 | 3 | Not Available | 2 | 4.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Fenarimol | Not Tested | 1 | 1 | 4 | Not Available | 3 | 5.3 |
| Fenarimol metabolite B | Not Tested | 1 | 1 | 4 | Not Available | 3 | 5.3 |
| Fenarimol metabolite C | Not Tested | 1 | 1 | 4 | Not Available | 3 | 5.3 |
| Fenbuconazole | Not Tested | 4 | 1 | 4 | Not Available | 3 | 9.8 |
| Fenbutatin Oxide | Not Tested | 2 | 1 | 4 | Not Available | 3 | 6.8 |
| Fenhexamid | Not Tested | 2 | 1 | 4 | Not Available | 2 | 4.5 |
| Fenoxaprop ethyl | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Fenpropathrin | Not Tested | 4 | 1 | 1 | Not Available | 3 | 7.5 |
| Fenridazon | Not Tested | 2 | 1 | 2 | Not Available | 3 | 5.3 |
| Fipronil | Not Tested | 3 | 4 | 4 | Not Available | 4 | 14.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Flonicamid | Not Tested | 1 | 1 | 2 | Not Available | 1 | 1.3 |
| Fluazifop-butyl | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| Flucarbazone-sodium | Not Tested | 1 | 1 | 1 | Not Available | 1 | 1.0 |
| Fludioxanil | Not Tested | 1 | 1 | 4 | Not Available | 1 | 1.8 |
| Flufenacet (thiafluamide) | Not Tested | 3 | 1 | 4 | Not Available | 3 | 8.3 |
| Flufenoxuron | Not Tested | 2 | 1 | 4 | Not Available | 4 | 9.0 |
| Fluoxastrobin | Not Tested | 2 | 1 | 3 | Not Available | 2 | 4.0 |
| Fluridone | Not Tested | 2 | 1 | 2 | Not Available | 3 | 5.3 |
| Fluroxypyr | Not Tested | 2 | 1 | 1 | Not Available | 2 | 3.0 |
| Fluthiacet-Methyl (CGA-248757) | Not Tested | 1 | 1 | 1 | Not Available | 1 | 1.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Flutolanil | Not Tested | 2 | 1 | 4 | Not Available | 2 | 4.5 |
| Fluvalinate | Not Tested | 4 | 1 | 4 | Not Available | 3 | 9.8 |
| Gamma-cyhalothrin | Not Tested | 3 | 3 | 4 | Not Available | 3 | 9.8 |
| Glufosinate-Ammonium | Not Tested | 1 | 2 | 1 | Not Available | 3 | 3.8 |
| Glyphosate | Not Tested | 1 | 2 | 1 | Not Available | 1 | 1.3 |
| Glyphosate-Trimesium | Not Tested | 1 | 1 | 1 | Not Available | 2 | 2.0 |
| Halosulfuron | Not Tested | 1 | 1 | 2 | Not Available | 2 | 2.5 |
| Hexazinone | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| Hexythiazox | Not Tested | 3 | 1 | 3 | Not Available | 4 | 10.0 |
| HOE-061517 | Not Tested | 1 | 2 | 1 | Not Available | 3 | 3.8 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| HOE-099730 | Not Tested | 1 | 2 | 1 | Not Available | 3 | 3.8 |
| Imazalil | Not Tested | 4 | 4 | 4 | Not Available | 4 | 16.0 |
| Imidacloprid | Not Tested | 3 | 1 | 1 | Not Available | 3 | 6.0 |
| IN-A3928 | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| IN-B2838 | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| Indoxacarb (DPX-MP062) | Not Tested | 4 | 1 | 4 | Not Available | 4 | 13.0 |
| IN-T3935 | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| IN-T3936 | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| IN-T3937 | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| Iprodione | Not Tested | 3 | 1 | 3 | Not Available | 4 | 10.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Iprodione isomer | Not Tested | 3 | 1 | 3 | Not Available | 4 | 10.0 |
| Iprodione metabolite | Not Tested | 3 | 1 | 3 | Not Available | 4 | 10.0 |
| Iprodione metabolite 2 | Not Tested | 3 | 1 | 3 | Not Available | 4 | 10.0 |
| Isoxaflutole | Not Tested | 4 | 1 | 3 | Not Available | 3 | 9.0 |
| Kresoxim-methyl | Not Tested | 4 | 1 | 4 | Not Available | 3 | 9.8 |
| Maleic hydrazide | Not Tested | 3 | 1 | 4 | Not Available | 1 | 2.8 |
| Mancozeb | Not Tested | 3 | 1 | 2 | 3 | 4 | 9.0 |
| Maneb | Not Tested | 3 | 1 | 2 | 3 | 4 | 9.0 |
| MB 45950 | Not Tested | 3 | 4 | 4 | Not Available | 4 | 14.0 |
| MB 46136 | Not Tested | 3 | 4 | 4 | Not Available | 3 | 10.5 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| MB 46513 | Not Tested | 3 | 4 | 4 | Not Available | 4 | 14.0 |
| MCPA | Not Tested | 1 | 1 | 1 | Not Available | 4 | 4.0 |
| Mepiquat chloride | Not Tested | 3 | 1 | 1 | Not Available | 4 | 8.0 |
| Mesosulfuron-methyl | Not Tested | 1 | 1 | 1 | Not Available | 1 | 1.0 |
| Metconazole | Not Tested | 4 | 1 | 4 | Not Available | 4 | 13.0 |
| Methoprene | Not Tested | 2 | 1 | 3 | Not Available | 2 | 4.0 |
| Methoxychlorolefin | Not Tested | 3 | 4 | 4 | 4 | 4 | 14.0 |
| Methoxyfenozide | Not Tested | 2 | 1 | 3 | Not Available | 2 | 4.0 |
| Methyl 3,5-dichlorobenzoate | Not Tested | 3 | 1 | 4 | Not Available | 3 | 8.3 |
| Metiram | Not Tested | 3 | 1 | 2 | 3 | 4 | 9.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Metolachlor | Not Tested | 3 | 1 | 3 | 3 | 4 | 10.0 |
| Metsulfuron Methyl | Not Tested | 1 | 1 | 1 | Not Available | 2 | 2.0 |
| Myclobutanil, myclobutanil alcohol metabolite, myclobutanol dihydroxy metabolite | Not Tested | 3 | 1 | 2 | Not Available | 2 | 4.5 |
| N-(3,4-dichlorophenyl)-N'-methylurea | Not Tested | 3 | 2 | 3 | Not Available | 4 | 11.0 |
| N-(4-chloro-2-trifluoromethylphenyl)-propoxyacetamide | Not Tested | 3 | 1 | 4 | Not Available | 3 | 8.3 |
| Nicotine | Not Tested | 1 | 1 | 3 | Not Available | 4 | 6.0 |
| Nitrapyrin | Not Tested | 1 | 1 | 4 | Not Available | 3 | 5.3 |
| Norfluraxon, desmethyl- | Not Tested | 3 | 1 | 1 | Not Available | 4 | 8.0 |
| Norflurazon | Not Tested | 3 | 1 | 1 | Not Available | 4 | 8.0 |
| Novaluron | Not Tested | 2 | 1 | 3 | Not Available | 2 | 4.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| N-phenylurea | Not Tested | 2 | 1 | 2 | Not Available | 4 | 7.0 |
| NTN33823 | Not Tested | 3 | 1 | 1 | Not Available | 3 | 6.0 |
| NTN35884 | Not Tested | 3 | 1 | 1 | Not Available | 3 | 6.0 |
| Octyl bicycloheptene dicarboximide (MGK-264) | Not Tested | 3 | 4 | 4 | Not Available | 3 | 10.5 |
| Oxadiazon | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Oxyfluorfen | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Oxythioquinox | Not Tested | 3 | 1 | 1 | Not Available | 4 | 8.0 |
| Paraquat dichloride | Not Tested | 3 | 1 | 1 | Not Available | 4 | 8.0 |
| PB-7 | Not Tested | 2 | 1 | 1 | Not Available | 4 | 6.0 |
| PB-9 | Not Tested | 2 | 1 | 2 | Not Available | 4 | 7.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Phosalone oxon | Not Tested | 4 | 1 | 3 | Not Available | 4 | 12.0 |
| Picloram | Not Tested | 1 | 2 | 1 | Not Available | 2 | 2.5 |
| Piperonyl butoxide | Not Tested | 3 | 4 | 2 | Not Available | 3 | 9.0 |
| PP 890 | Not Tested | 3 | 4 | 2 | Not Available | 4 | 12.0 |
| Primisulfuron-methyl | Not Tested | 2 | 1 | 1 | Not Available | 4 | 6.0 |
| Prohexadione-ca1cium | Not Tested | 1 | 1 | 1 | Not Available | 1 | 1.0 |
| Propanil | Not Tested | 1 | 1 | 3 | Not Available | 4 | 6.0 |
| Propargite | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| Propargite | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| Propiconazole metabolite CGA 118244 | Not Tested | 4 | 1 | 3 | Not Available | 4 | 12.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Propiconazole metabolite CGA 91305 | Not Tested | 4 | 1 | 3 | Not Available | 4 | 12.0 |
| Propoxycarbazone | Not Tested | 1 | 1 | 1 | Not Available | 1 | 1.0 |
| Propyzamide | Not Tested | 3 | 1 | 4 | Not Available | 3 | 8.3 |
| Prosulfuron | Not Tested | 1 | 1 | 3 | Not Available | 3 | 4.5 |
| Prothioconazole | Not Tested | 4 | 1 | 4 | Not Available | 4 | 13.0 |
| Pymetrozine | Not Tested | 1 | 1 | 1 | Not Available | 1 | 1.0 |
| Pyraclostrobin | Not Tested | 3 | 1 | 4 | Not Available | 3 | 8.3 |
| Pyrazon | Not Tested | 3 | 1 | 1 | Not Available | 4 | 8.0 |
| Pyrazon metabolite A | Not Tested | 3 | 1 | 2 | Not Available | 4 | 9.0 |
| Pyrazon metabolite B | Not Tested | 3 | 1 | 2 | Not Available | 4 | 9.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Pyrethrin I | Not Tested | 2 | 4 | 4 | Not Available | 3 | 9.0 |
| Pyridaben | Not Tested | 2 | 1 | 2 | Not Available | 4 | 7.0 |
| Pyrimethanil | Not Tested | 2 | 1 | 3 | Not Available | 2 | 4.0 |
| Pyriproxifen | Not Tested | 1 | 1 | 4 | Not Available | 1 | 1.8 |
| Pyrithiobac-Sodium | Not Tested | 2 | 1 | 4 | Not Available | 2 | 4.5 |
| Quinclorac | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| Resmethrin | Not Tested | 3 | 1 | 3 | Not Available | 4 | 10.0 |
| Quizalofop-ethyl | Not Tested | 1 | 1 | 1 | Not Available | 1 | 1.0 |
| SD 31723 | Not Tested | 2 | 1 | 4 | Not Available | 3 | 6.8 |
| SD 33608 | Not Tested | 2 | 1 | 4 | Not Available | 3 | 6.8 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| SD 54597 | Not Tested | 3 | 4 | 3 | Not Available | 3 | 9.8 |
| Sethoxydim | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| Sethoxydim hydroxylate sulfone | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| Sethoxydim sulfoxide | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| Sodium acifluorfen | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |
| Spinosad | Not Tested | 3 | 1 | 4 | Not Available | 1 | 2.8 |
| Spirodiclofen | Not Tested | 2 | 1 | 4 | Not Available | 2 | 4.5 |
| Spiromesifen | Not Tested | 2 | 1 | 4 | Not Available | 2 | 4.5 |
| Sulfosulfuron | Not Tested | 2 | 1 | 1 | Not Available | 2 | 3.0 |
| Sulfuryl Fluoride | Not Tested | 3 | 1 | 1 | Not Available | 4 | 8.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| TCP=3,5,6-trichloro-2-pyridinol | Not Tested | 3 | 2 | 1 | Not Available | 4 | 9.0 |
| Tebuconazole | Not Tested | 4 | 1 | 2 | Not Available | 3 | 8.3 |
| Tebufenozide | Not Tested | 3 | 1 | 4 | Not Available | 3 | 8.3 |
| Tebuthiuron | Not Tested | 2 | 1 | 2 | Not Available | 3 | 5.3 |
| Teflubenzuron | Not Tested | Not Available | 1 | Not Available | Not Available | Not Available | 0.0 |
| Tepraloxydim | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| Terbacil | Not Tested | 1 | 1 | 1 | Not Available | 3 | 3.0 |
| Tetraconazole | Not Tested | 4 | 1 | 4 | Not Available | 4 | 13.0 |
| Tetradifon | Not Tested | 1 | 1 | 2 | Not Available | 4 | 5.0 |
| Thiacloprid | Not Tested | 3 | 1 | 2 | Not Available | 3 | 6.8 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Thiamethoxam | Not Tested | 4 | 2 | 1 | Not Available | 4 | 11.0 |
| Thidiazuron | Not Tested | 2 | 1 | 2 | Not Available | 4 | 7.0 |
| Thiophanate methyl | Not Tested | 3 | 1 | 2 | Not Available | 4 | 9.0 |
| THPI | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Topramezone | Not Tested | 1 | 1 | 1 | Not Available | 1 | 1.0 |
| Tralkoxydim | Not Tested | 2 | 1 | 2 | Not Available | 2 | 3.5 |
| Triadimefon | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Triadimefon metabolite KWG 1323 | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Triadimefon metabolite KWG 1342 | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Triadimefon metabolite KWG 1732 | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound / Compound Class* | *Historical Testing for Violations (V)* | *Regulatory Concern[1] (R)* | *Pre-Slaughter Interval[2] (P)* | *Bioconcen-tration[3] (B)* | *Endocrine Disruption[4]* | *Toxicity[5] (T)* | *(((2*R)+P+B)/4)*T* |
|---|---|---|---|---|---|---|---|
| Triadimenol (for metabolites see triadimefon) | Not Tested | 3 | 1 | 4 | Not Available | 4 | 11.0 |
| Triasulfuron | Not Tested | 1 | 1 | 1 | Not Available | 3 | 3.0 |
| Triazole alanine | Not Tested | 4 | 1 | 3 | Not Available | 4 | 12.0 |
| Triazole acetic acid | Not Tested | 4 | 1 | 3 | Not Available | 4 | 12.0 |
| Triclopyr | Not Tested | 3 | 2 | 1 | Not Available | 4 | 9.0 |
| Trifloxystrobin | Not Tested | 2 | 1 | 3 | Not Available | 2 | 4.0 |
| Triflumazole | Not Tested | 4 | 1 | 4 | Not Available | 3 | 9.8 |
| Triflumizole | Not Tested | 4 | 1 | 4 | Not Available | 4 | 13.0 |
| Triphenyltin hydroxide | Not Tested | 1 | 1 | 4 | Not Available | 4 | 7.0 |
| WAK4103 | Not Tested | 3 | 1 | 1 | Not Available | 3 | 6.0 |

**Table 27** (*continued)*
**Scoring Table for Pesticides**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

[1] Scores for regulatory concern, *R*, are provided by EPA.
[2] Scores for withdrawal time *P*, are provided by EPA.
[3] Scores for bioconcentration factor are provided by EPA.
[4] Scores for endocrine disruption are provided by EPA.
[5] Scores for toxicity are provided by EPA.
[6] 5-Hydroxythiabendazole, benomyl (as carbendazim), thiabendazole
[7] Not Tested = not scheduled for sampling by FSIS during the 10 year period, 01/01/1997 - 12/31/2006.
[8] Aldicarb, aldicarb sulfoxide, aldicarb sulfone, carbaryl, carbofuran, carbofuran 3-hydroxy
[9] Carbaryl 5,6-dihydroxy, chlorpropham, propham, thiobencarb, 4-chlorobenzylmethylsulfone,4-chlorobenzylmethylsulfone sulfoxide
[10] Aldrin, alpha-BHC, chlorfenvinphos, chlorpyrifos, cis-chlordane, trans-chlordane, coumaphos-S, p,p'-DDT, p,p'-DDE, dieldrin, PCB 1254, PCB 1260, endosulfan II, endosulfan sulfate, endrin, endrin ketone, heptachlor, heptachlor epoxides, hexachlorobenzene, 2,2',4,4',5,5' hexabromobiphenyl, lindane, methoxychlor, mirex, trans-nonachlor, oxychlordane, ronnel, stirophos (tetrachlorvinphos), p, p'-TDE, toxaphene, captan, carbophenothion, chlordene, chlorpyrifos-methyl, dichlofenthion, endosulfan I, halowaxes, kepone, linuron, phosalone, polybrominated biphenyls, polybrominated diphenyl ethers, beta-BHC, delta-BHC, coumaphos-O, o,p'-DDT, o,p'-DDE, and o,p'-TDE.
[11] Azinphos-methyl, azinphos-methyl oxon, chlorpyrifos, diazinon, diazinon oxon, diazinon met G-27550, dichlorvos, dimethoate, dimethoate oxon, dioxathion, ethion, ethion monooxon, fenthion, fenthion oxon, fenthion oxon sulfone, fenthion oxon sulfoxide, fenthion sulfone, fenthion sulfoxide, malathion, malathion oxon, naled, phosmet, phosmet oxon, pirimiphos-methyl, trichlorfon, tetrachlorvinphos, tetrachlorvinphos-4 metabolites, acephate, methamidophos, chlorpyrifos-methyl, fenamiphos, fenamiphos sulfoxide,fenamiphos sulfone, fenamiphos sulfoxide desisopropyl, fenamiphos sulfone desisopropyl, isofenphos, isofenphos oxon, isofenphos desisopropyl, isofenphos oxon desisopropyl, methidathion, ODM, parathion (ethyl), parathion oxon, parathion methyl, parathion methyl oxon, phorate, phorate oxon, phorate oxon sulfone, phorate oxon sulfoxide, phorate sulfone, phorate sulfoxide, profenofos, sulprofos, sulprofos oxon, sulprofos oxon sulfone, sulprofos oxon sulfoxide, sulprofos sulfone, sulprofos sulfoxide, tribufos (DEF).
[12] Cypermethrin, cis-permethrin, trans-permethrin, fenvalerate, zeta-cypermethrin.
[13] Atrazine, simazine, propazine, terbuthylazine
[14] Atrazine, chloro metabolites, metribuzin, metribuzin DADK, metribuzin DA, metribuzin DK, amitraz, amitraz 2,4-DMA metabs., desdiethyl simazine, desethyl simazine, simazine chloro metabs.

**Table 28**
**Pesticide Compound/Production Class Pairs, Sorted by Sampling Priority Score, with Adjusted Number of Analyses**
**2008 FSIS NRP, Domestic Scheduled Sampling Plan**

| *Compound Class* | *Production Class* | *Priority Score* | *Unadjusted Number of Samples* | *First Adjustment*[1] | *Second Adjustment*[2] | *Third Adjustment*[3] | *Final*[4] |
|---|---|---|---|---|---|---|---|
| CHCs/COPs | Heifers | 113.58 | 300 | 300 | 300 | 300 | 300 |
| CHCs/COPs | Beef cows | 28.05 | 300 | 300 | 300 | 300 | 300 |
| CHCs/COPs | Dairy cows | 22.21 | 300 | 300 | 300 | 300 | 300 |
| CHCs/COPs | Sows | 16.13 | 300 | 230 | 230 | 230 | 230 |
| CHCs/COPs | Lambs | 2.56 | 300 | 300 | 300 | 300 | 300 |
| CHCs/COPs | Boars/stags | 1.38 | 300 | 230 | 230 | 230 | 230 |
| CHCs/COPs | Goats | 0.43 | 300 | 230 | 230 | 230 | 230 |
| CHCs/COPs | Heavy calves | 0.18 | 300 | 300 | 135 | 135 | 135 |
| CHCs/COPs | Sheep | 0.11 | 300 | 230 | 230 | 230 | 230 |
| **Totals** | | | **2,700** | | | | **2,255** |

[1] Adjustment based on FSIS Historical Testing Information. Sampling levels were decreased based on the rules described in the section, *Design of the Domestic Scheduled Sampling Plan for Pesticides*.
[2] Adjustment for Laboratory Capacity as discussed in the section, *Design of the Domestic Scheduled Sampling Plan for Pesticides*
[3] Adjustment for Production Volume as discussed in the section, *Design of the Domestic Scheduled Sampling Plan for Pesticides*
[4] Final adjustment numbers were obtained following an assessment of laboratory capacity and production volume. In addition, FSIS has suspended scheduled sampling for CHCs/COPs in bob veal, horses and minor species (ducks, ratites, geese, rabbits, and squab) since the 2006 NRP

# Design of the Import Reinspection Scheduled Sampling Plan for Pesticides

**I. Selecting and Ranking Candidate Pesticides**

The list of compounds of concern for the import reinspection sampling plan (IRSP) is identical to that for the Domestic Scheduled Sampling Plan (Summary Table III)**.** In ranking pesticides for inclusion in the IRSP, FSIS chose to employ the ranking scores generated for the domestic scheduled sampling plan 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 IRSP.

**II. Prioritizing Candidate Pesticides**

The list of high priority compounds chosen for the IRSP by the SAT is the same as that for the domestic plan. Once the high-priority compounds and compound classes are identified, FSIS applies other considerations to determine which compounds FSIS should sample. The principal factor was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Only the chlorinated hydrocarbon/chlorinated organophosphate (CHCs/COPs) compound class is included in the 2008 NRP. The compounds that can be identified by this multiresidue method (MRM) are listed in the section, *Design of the Domestic Scheduled Sampling Plan for Pesticides*.

**III. Identifying the Compound/Production Class (C/PC) Pairs**

As with the domestic scheduled sampling plan, the import reinspection sampling for CHCs and COPs is used as a means of monitoring incidents of accidental and environmental contamination.

**IV. Allocation of Sampling Resources**

*Egg Products*

The samples for residue analysis for imported egg products are selected in a different manner than the other product classes. In order to establish a history of compliance with the U.S. requirements for each 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 inspection is reduced to a random selection of one reinspection out of eight product lots from each foreign establishment. This reinspection rate continues as long as the product is in compliance.

*Animal Product Classes*

Table 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 equation:

Equation 15

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

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

Equation 16

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

Based on the scores, one of the following sampling options is chosen: (1) high regulatory concern (300 analyses/year); (2) moderate regulatory concern (230 samples/year); or (3) low regulatory concern (90 samples/year). This is indicated in Table 29, *Number of Pesticide Samples/Product Class*, in the column "Number of Samples."

In the IRSP, FSIS will not test processed products (1) from foreign countries eligible to ship fresh products to the United States; and (2) from eligible countries in which the source of raw materials is from other foreign countries that are eligible to ship fresh products and are actively exporting to the United States**.** Processed beef from Australia, Brazil, Canada, Mexico, New Zealand, Uruguay, combination products (varied) and veal from Canada, lamb and meat from Australia, Canada and New Zealand, pork from Canada, Denmark, Mexico and Netherlands, chicken processed and turkey from Canada and Mexico and ducks/geese from Canada and France will not be sampled because the raw materials used are from countries eligible to ship raw products to the U.S.

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 veal, fresh is imported from only three countries and the amount imported is 0.10 % relative to total U.S. imports, 24 samples of veal, fresh would be taken for each analysis, eight samples from each country.

The adjusted number of samples is listed in Table 29, *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 29, 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 is 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 where the Total Volume Imported is Less Than One Percent*

If the amount of an import product class is less than one percent in a specific country, eight samples per compound/compound class are taken from that country. The relative amounts of veal processed, lamb/mutton processed, goat fresh and processed, turkey fresh and processed, other fowl fresh and processed, varied combination fresh and processed, ratite fresh and guineas/squabs are less than one percent. Also, as stated above, if a country is exporting both fresh and processed products or sources all its 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 30-42.

*Allocation if Samples in Product Classes where the Total Volume Imported is Greater than One Percent*

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 8, *Estimated Annual Amount 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 9, *Relative Annual Amount of Product Imported/Country.*

Equation 17

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

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:

Equation 18

$$\text{Unadjusted Number of Samples per Country } (U_{C/S}) = \text{Total Number of Samples} \times \frac{(P_{C/C})}{100}$$

This is indicated in the column labeled "Unadjusted Number of Samples ($U_{C/S}$)," in Tables 30-42.

After determining 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 30-42. 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 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 adjustment is accomplished using the following equation:

Equation 19

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

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

If a country is exporting both fresh and processed products or sources all of their raw materials from eligible sources, then no residue samples will be processed from that country.

**Table 29**
**Number of Pesticide Samples/Product Class**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| No. of Countries | Product | Pesticide | Pesticide Score | Percent Product | Relative Sampling Priority | Number of Samples | Adjusted Number of Samples | Final Number of Samples |
|---|---|---|---|---|---|---|---|---|
| 11 | Beef fresh | CHCs/COPs | 16 | 56.39 | 902.27 | 300 | 300 | 300 |
| 7 | Beef processed | CHCs/COPs | 16 | 6.54 | 104.70 | 80 | 79 | 79 |
| 12 | Pork fresh | CHCs/COPs | 16 | 22.68 | 362.99 | 230 | 230 | 230 |
| 12 | Pork, processed | CHCs/COPs | 16 | 1.67 | 26.78 | 64 | 64 | 64 |
| 3 | Veal, fresh | CHCs/COPs | 16 | 1.72 | 27.58 | 0 | 0 | 0 |
| 1 | Veal, processed | CHCs/COPs | 16 | 0.001 | 0.01 | 0 | 0 | 0 |
| 5 | Lamb/Mutton, fresh | CHCs/COPs | 16 | 4.68 | 74.93 | 113 | 90 | 90 |
| 3 | Lamb/Mutton processed | CHCs/COPs | 16 | 0.01 | 0.14 | 0 | 0 | 0 |
| 2 | Goat, fresh | CHCs/COPs | 16 | 0.69 | 11.06 | 24 | 24 | 24 |
| 2 | Turkey, fresh | CHCs/COPs | 16 | 0.44 | 7.06 | 16 | 16 | 16 |
| 1 | Ratite, fresh | CHCs/COPs | 16 | 0.01 | 0.13 | 0 | 0 | 0 |
| 2 | Chicken, fresh | CHCs/COPs | 16 | 1.83 | 29.22 | 16 | 16 | 16 |
| 3 | Chicken, processed | CHCs/COPs | 16 | 2.31 | 36.89 | 8 | 8 | 8 |
| 3 | Turkey, processed | CHCs/COPs | 16 | 0.34 | 5.46 | 8 | 8 | 8 |
| 2 | Other fowl, fresh | CHCs/COPs | 16 | 0.13 | 2.13 | 16 | 16 | 16 |
| 2 | Other fowl, processed | CHCs/COPs | 16 | 0.003 | 0.04 | 0 | 0 | 0 |
| 1 | Varied combination, fresh | CHCs/COPs | 16 | 0.001 | 0.02 | 8 | 8 | 8 |
| 3 | Varied combination, processed | CHCs/COPs | 16 | 0.54 | 8.59 | 16 | 16 | 16 |
| 1 | Guinea/Squab | CHCs/COPs | 16 | 4.8E-08 | 0.00 | 0 | 0 | 0 |
| | Total | | | 100.00% | | **899** | **875** | **875** |

**Table 30**
**Number of Samples/Product Class – Pork Processed**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| CHCs/COPs | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Final Adj |
|---|---|---|---|---|
| Belgium | 1.45 | 1 | 8 | 8 |
| Canada | 0.86 | 1 | 0 | 0[1] |
| Croatia | 0.86 | 1 | 8 | 8 |
| Denmark | 30.00 | 27 | 0 | 0[1] |
| France | 0.01 | 0 | 8 | 8 |
| Germany | 1.82 | 2 | 8 | 8 |
| Hungary | 2.12 | 2 | 8 | 8 |
| Italy | 13.00 | 12 | 8 | 8 |
| Mexico | 18.00 | 16 | 0 | 0[1] |
| Netherlands | 3.00 | 3 | 0 | 0[1] |
| Poland | 27.00 | 24 | 8 | 8 |
| Spain | 2.70 | 2 | 8 | 8 |
| **Total** | **100** | **91** | **64** | **64** |

**Table 31**
**Number of Samples /Product Class - Goat, Fresh**
**2008 Import Reinspection Sampling Plan**

| CHCs/COPs | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Final Adj |
|---|---|---|---|---|
| Australia | 96.7 | 8 | | 8 |
| Mexico | 0.2 | 8 | | 8 |
| New Zealand | 3.1 | 8 | | 8 |
| **Total** | **100** | **24** | | **24** |

**Table 32**
**Number of Samples /Product Class – Turkey, Fresh**
**2008 Import Reinspection Sampling Plan**

| CHCs/COPs | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Final Adj |
|---|---|---|---|---|
| Canada | 99.999 | 8 | | 8 |
| Mexico | 0.001 | 8 | | 8 |
| **Total** | **100** | **16** | | **16** |

**Table 33**
**Number of Samples /Product Class – Turkey Processed**
**2008 Import Reinspection Sampling Plan**

| CHCs/COPs | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Final Adj |
|---|---|---|---|---|
| Canada | 44.55 | 8 | | 0[1] |
| Israel | 1.13 | 8 | | 8 |
| Mexico | 54.32 | 8 | | 0[1] |
| **Total** | **100** | **24** | | **8** |

**Table 34**
**Number of Samples/Product Class – Other Fowl, Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| CHCs/COPs | %Product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust # 1 | Final Adj |
|---|---|---|---|---|
| Canada | 96 | 8 | 8 | 8 |
| France | 4 | 8 | 8 | 8 |
| **Total** | **100** | **16** | **16** | **16** |

**Table 35**
**Number of Samples /Product Class – Chicken, Fresh**
**2008 Import Reinspection Sampling Plan**

| CHCs/COPs | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Final Adj |
|---|---|---|---|---|
| Canada | 99.98 | 8 | | 8 |
| Mexico | 0.018 | 8 | | 8 |
| **Total** | **100** | **16** | | **16** |

**Table 36**
**Number of Samples /Product Class – Varied Combination, Fresh**
**2008 FSIS NRP Import Reinspection Sampling Plan**

| CHCs/COPs | %Product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust # 1 (8/country) | Final Adj |
|---|---|---|---|---|
| Canada | **100** | **8** | **8** | **8** |

**Table 37**
**Number of Samples /Product Class - Varied Combination, Processed**
**2008 FSIS NRP, Import Monitoring Plan**

| CHCs/COPs | %Product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust # 1 | Final Adj |
|---|---|---|---|---|
| Australia | 0.07 | 8 | 8 | 8 |
| Canada | 74 | 8 | 0 | 0[1] |
| Mexico | 25.9 | 8 | 8 | 8 |
| **Total** | **99.97** | **32** | **24** | **16** |

**Table 38**
**Number of Samples/Product Class - Beef, Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| CHCs/COPs | %product (Pc/c) | Uc/s=300*(Pc/c)/100 | Adjust #1 | Initial Adj | Adjust # 2 | Final Adj |
|---|---|---|---|---|---|---|
| Australia | 32 | 96 | 0 | 96 | 82 | 82 |
| Brazil | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Canada | 32 | 96 | 0 | 96 | 82 | 82 |
| Chile | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Costa Rica | 0.7 | 2.1 | 8 | 8 | 8 | 8 |
| Honduras | 0.04 | 0.12 | 8 | 8 | 8 | 8 |
| Japan | 0.001 | 0.003 | 8 | 8 | 8 | 8 |
| Mexico | 1.5 | 4.5 | 8 | 8 | 8 | 8 |
| New Zealand | 19 | 57 | 0 | 57 | 49 | 49 |
| Nicaragua | 2.6 | 7.8 | 8 | 8 | 8 | 8 |
| Uruguay | 12 | 36 | 0 | 36 | 31 | 31 |
| **Total** | **100** | **300** | **56** | **341** | **300** | **300** |

**Table 39**
**Number of Samples/Product Class - Beef, Processed**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| CHCs/COPs | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Initial Adj | Adjust # 2 | Final Adj |
|---|---|---|---|---|---|---|
| Argentina | 19.8 | 27 | 0 | 27 | 26 | 26 |
| Australia | 1.22 | 1.098 | 8 | 8 | 0 | 0[1] |
| Brazil | 61.15 | 55.035 | 0 | 0 | 53 | 53 |
| Canada | 9.33 | 8.397 | 0 | 0 | 0 | 0[1] |
| Mexico | 2.5 | 2.25 | 8 | 8 | 0 | 0[1] |
| New Zealand | 1.23 | 1.107 | 8 | 8 | 0 | 0[1] |
| Uruguay | 4.8 | 4.32 | 8 | 0 | 0 | 0[1] |
| **Total** | **100.03** | **72.207** | **32** | **51** | **80** | **79** |

**Table 40**
**Number of Samples/Product Class – Pork, Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| CHCs/COPs | %product (Pc/c) | Uc/s=230*(Pc/c)/100 | Adjust #1 | Initial Adj | Adjust # 2 | Final Adj |
|---|---|---|---|---|---|---|
| Australia | 0.01 | 0.023 | 1 | 8 | 8 | 8 |
| Canada | 87 | 200 | 200 | 200 | 135 | 135 |
| Chile | 0.1 | 0.23 | 1 | 8 | 8 | 8 |
| Denmark | 10 | 23 | 21 | 21 | 15 | 15 |
| Finland | 0.3 | 0.69 | 1 | 8 | 8 | 8 |
| Ireland | 0.5 | 1.15 | 1 | 8 | 8 | 8 |
| Mexico | 0.37 | 0.851 | 1 | 8 | 8 | 8 |
| Netherlands | 3 | 6.9 | 1 | 8 | 8 | 8 |
| N. Ireland | 0.22 | 0.506 | 1 | 8 | 8 | 8 |
| New Zealand | 0.01 | 0.023 | 1 | 8 | 8 | 8 |
| Sweden | 0.1 | 0.23 | 1 | 8 | 8 | 8 |
| United Kingdom | 0.16 | 0.368 | 1 | 8 | 8 | 8 |
| **Total** | **100** | **230** | **231** | **301** | **230** | **230** |

**Table 41**
**Number of Samples /Product Class - Lamb/Mutton, Fresh**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| CHCs/COPs | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Initial Adj | Adjust # 2 | Final Adj |
|---|---|---|---|---|---|---|
| Australia | 73.5 | 66.15 | 66 | 66 | 43 | 43 |
| Canada | 0.24 | 0.216 | 0 | 8 | 8 | 8 |
| Chile | 0.004 | 0.0036 | 0 | 8 | 8 | 8 |
| Iceland | 0.1 | 0.09 | 0 | 8 | 8 | 8 |
| Mexico | 0.01 | 0.009 | 0 | 8 | 8 | 8 |
| New Zealand | 26.2 | 23.58 | 23 | 23 | 15 | 15 |
| **Total** | **100** | **90.0486** | **89** | **121** | **90** | **90** |

**Table 42**
**Number of Samples/Product Class - Chicken, Processed**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| CHCs/COPs | %product (Pc/c) | Uc/s=90*(Pc/c)/100 | Adjust #1 | Initial Adj | Adjust # 2 | Final Adj |
|---|---|---|---|---|---|---|
| Canada | 83.7 | 75.33 | 8 | 0 | 0 | 0[1] |
| Israel | 0.42 | 0.378 | 8 | 8 | 8 | 8 |
| Mexico | 16 | 14.4 | 8 | 0 | 0 | 0[1] |
| **Total** | **100** | **90** | **24** | **8** | **8** | **8** |

[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

# Scheduled Sampling Plans for Environmental and Processing Contaminants

The candidate environmental and processing contaminants of concern selected by members of the SAT were as follows:

**A. Environmental Contaminants**

- Heavy metals
- Mycotoxins

**B. Processing Contaminants**

- Nitrosamines
- Maillard reaction products (from charring)
- Compounds migrating from packaging
- Polyaromatic hydrocarbons
- Breakdown products of oils used in deep frying

Heavy metals were identified by the SAT as meriting inclusion in the NRP. FSIS will conduct an exploratory assessment of the heavy metals, lead and cadmium in the production class, "beef cows." An exploratory assessment sampling for lead and cadmium began in 2003 (October through December; heifers and dairy cows) and continued through 2004 (boars and stags, dairy cows, heifers, and mature chickens), 2005 for steers, 2006 for mature chickens and 2007 for mature turkeys. Sampling for 2008 is summarized in Table 45.

No processing contaminants have been designated for analysis in year 2008.

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 exploratory assessment plan.

**Table 43**
**Number of Samples/Product Class for Lead and Cadmium**
**2008 FSIS NRP Domestic Specifically Designed Survey**

| Production Class | Compound | Number of Samples |
|---|---|---|
| Beef cows | Lead | 300 |
| Beef cows | Cadmium | 300 |
| **Total** | | **600** |

# Sampling Plan for Exploratory Assessments

## Bob Veal Antibiotic Retained (BOVAR)

Bob veal antibiotic retained (BOVAR) is a scheduled sampling exploratory assessment that is reactive to the unacceptable antibiotic violation rate obtained from previous scheduled sampling exposure assessments for bob veal calves. There are two purposes for BOVAR. The first is to determine what effect condemning antibiotic violative bob veal calf carcasses will have on the violation rate of the scheduled sampling for antibiotics in bob veal calves. The hypothesis is that BOVAR will reduce the antibiotic violation rate in scheduled sampling of bob veal calves. Further analysis will be necessary to verify that Establishment Hazard Analysis and Critical Control Point (HACCP) Plans are in control. The second purpose of BOVAR is to initiate hold and test in bob veal calves to assess the implementation. BOVAR was initiated in the 2007 NRP and will continue in the 2008 NRP.

**Table 44**
**2008 FSIS NRP Exploratory Domestic Assessments for Bob Veal Antibiotic Retained (BOVAR)**

| *Compound or Compound Class* | *Production Class* | *Number of Samples* |
|---|---|---|
| Antibiotics | Bob veal calves | 90 |
| **Total** | **Total Samples** | **90** |

# Summary of Domestic and Import Sampling Plans

**Domestic Sampling Plan**

The number of scheduled samples for veterinary drugs, environmental contaminants and pesticides in all production classes is listed in Table 45, *Domestic Sampling Plan: Summary I, 2008 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments*. The table also specifies, for each combination of compound and production class, which FSIS laboratory will be conducting the analyses and the sampling plan type. For the convenience of the reader, this information is also presented in summary form (including all sampling numbers, but not including the laboratory and sampling plan designation), in Table 46, *Detailed Sampling Plan: Summary II, 2008 FSIS NRP, Domestic Sampling and Exploratory Assessments*.

**Import Sampling Plan**

The final detailed import plan sample numbers for all compounds (veterinary drugs, pesticides and unavoidable contaminants), in all production classes and all countries, are listed in Table 47, *Summary, 2008 FSIS NRP, Import Monitoring Plan*. A summary of the total number of samples per compound per production class is presented in Table 48, *Number of Compounds/Product Class, 2008 FSIS NRP, Import Monitoring Plan.* In Table 49, *Number of Samples/Country/Product Class, 2008 FSIS NRP, Import Monitoring Plan*, the number of samples per country per production class is listed. A summary of all sampling plans (domestic and import) is provided in Table 50, *Combined Summary, 2008 FSIS NRP, Domestic and Import Sampling Plans and Exploratory Assessment.*

**Table 45**
**Domestic Sampling Plan: Summary I**
**2008 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

| Analysis | Lab | Production Class | Number of Samples | Plan Type |
|---|---|---|---|---|
| Antibiotics by Bioassay | ML | Boars/stags | 300 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Bob veal | 230 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Bulls | 300 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Dairy cows | 230 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Ducks | 45 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Formula-fed veal | 300 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Goats | 90 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Heavy calves | 95 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Heifers | 300 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Lambs | 230 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Market hogs | 300 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Mature chickens | 300 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Mature sheep | 60 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Mature turkeys | 300 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Non-Formula-fed veal | 90 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Rabbits | 45 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Roaster pigs | 300 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Sows | 230 | Scheduled Sampling |
| Antibiotics by Bioassay | ML | Steers | 300 | Scheduled Sampling |
| **Total Antibiotics by Bioassay** | | | **4,045** | |
| | | | | |
| Arsenicals | EL | Beef cows | 300 | Scheduled Sampling |
| Arsenicals | EL | Egg products | 300 | Scheduled Sampling |
| Arsenicals | EL | Mature turkeys | 300 | Scheduled Sampling |
| **Total Arsenicals** | | | **900** | |
| | | | | |
| Avermectins | EL | Boars/stags | 300 | Scheduled Sampling |
| Avermectins | EL | Bulls | 300 | Scheduled Sampling |
| Avermectins | EL | Goats | 230 | Scheduled Sampling |
| Avermectins | EL | Heavy calves | 135 | Scheduled Sampling |
| Avermectins | EL | Lambs | 300 | Scheduled Sampling |
| Avermectins | EL | Mature sheep | 230 | Scheduled Sampling |
| Avermectins | EL | Non-Formula-fed veal | 90 | Scheduled Sampling |
| Avermectins | EL | Rabbits | 45 | Scheduled Sampling |
| Avermectins | EL | Roaster pigs | 300 | Scheduled Sampling |
| Avermectins | EL | Sows | 300 | Scheduled Sampling |
| **Total Avermectins** | | | **2,230** | |

**Table 45** (*continued)*
**Domestic Sampling Plan: Summary I**
**2008 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

| Analysis | Lab | Production Class | Number of Samples | Plan Type |
|---|---|---|---|---|
| *beta*-Agonists | WL | Goats | 230 | Scheduled Sampling |
| *beta*-Agonists | WL | Market hogs | 300 | Scheduled Sampling |
| *beta*-Agonists | WL | Non-Formula-fed veal | 90 | Scheduled Sampling |
| **Total *beta*-Agonists[1]** | | | **620** | |
| | | | | |
| Bob Veal Antibiotic Retained | ML | Bob veal | 90 | Exploratory Assessment |
| | | | | |
| Carbadox | WL | Market hogs | 300 | Scheduled Sampling |
| Carbadox | WL | Roaster pigs | 300 | Scheduled Sampling |
| **Total Carbadox** | | | **600** | |
| | | | | |
| Chloramphenicol | EL | Bob veal | 300 | Scheduled Sampling |
| Chloramphenicol | EL | Heifers | 300 | Scheduled Sampling |
| Chloramphenicol | EL | Mature chickens | 300 | Scheduled Sampling |
| Chloramphenicol | EL | Mature turkeys | 300 | Scheduled Sampling |
| Chloramphenicol | EL | Steers | 300 | Scheduled Sampling |
| **Total Chloramphenicol** | | | **1,500** | |
| | | | | |
| CHCs/COPs | WL | Beef cows | 300 | Scheduled Sampling |
| CHCs/COPs | WL | Boars/stags | 230 | Scheduled Sampling |
| CHCs/COPs | WL | Dairy cows | 300 | Scheduled Sampling |
| CHCs/COPs | WL | Goats | 230 | Scheduled Sampling |
| CHCs/COPs | WL | Heavy calves | 135 | Scheduled Sampling |
| CHCs/COPs | WL | Heifers | 300 | Scheduled Sampling |
| CHCs/COPs | WL | Lambs | 300 | Scheduled Sampling |
| CHCs/COPs | WL | Mature sheep | 230 | Scheduled Sampling |
| CHCs/COPs | WL | Sows | 230 | Scheduled Sampling |
| **Total CHCs/COPs** | | | **2,255** | |
| | | | | |
| Florfenicol | EL | Beef cows | 230 | Scheduled Sampling |
| Florfenicol | EL | Boars/stags | 0 | Not scheduled |
| Florfenicol | EL | Bulls | 0 | Not scheduled |
| Florfenicol | EL | Dairy cows | 0 | Not scheduled |
| Florfenicol | EL | Mature chickens | 230 | Scheduled Sampling |
| Florfenicol | EL | Non-formula-fed veal | 90 | Scheduled Sampling |
| Florfenicol | EL | Sows | 0 | Not scheduled |
| Florfenicol | EL | Young chickens | 0 | Not scheduled |
| **Total Florfenicol** | | | **550** | |

**Table 45** (*continued)*
**Domestic Sampling Plan: Summary I**
**2008 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

| Analysis | Lab | Production Class | Number of Samples | Plan Type |
|---|---|---|---|---|
| Flunixin | ML | Beef cows | 0 | Not Scheduled |
| Flunixin | ML | Bulls | 90 | Scheduled Sampling |
| Flunixin | ML | Dairy cows | 90 | Scheduled Sampling |
| Flunixin | ML | Heavy calves | 0 | Not Scheduled |
| **Total Flunixin** | | | **180** | |
| | | | | |
| Lead, Cadmium, and Arsenic | EL | Beef cows | 300 | Exploratory Assessment |
| **Total Lead, Cadmium, and Arsenic** | | | **300** | |
| | | | | |
| Melengestrol Acetate (MGA) | WL | Heifers | 300 | Scheduled Sampling |
| **Total MGA** | | | **300** | |
| | | | | |
| Nitrofurans | WL | Dairy cows | 230 | Scheduled Sampling |
| Nitrofurans | WL | Market hogs | 300 | Scheduled Sampling |
| Nitrofurans | WL | Sows | 300 | Scheduled Sampling |
| **Total Nitrofurans** | | | **830** | |
| | | | | |
| Nitroimidazoles | EL | Young chickens | 300 | Scheduled Sampling |
| **Total Nitroimidazoles** | | | **300** | |
| | | | | |
| Sulfonamides | EL | Bob veal | 230 | Scheduled Sampling |
| Sulfonamides | EL | Dairy cows | 230 | Scheduled Sampling |
| Sulfonamides | EL | Egg products | 300 | Scheduled Sampling |
| Sulfonamides | EL | Goats | 230 | Scheduled Sampling |
| Sulfonamides | EL | Heavy calves | 135 | Scheduled Sampling |
| Sulfonamides | EL | Heifers | 300 | Scheduled Sampling |
| Sulfonamides | EL | Market hogs | 230 | Scheduled Sampling |
| Sulfonamides | EL | Mature chickens | 300 | Scheduled Sampling |
| Sulfonamides | EL | Non-formula-fed veal | 90 | Scheduled Sampling |
| Sulfonamides | EL | Roaster pigs | 230 | Scheduled Sampling |
| Sulfonamides | EL | Sows | 300 | Scheduled Sampling |
| Sulfonamides | EL | Steers | 230 | Scheduled Sampling |
| Sulfonamides | EL | Young chickens | 300 | Scheduled Sampling |
| **Total Sulfonamides** | | | **3,105** | |
| | | | | |
| Thyreostats | EL | Beef cows | 300 | Scheduled Sampling |
| **Total Thyreostats** | | | **300** | |
| | | | | |
| Xenobiotic hormones | ML | Formula-fed veal | 90 | Scheduled Sampling |
| Xenobiotic hormones | ML | Non-formula-fed veal | 90 | Scheduled Sampling |
| **Total Xenobiotic hormones**[2] | | | **180** | |
| | | | | |

[1] beta-Agonists: Ractopamine, Zilpaterol, Cimaterol, Salbutamol, and Clenbuterol
[2] Xenobiotic hormones: Trenbolone and Zeranol

**Key:**
CHCs = Chlorinated hydrocarbons
COPs = Chlorinated organophosphates
EL = FSIS Eastern Laboratory, Athens, GA
ML = FSIS Midwestern Laboratory, St. Louis, MO
WL = FSIS Western Laboratory, Alameda, CA

**Note:** FAST samples will be screened for Phenylbutazone and Flunixin as part of inspector generated sampling plan

**Table 46**
**Domestic Sampling Plan: Summary II**
**2008 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

| **Production Class** | Antibiotics | Arsenicals | Avermectins | ß-Agonists | Carbadox | CHCs/COPs |
|---|---|---|---|---|---|---|
| Bulls | 300 | 0 | 300 | 0 | 0 | 0 |
| Beef cows | 0 | 300 | 0 | 0 | 0 | 300 |
| Dairy cows | 230 | 0 | 0 | 0 | 0 | 300 |
| Heifers | 300 | 0 | 0 | 0 | 0 | 300 |
| Steers | 300 | 0 | 0 | 0 | 0 | 0 |
| Bob veal | 230 | 0 | 0 | 0 | 0 | 0 |
| Formula-fed veal | 300 | 0 | 0 | 0 | 0 | 0 |
| Non-Formula-fed veal | 90 | 0 | 90 | 90 | 0 | 0 |
| Heavy calves | 95 | 0 | 135 | 0 | 0 | 135 |
| **Subtotal, Cattle** | **1,935** | **300** | **525** | **90** | **0** | **1,035** |
| | | | | | | |
| Market hogs | 300 | 0 | 0 | 300 | 300 | 0 |
| Roaster pigs | 300 | 0 | 300 | 0 | 300 | 0 |
| Boars/Stags | 300 | 0 | 300 | 0 | 0 | 230 |
| Sows | 230 | 0 | 300 | 0 | 0 | 230 |
| **Subtotal, Swine** | **1,130** | **0** | **900** | **300** | **600** | **460** |
| | | | | | | |
| Mature sheep | 60 | 0 | 230 | 0 | 0 | 230 |
| Lambs | 230 | 0 | 300 | 0 | 0 | 300 |
| Goats | 90 | 0 | 230 | 230 | 0 | 230 |
| **Subtotal, Ovine** | **380** | **0** | **760** | **230** | **0** | **760** |
| | | | | | | |
| **Total, All Livestock** | **3,445** | **300** | **2,185** | **620** | **600** | **2,255** |
| | | | | | | |
| Young chickens | 0 | 0 | 0 | 0 | 0 | 0 |
| Mature chickens | 300 | 0 | 0 | 0 | 0 | 0 |
| Young turkeys | 0 | 0 | 0 | 0 | 0 | 0 |
| Mature turkeys | 300 | 300 | 0 | 0 | 0 | 0 |
| Ducks | 45 | 0 | 0 | 0 | 0 | 0 |
| Geese | 0 | 0 | 0 | 0 | 0 | 0 |
| **Subtotal, Poultry** | **645** | **300** | **0** | **0** | **0** | **0** |
| | | | | | | |
| Rabbits | 45 | 0 | 45 | 0 | 0 | 0 |
| Egg products | 0 | 300 | 0 | 0 | 0 | 0 |
| | | | | | | |
| **Total, All Production Classes** | **4,135** | **900** | **2,230** | **620** | **600** | **2,255** |

**Table 46** (*continued)*
**Domestic Sampling Plan: Summary II**
**2008 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

| **Production Class** | Chloramphenicol | Florfenicol | Flunixin | Lead and Cadmium |
|---|---|---|---|---|
| Bulls | 0 | 0 | 90 | 0 |
| Beef cows | 0 | 230 | 0 | 300 |
| Dairy cows | 0 | 0 | 90 | 0 |
| Heifers | 300 | 0 | 0 | 0 |
| Steers | 300 | 0 | 0 | 0 |
| Bob veal | 300 | 0 | 0 | 0 |
| Formula-fed veal | 0 | 0 | 0 | 0 |
| non-Formula-fed veal | 0 | 90 | 0 | 0 |
| Heavy calves | 0 | 0 | 0 | 0 |
| **Subtotal, Cattle** | **900** | **320** | **180** | **300** |
| | | | | |
| Market hogs | 0 | 0 | 0 | 0 |
| Roaster pigs | 0 | 0 | 0 | 0 |
| Boars/Stags | 0 | 0 | 0 | 0 |
| Sows | 0 | 0 | 0 | 0 |
| **Subtotal, Swine** | **0** | **0** | **0** | **0** |
| | | | | |
| Goats | 0 | 0 | 0 | 0 |
| Mature sheep | 0 | 0 | 0 | 0 |
| Lambs | 0 | 0 | 0 | 0 |
| **Subtotal, Ovine** | **0** | **0** | **0** | **0** |
| | | | | |
| **Total, All Livestock** | **900** | **320** | **180** | **300** |
| | | | | |
| Young chickens | 0 | 0 | 0 | 0 |
| Mature chickens | 300 | 230 | 0 | 0 |
| Young turkeys | 0 | 0 | 0 | 0 |
| Mature turkeys | 300 | 0 | 0 | 0 |
| Ducks | 0 | 0 | 0 | 0 |
| Geese | 0 | 0 | 0 | 0 |
| **Subtotal, Poultry** | **600** | **230** | **0** | **0** |
| | | | | |
| Rabbits | 0 | 0 | 0 | 0 |
| Egg products | 0 | 0 | 0 | 0 |
| | | | | |
| **Total, All Production Classes** | **1,500** | **550** | **180** | **300** |

**Table 46** (*continued)*
**Domestic Sampling Plan: Summary II**
**2008 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

| **Production Class** | Melengesterol acetate (MGA) | Nitrofurans | Nitroimidazoles | Sulfonamides |
|---|---|---|---|---|
| Bulls | 0 | 0 | 0 | 0 |
| Beef cows | 0 | 0 | 0 | 0 |
| Dairy cows | 0 | 230 | 0 | 230 |
| Heifers | 300 | 0 | 0 | 300 |
| Steers | 0 | 0 | 0 | 230 |
| Bob veal | 0 | 0 | 0 | 230 |
| Formula-fed veal | 0 | 0 | 0 | 0 |
| non-Formula-fed veal | 0 | 0 | 0 | 90 |
| Heavy calves | 0 | 0 | 0 | 135 |
| **Subtotal, Cattle** | **300** | **230** | **0** | **1,215** |
| | | | | |
| Market hogs | 0 | 300 | 0 | 230 |
| Roaster pigs | 0 | 0 | 0 | 230 |
| Boars/Stags | 0 | 0 | 0 | 0 |
| Sows | 0 | 300 | 0 | 300 |
| **Subtotal, Swine** | **0** | **600** | **0** | **760** |
| | | | | |
| Mature sheep | 0 | 0 | 0 | 0 |
| Lambs | 0 | 0 | 0 | 0 |
| Goats | 0 | 0 | 0 | 230 |
| **Subtotal, Ovine** | **0** | **0** | **0** | **230** |
| | | | | |
| | | | | |
| **Total, All Livestock** | **300** | **830** | **0** | **2,205** |
| | | | | |
| Young chickens | 0 | 0 | 300 | 300 |
| Mature chickens | 0 | 0 | 0 | 300 |
| Young turkeys | 0 | 0 | 0 | 0 |
| Mature turkeys | 0 | 0 | 0 | 0 |
| Ducks | 0 | 0 | 0 | 0 |
| Geese | 0 | 0 | 0 | 0 |
| **Subtotal, Poultry** | **0** | **0** | **300** | **600** |
| | | | | |
| Rabbits | 0 | 0 | 0 | 0 |
| Egg products | 0 | 0 | 0 | 300 |
| | | | | |
| **Total, All Production Classes** | **300** | **830** | **300** | **3,105** |

**Table 46** (*continued)*
**Domestic Sampling Plan: Summary II**
**2008 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

| **Production Class** | Thyreostats | Trenbolone | Zeranol |
|---|---|---|---|
| Bulls | 0 | 0 | 0 |
| Beef cows | 300 | 0 | 0 |
| Dairy cows | 0 | 0 | 0 |
| Heifers | 0 | 0 | 0 |
| Steers | 0 | 0 | 0 |
| Bob veal | 0 | 0 | 0 |
| Formula-fed veal | 0 | 90 | 90 |
| non-Formula-fed veal | 0 | 90 | 90 |
| Heavy calves | 0 | 0 | 0 |
| **Subtotal, Cattle** | **300** | **180** | **180** |
| | | | |
| Market hogs | 0 | 0 | 0 |
| Roaster pigs | 0 | 0 | 0 |
| Boars/Stags | 0 | 0 | 0 |
| Sows | 0 | 0 | 0 |
| **Subtotal, Swine** | **0** | **0** | **0** |
| | | | |
| Mature sheep | 0 | 0 | 0 |
| Lambs | 0 | 0 | 0 |
| Goats | 0 | 0 | 0 |
| **Subtotal, Ovine** | **0** | **0** | **0** |
| | | | |
| **Total, All Livestock** | **300** | **180** | **180** |
| | | | |
| Young chickens | 0 | 0 | 0 |
| Mature chickens | 0 | 0 | 0 |
| Young turkeys | 0 | 0 | 0 |
| Mature turkeys | 0 | 0 | 0 |
| Ducks | 0 | 0 | 0 |
| Geese | 0 | 0 | 0 |
| **Subtotal, Poultry** | **0** | **0** | **0** |
| | | | |
| Rabbits | 0 | 0 | 0 |
| Egg products | 0 | 0 | 0 |
| | | | |
| **Total, All Production Classes** | **300** | **180** | **180** |

## Table 47
**Number of Samples/Product Class**
**2008 FSIS, NRP, Import Reinspection Sampling Plan**

| | | | |
|---|---|---|---|
| Belgium | Pork Processed | Sulfonamides | 8 |
| Canada | Pork Processed | Sulfonamides | 0 |
| Croatia | Pork Processed | Sulfonamides | 8 |
| Denmark | Pork Processed | Sulfonamides | 0 |
| France | Pork Processed | Sulfonamides | 8 |
| Germany | Pork Processed | Sulfonamides | 8 |
| Hungary | Pork Processed | Sulfonamides | 8 |
| Italy | Pork Processed | Sulfonamides | 8 |
| Mexico | Pork Processed | Sulfonamides | 0 |
| Netherlands | Pork Processed | Sulfonamides | 0 |
| Poland | Pork Processed | Sulfonamides | 8 |
| Spain | Pork Processed | Sulfonamides | 8 |
| Australia | Goat Fresh | Avermectins | 8 |
| Mexico | Goat Fresh | Avermectins | 8 |
| New Zealand | Goat Fresh | Avermectins | 8 |
| Canada | Turkeys Fresh | Antibiotics | 8 |
| Mexico | Turkeys Fresh | Antibiotics | 8 |
| Canada | Turkeys Fresh | Sulfonamides | 8 |
| Mexico | Turkeys Fresh | Sulfonamides | 8 |
| Canada | Turkeys Fresh | Chloramphenicol | 8 |
| Mexico | Turkeys Fresh | Chloramphenicol | 8 |
| Canada | Turkeys Fresh | Arsenicals | 8 |
| Mexico | Turkeys Fresh | Arsenicals | 8 |
| Israel | Turkey Processed | Arsenicals | 8 |
| Israel | Turkey Processed | Sulfonamides | 8 |
| Canada | Chicken fresh | Antibiotics | 8 |
| Mexico | Chicken fresh | Antibiotics | 8 |
| Canada | Chicken fresh | Arsenicals | 8 |
| Mexico | Chicken fresh | Arsenicals | 8 |
| Canada | Chicken fresh | Chloramphenicol | 8 |
| Mexico | Chicken fresh | Chloramphenicol | 8 |
| Canada | Chicken fresh | Nitroimidazole | 8 |
| Mexico | Chicken fresh | Nitroimidazole | 8 |
| Canada | Varied combination Fresh | Antibiotics | 8 |
| Canada | Varied combination Fresh | Sulfonamides | 8 |
| Australia | Varied combination Processed | Sulfonamides | 8 |
| Canada | Varied combination Processed | Sulfonamides | 0 |
| Mexico | Varied combination Processed | Sulfonamides | 8 |
| New Zealand | Varied combination Processed | Sulfonamides | 0 |
| Australia | Beef Fresh | Antibiotics | 82 |
| Brazil | Beef Fresh | Antibiotics | 8 |
| Canada | Beef Fresh | Antibiotics | 82 |
| Chile | Beef Fresh | Antibiotics | 8 |
| Costa Rica | Beef Fresh | Antibiotics | 8 |
| Honduras | Beef Fresh | Antibiotics | 8 |
| Japan | Beef Fresh | Antibiotics | 8 |
| Mexico | Beef Fresh | Antibiotics | 8 |
| New Zealand | Beef Fresh | Antibiotics | 49 |
| Nicaragua | Beef Fresh | Antibiotics | 8 |
| Uruguay | Beef Fresh | Antibiotics | 31 |

**Table 47** *(continued)*
**Number of Samples/Product Class-Pork, Processed**
**2008 FSIS, NRP, Import Reinspection Sampling Plan**

| | | | |
|---|---|---|---|
| Australia | Beef Fresh | Sulfonamides | 82 |
| Brazil | Beef Fresh | Sulfonamides | 8 |
| Canada | Beef Fresh | Sulfonamides | 82 |
| Chile | Beef Fresh | Sulfonamides | 8 |
| Costa Rica | Beef Fresh | Sulfonamides | 8 |
| Honduras | Beef Fresh | Sulfonamides | 8 |
| Japan | Beef Fresh | Sulfonamides | 8 |
| Mexico | Beef Fresh | Sulfonamides | 8 |
| New Zealand | Beef Fresh | Sulfonamides | 49 |
| Nicaragua | Beef Fresh | Sulfonamides | 8 |
| Uruguay | Beef Fresh | Sulfonamides | 31 |
| Canada | Horse Fresh | Sulfonamides | 8 |
| Australia | Beef Fresh | Avermectins | 82 |
| Brazil | Beef Fresh | Avermectins | 8 |
| Canada | Beef Fresh | Avermectins | 82 |
| Chile | Beef Fresh | Avermectins | 8 |
| Costa Rica | Beef Fresh | Avermectins | 8 |
| Honduras | Beef Fresh | Avermectins | 8 |
| Japan | Beef Fresh | Avermectins | 8 |
| Mexico | Beef Fresh | Avermectins | 8 |
| New Zealand | Beef Fresh | Avermectins | 49 |
| Nicaragua | Beef Fresh | Avermectins | 8 |
| Uruguay | Beef Fresh | Avermectins | 31 |
| Australia | Beef Fresh | Chloramphenicol | 12 |
| Brazil | Beef Fresh | Chloramphenicol | 8 |
| Canada | Beef Fresh | Chloramphenicol | 12 |
| Chile | Beef Fresh | Chloramphenicol | 8 |
| Costa Rica | Beef Fresh | Chloramphenicol | 8 |
| Honduras | Beef Fresh | Chloramphenicol | 8 |
| Japan | Beef Fresh | Chloramphenicol | 8 |
| Mexico | Beef Fresh | Chloramphenicol | 8 |
| New Zealand | Beef Fresh | Chloramphenicol | 8 |
| Nicaragua | Beef Fresh | Chloramphenicol | 8 |
| Uruguay | Beef Fresh | Chloramphenicol | 8 |
| Australia | Beef Fresh | Florofenicol | 8 |
| Brazil | Beef Fresh | Florofenicol | 8 |
| Canada | Beef Fresh | Florofenicol | 8 |
| Chile | Beef Fresh | Florofenicol | 8 |
| Costa Rica | Beef Fresh | Florofenicol | 8 |
| Honduras | Beef Fresh | Florofenicol | 8 |
| Japan | Beef Fresh | Florofenicol | 8 |
| Mexico | Beef Fresh | Florofenicol | 8 |
| New Zealand | Beef Fresh | Florofenicol | 8 |
| Nicaragua | Beef Fresh | Florofenicol | 8 |
| Uruguay | Beef Fresh | Florofenicol | 8 |
| Australia | Beef Fresh | Fluixin | 8 |
| Brazil | Beef Fresh | Fluixin | 8 |
| Canada | Beef Fresh | Fluixin | 8 |
| Chile | Beef Fresh | Fluixin | 8 |

**Table 47** *(continued)*
**Number of Samples/Product Class-Pork, Processed**
**2008 FSIS, NRP, Import Reinspection Sampling Plan**

| | | | |
|---|---|---|---|
| Costa Rica | Beef Fresh | Fluixin | 8 |
| Honduras | Beef Fresh | Fluixin | 8 |
| Japan | Beef Fresh | Fluixin | 8 |
| Mexico | Beef Fresh | Fluixin | 8 |
| New Zealand | Beef Fresh | Fluixin | 8 |
| Nicaragua | Beef Fresh | Fluixin | 8 |
| Uruguay | Beef Fresh | Fluixin | 8 |
| Argentina | Beef Processed | Sulfonamides | 20 |
| Brazil | Beef Processed | Sulfonamides | 40 |
| Argentina | Beef Processed | Avermectins | 20 |
| Brazil | Beef Processed | Avermectins | 40 |
| Australia | Pork Fresh | Antibiotics | 8 |
| Canada | Pork Fresh | Antibiotics | 8 |
| Chile | Pork Fresh | Antibiotics | 8 |
| Denmark | Pork Fresh | Antibiotics | 8 |
| Finland | Pork Fresh | Antibiotics | 8 |
| Ireland | Pork Fresh | Antibiotics | 8 |
| Mexico | Pork Fresh | Antibiotics | 8 |
| Netherlands | Pork Fresh | Antibiotics | 8 |
| N. Ireland | Pork Fresh | Antibiotics | 8 |
| New Zealand | Pork Fresh | Antibiotics | 8 |
| Sweden | Pork Fresh | Antibiotics | 8 |
| United Kingdom | Pork Fresh | Antibiotics | 8 |
| Australia | Pork Fresh | Arsenicals | 8 |
| Canada | Pork Fresh | Arsenicals | 8 |
| Chile | Pork Fresh | Arsenicals | 8 |
| Denmark | Pork Fresh | Arsenicals | 8 |
| Finland | Pork Fresh | Arsenicals | 8 |
| Ireland | Pork Fresh | Arsenicals | 8 |
| Mexico | Pork Fresh | Arsenicals | 8 |
| Netherlands | Pork Fresh | Arsenicals | 8 |
| N. Ireland | Pork Fresh | Arsenicals | 8 |
| New Zealand | Pork Fresh | Arsenicals | 8 |
| Sweden | Pork Fresh | Arsenicals | 8 |
| United Kingdom | Pork Fresh | Arsenicals | 8 |
| Australia | Pork Fresh | B-agonist | 8 |
| Canada | Pork Fresh | B-agonist | 135 |
| Chile | Pork Fresh | B-agonist | 8 |
| Denmark | Pork Fresh | B-agonist | 15 |
| Finland | Pork Fresh | B-agonist | 8 |
| Ireland | Pork Fresh | B-agonist | 8 |
| Mexico | Pork Fresh | B-agonist | 8 |
| Netherlands | Pork Fresh | B-agonist | 8 |
| N. Ireland | Pork Fresh | B-agonist | 8 |
| New Zealand | Pork Fresh | B-agonist | 8 |
| Sweden | Pork Fresh | B-agonist | 8 |
| United Kingdom | Pork Fresh | B-agonist | 8 |
| Australia | Pork Fresh | Sulfonamides | 8 |
| Canada | Pork Fresh | Sulfonamides | 135 |
| Chile | Pork Fresh | Sulfonamides | 8 |

**Table 47** *(continued)*
**Number of Samples/Product Class-Pork, Processed**
**2008 FSIS, NRP, Import Reinspection Sampling Plan**

| | | | |
|---|---|---|---|
| Denmark | Pork Fresh | Sulfonamides | 15 |
| Finland | Pork Fresh | Sulfonamides | 8 |
| Ireland | Pork Fresh | Sulfonamides | 8 |
| Mexico | Pork Fresh | Sulfonamides | 8 |
| Netherlands | Pork Fresh | Sulfonamides | 8 |
| N. Ireland | Pork Fresh | Sulfonamides | 8 |
| New Zealand | Pork Fresh | Sulfonamides | 8 |
| Sweden | Pork Fresh | Sulfonamides | 8 |
| United Kingdom | Pork Fresh | Sulfonamides | 8 |
| Australia | Veal Fresh | Antibiotics | 13 |
| Canada | Veal Fresh | Antibiotics | 38 |
| New Zealand | Veal Fresh | Antibiotics | 39 |
| Australia | Veal Fresh | Avermectins | 13 |
| Canada | Veal Fresh | Avermectins | 38 |
| New Zealand | Veal Fresh | Avermectins | 39 |
| Australia | Veal Fresh | B-agonist | 13 |
| Canada | Veal Fresh | B-agonist | 38 |
| New Zealand | Veal Fresh | B-agonist | 39 |
| Australia | Veal Fresh | Sulfonamides | 13 |
| Canada | Veal Fresh | Sulfonamides | 38 |
| New Zealand | Veal Fresh | Sulfonamides | 39 |
| Australia | Veal Fresh | Thyreostats | 13 |
| Canada | Veal Fresh | Thyreostats | 38 |
| New Zealand | Veal Fresh | Thyreostats | 39 |
| Australia | Veal Fresh | Zeranol | 13 |
| Canada | Veal Fresh | Zeranol | 38 |
| New Zealand | Veal Fresh | Zeranol | 39 |
| Australia | Veal Fresh | Chloramphenicol | 13 |
| Canada | Veal Fresh | Chloramphenicol | 38 |
| New Zealand | Veal Fresh | Chloramphenicol | 39 |
| Australia | Mutton/Lamb Fresh | Avermectins | 43 |
| Canada | Mutton/Lamb Fresh | Avermectins | 8 |
| Chile | Mutton/Lamb Fresh | Avermectins | 8 |
| Iceland | Mutton/Lamb Fresh | Avermectins | 8 |
| Mexico | Mutton/Lamb Fresh | Avermectins | 8 |
| New Zealand | Mutton/Lamb Fresh | Avermectins | 15 |
| Israel | Chicken Processed | Arsenicals | 8 |
| Canada | Other Fowl Fresh | Antibiotics | 8 |
| France | Other Fowl Fresh | Antibiotics | 8 |
| Canada | Horse Fresh | Antibiotics | 8 |
| Belgium | Pork Processed | CHC/COP | 8 |
| Canada | Pork Processed | CHC/COP | 0 |
| Croatia | Pork Processed | CHC/COP | 8 |
| Denmark | Pork Processed | CHC/COP | 0 |
| France | Pork Processed | CHC/COP | 8 |
| Germany | Pork Processed | CHC/COP | 8 |
| Hungary | Pork Processed | CHC/COP | 8 |
| Italy | Pork Processed | CHC/COP | 8 |
| Mexico | Pork Processed | CHC/COP | 0 |
| Netherlands | Pork Processed | CHC/COP | 0 |

**Table 47** *(continued)*
**Number of Samples/Product Class-Pork, Processed**
**2008 FSIS, NRP, Import Reinspection Sampling Plan**

| | | | |
|---|---|---|---|
| Poland | Pork Processed | CHC/COP | 8 |
| Spain | Pork Processed | CHC/COP | 8 |
| Australia | Goat Fresh | CHC/COP | 8 |
| Mexico | Goat Fresh | CHC/COP | 8 |
| New Zealand | Goat Fresh | CHC/COP | 8 |
| Canada | Turkey Fresh | CHC/COP | 8 |
| Mexico | Turkey Fresh | CHC/COP | 8 |
| Canada | Turkey Processed | CHC/COP | 0 |
| Israel | Turkey Processed | CHC/COP | 8 |
| Mexico | Turkey Processed | CHC/COP | 0 |
| Canada | Chicken Fresh | CHC/COP | 8 |
| Mexico | Chicken Fresh | CHC/COP | 8 |
| Canada | Varied combination fresh | CHC/COP | 8 |
| Australia | Varied combination Processed | CHC/COP | 8 |
| Canada | Varied combination Processed | CHC/COP | 0 |
| Mexico | Varied combination Processed | CHC/COP | 8 |
| New Zealand | Varied combination Processed | CHC/COP | 0 |
| Australia | Beef fresh | CHC/COP | 82 |
| Brazil | Beef fresh | CHC/COP | 8 |
| Canada | Beef fresh | CHC/COP | 82 |
| Chile | Beef fresh | CHC/COP | 8 |
| Costa Rica | Beef fresh | CHC/COP | 8 |
| Honduras | Beef fresh | CHC/COP | 8 |
| Japan | Beef fresh | CHC/COP | 8 |
| Mexico | Beef fresh | CHC/COP | 8 |
| New Zealand | Beef fresh | CHC/COP | 49 |
| Nicaragua | Beef fresh | CHC/COP | 8 |
| Uruguay | Beef fresh | CHC/COP | 31 |
| Argentina | Beef Processed | CHC/COP | 26 |
| Australia | Beef Processed | CHC/COP | 0 |
| Brazil | Beef Processed | CHC/COP | 53 |
| Canada | Beef Processed | CHC/COP | 0 |
| Mexico | Beef Processed | CHC/COP | 0 |
| New Zealand | Beef Processed | CHC/COP | 0 |
| Uruguay | Beef Processed | CHC/COP | 0 |
| Australia | Pork Fresh | CHC/COP | 8 |
| Canada | Pork Fresh | CHC/COP | 135 |
| Chile | Pork Fresh | CHC/COP | 8 |
| Denmark | Pork Fresh | CHC/COP | 15 |
| Finland | Pork Fresh | CHC/COP | 8 |
| Ireland | Pork Fresh | CHC/COP | 8 |
| Mexico | Pork Fresh | CHC/COP | 8 |
| Netherlands | Pork Fresh | CHC/COP | 8 |
| N. Ireland | Pork Fresh | CHC/COP | 8 |
| New Zealand | Pork Fresh | CHC/COP | 8 |
| Sweden | Pork Fresh | CHC/COP | 8 |
| United Kingdom | Pork Fresh | CHC/COP | 8 |
| Australia | Mutton/Lamb Fresh | CHC/COP | 43 |
| Canada | Mutton/Lamb Fresh | CHC/COP | 8 |
| Chile | Mutton/Lamb Fresh | CHC/COP | 8 |

**Table 47***(continued)*
**Number of Samples/Product Class-Pork, Processed**
**2008 FSIS, NRP, Import Reinspection Sampling Plan**

| | | | |
|---|---|---|---|
| Iceland | Mutton/Lamb Fresh | CHC/COP | 8 |
| Mexico | Mutton/Lamb Fresh | CHC/COP | 8 |
| New Zealand | Mutton/Lamb Fresh | CHC/COP | 15 |
| Canada | Chicken Processed | CHC/COP | 0 |
| Israel | Chicken Processed | CHC/COP | 8 |
| Mexico | Chicken Processed | CHC/COP | 0 |
| Canada | Other Fowl Fresh | CHC/COP | 8 |
| France | Other Fowl Fresh | CHC/COP | 8 |
| **Total** | | | **3843** |

**Table 48**
**Number of Compounds/Production Class**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Compound | AB | AVM | AS | CHM | FLOR | FLNX | B-A | THY | NTM | SLF | ZRNL | CHCs/ COPs | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beef, fresh | 300 | 300 | | 96 | 88 | 88 | | | | 300 | | 300 | 1472 |
| Beef, processed | | 60 | | | | | | | | 60 | | 79 | 199 |
| Horse, fresh | 8 | | | | | | | | | 8 | | | 16 |
| Pork, fresh | 230 | | 96 | | | | 96 | | | 230 | | 230 | 882 |
| Pork, processed | | | | | | | | | | 64 | | 64 | 128 |
| Veal, fresh | 90 | 90 | | 90 | | | 90 | 90 | | 90 | 90 | | 630 |
| Lamb/Mutton, fresh | | 90 | | | | | | | | | | 82 | 172 |
| Goat, fresh | | 24 | | | | | | | | | | 24 | 48 |
| Turkey , fresh | 16 | | 16 | 16 | | | | | | 16 | | 16 | 80 |
| Chicken, fresh | 16 | | 16 | 16 | | | | | 16 | | | 16 | 80 |
| Chicken, processed | | | 8 | | | | | | | | | 8 | 16 |
| Other fowl, fresh | 16 | | | | | | | | | | | 16 | 32 |
| Turkey, processed | | | 8 | | | | | | | 8 | | 8 | 24 |
| Varied combination, fresh | 8 | | | | | | | | | 8 | | 8 | 24 |
| Varied combination, processed | | | | | | | | | | 24 | | 16 | 40 |
| **Total/country** | **684** | **564** | **144** | **218** | **88** | **88** | **186** | **90** | **16** | **808** | **90** | **867** | **3843** |

AB=Antibiotics; AVM=Avermectins, AS=Arsenicals; CHM=Chloramphenicol; FLOR=Florfenicol; FLNX=Flunixin
B-A=Beta agonists; THY=Thyreostats; NTM=Nitroimidazoles; SLF=Sulfonamides; ZRNL=Zeranol;
CHCs/COPs =Chlorinated hydrocarbons/Chlorinated organophosphates

**Table 49**
**Number of Samples/Country/Product Class**
**2008 FSIS NRP, Import Reinspection Sampling Plan**

| Country | Beef, fresh | Beef, processed | Horse, fresh | Pork, fresh | Pork, processed | Veal, fresh | Lamb/Mutton, fresh | Goat, fresh | Turkey, fresh | Chicken, fresh | Chicken, processed | Other fowl fresh | Turkey, processed | Varied combination, fresh | Varied combination, processed | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Argentina** | | 66 | | | | | | | | | | | | | | **66** |
| **Australia** | 356 | | | 40 | | 91 | 86 | 16 | | | | | | | 16 | **605** |
| **Belgium** | | | | | 16 | | | | | | | | | | | **16** |
| **Brazil** | 56 | 133 | | | | | | | | | | | | | | **189** |
| **Canada** | 356 | | 16 | 421 | | 266 | 16 | | 40 | 40 | | 16 | | 24 | | **1195** |
| **Chile** | 56 | | | 40 | | | 16 | | | | | | | | | **112** |
| **Costa Rica** | 56 | | | | | | | | | | | | | | | **56** |
| **Croatia** | | | | | 16 | | | | | | | | | | | **16** |
| **Denmark** | | | | 61 | | | | | | | | | | | | **61** |
| **Finland** | | | | 40 | | | | | | | | | | | | **40** |
| **France** | | | | | 16 | | | | | | | 16 | | | | **32** |
| **Germany** | | | | | 16 | | | | | | | | | | | **16** |
| **Honduras** | 56 | | | | | | | | | | | | | | | **56** |
| **Hungary** | | | | | 16 | | | | | | | | | | | **16** |
| **Iceland** | | | | | | | 16 | | | | | | | | | **16** |
| **Ireland** | | | | 40 | | | | | | | | | | | | **40** |
| **Israel** | | | | | | | | | | | 16 | | 24 | | | **40** |
| **Italy** | | | | | 16 | | | | | | | | | | | **16** |
| **Japan** | 56 | | | | | | | | | | | | | | | **56** |
| **Mexico** | 56 | | | 40 | | | 8 | 16 | 40 | 40 | | | | | 16 | **216** |
| **Netherlands** | | | | 40 | | | | | | | | | | | | **40** |
| **New Zealand** | 220 | | | 40 | | 273 | 30 | 8 | | | | | | | 16 | **587** |
| **Nicaragua** | 56 | | | | | | | | | | | | | | | **56** |
| **N. Ireland** | | | | 40 | | | | | | | | | | | | **40** |
| **Poland** | | | | | 16 | | | | | | | | | | | **16** |
| **Spain** | | | | | 16 | | | | | | | | | | | **16** |
| **Sweden** | | | | 40 | | | | | | | | | | | | **40** |
| **United Kingdom** | | | | 40 | | | | | | | | | | | | **40** |
| **Uruguay** | 148 | | | | | | | | | | | | | | | **148** |
| **Total** | **1472** | **199** | **16** | **882** | **128** | **630** | **172** | **40** | **80** | **80** | **16** | **32** | **24** | **24** | **48** | **3843** |

**Table 50**
**Combined Summary**
**2008 FSIS NRP Domestic and Import Scheduled Sampling, and Exploratory Assessments**

| *Lab* | *Analysis* | *Number of Scheduled Domestic Samples* | *Number of Scheduled Imported Samples* | *Number of Scheduled Samples for Exploratory Assessments* | *Total Number of Samples* | *Notes* |
|---|---|---|---|---|---|---|
| ML | Antibiotics[1] | 4,045 | 684 | 90 | 4,819 | *Domestic Scheduled Sampling*: 300, 300, 230, 230, 45, 300, 90, 95, 300, 230, 300, 300, 300, 90, 45, 300, 60, 230, and 300 samples are scheduled for bulls, boars/stags, bob veal, dairy cows, ducks, formula-fed veal, goats, heavy calves, heifers, lambs, market hogs, mature chickens, mature turkeys, non-formula-fed veal, rabbits, roaster pigs, sheep, sows, and steers, respectively. |
| | | | | | | *Exploratory Assessment:* 90 samples are scheduled for bob veal. |
| | | | | | | *Import Scheduled Sampling*: 300, 8, 230, 90, 16, 16, 16 and 8 samples are scheduled for cattle, horse, pigs, chicken, turkey and varied combination fresh, respectively |
| EL | Arsenicals | 900 | 144 | 0 | 1,044 | *Domestic Scheduled Sampling*: 300, 300 and 300 samples are scheduled for beef cows, egg products, and mature turkeys, respectively. |
| | | | | | | *Import Scheduled Sampling*: 96, 16, 16, 8, and 8 samples are scheduled for fresh pork, fresh turkey, fresh chicken, processed chicken, and processed turkey, respectively. |
| EL | Avermectins | 2,230 | 564 | 0 | 2,794 | *Domestic Scheduled Sampling*: 300, 300, 230, 135, 300, 230, 90, 45, 300, and 300 samples are scheduled for bulls, boars/stags, goats, heavy calves, lambs, mature sheep, non-formula-fed veal, rabbits, roaster pigs, and sows, respectively. |
| | | | | | | *Import Scheduled Sampling*: 300, 60, 90, 90 and 24 samples are scheduled for fresh beef, processed beef, fresh veal, fresh lamb and mutton, and fresh goat, respectively |

[1] Aminoglycosides, *beta*-Lactams, Fluoroquinolones, Macrolides, and Tetracyclines.

**Table 50** *(continued)*
**Combined Summary**
**2008 FSIS NRP Domestic and Import Scheduled Sampling, and Exploratory Assessments**

| *Lab* | *Analysis* | *Number of Scheduled Domestic Samples* | *Number of Scheduled Imported Samples* | *Number of Scheduled Samples for Exploratory Assessments* | *Total Number of Samples* | *Notes* |
|---|---|---|---|---|---|---|
| WL | *beta*-Agonists[2] | 620 | 186 | 0 | 806 | *Domestic Scheduled Sampling*: 230, 300, and 90 samples are scheduled for goats, market hogs, and non-formula fed veal, respectively.<br>*Import Scheduled Sampling*: 90 and 96 samples are scheduled for fresh veal and pork, respectively. |
| WL | Carbadox | 600 | 0 | 0 | 600 | *Domestic Scheduled Sampling*: 300 and 300samples are scheduled for market hogs and roaster pigs, respectively.<br>*Import Scheduled Sampling*: No samples are scheduled for the 2008 NRP |
| EL | Chloramphe-nicol | 1,500 | 218 | 0 | 1,718 | *Domestic Scheduled Sampling*: 300, 300, 300, 300, and 300 samples are scheduled for bob veal, heifers, mature chickens, mature turkeys, and steers, respectively.<br>*Import Scheduled Sampling*: 96, 90, 16, and 16 samples are scheduled for fresh beef, veal, turkey, and chicken, respectively. |
| WL | CHCs/COPs | 2,255 | 875 | 0 | 3,130 | *Domestic Scheduled Sampling*: 300, 230, 300, 230, 135, 300, 300, 230, and 230 samples are scheduled for beef cows, boars/stags, dairy cows, goats, heavy calves, heifers, lambs, mature sheep, and sows, respectively.<br>*Import Scheduled Sampling*: 300, 79, 230, 64, 90, 24, 16, 16, 8, 8, 16, 8, and 16 samples are scheduled fresh beef, processed beef, fresh pork, processed pork, fresh lamb/mutton, fresh goat, fresh turkey, fresh chicken, processed chicken, processed turkey, other fowl fresh, fresh varied combo, processed varied combo, respectively |
| EL | Florfenicol | 550 | 88 | 0 | 638 | *Domestic Scheduled Sampling*: 230, 230, and 90 samples are scheduled for beef cows, mature chickens, and non-formula fed veal, respectively.<br>*Import Scheduled Sampling*: 88 samples are scheduled for fresh beef. Unavailability of tissue for analysis (Liver) |
| ML | Flunixin | 180 | 88 | 0 | 268 | *Domestic Scheduled Sampling*: 90 and 90 samples are scheduled for bulls and dairy cows, respectively.<br>*Import Scheduled Sampling*: 88 samples re scheduled for fresh beef. Unavailability of tissue for analysis (Liver) |
| EL | Lead and | 300 | 0 | 0 | 300 | *Domestic Scheduled Sampling*: 300 beef cow samples are scheduled |

[2] Ractopamine, Zilpaterol, Cimaterol, Salbutamol, and Clenbuterol

**Table 50** *(continued)*
**Combined Summary**
**2008 FSIS NRP Domestic and Import Scheduled Sampling, and Exploratory Assessments**

| | | | | | | |
|---|---|---|---|---|---|---|
| | Cadmium | | | | | *Import Scheduled Sampling*: No samples are scheduled for 2008 NRP |
| ***Lab*** | ***Analysis*** | ***Number of Scheduled Domestic Samples*** | ***Number of Scheduled Imported Samples*** | ***Number of Scheduled Samples for Exploratory Assessments*** | ***Total Number of Samples*** | ***Notes*** |
| WL | Melengestrol Acetate (MGA) | 300 | 0 | 0 | 300 | *Domestic Scheduled Sampling*: 300 samples are scheduled for heifers.<br>*Import Scheduled Sampling*: No samples are scheduled for the 2008 NRP. Unavailability of tissue for analysis (Fat) |
| WL | Nitrofurans | 830 | 0 | 0 | 830 | *Domestic Scheduled Sampling*: 230, 300, and 300 samples are scheduled for dairy cows, market hogs, and sows, respectively.<br>*Import Scheduled Sampling*: No samples are scheduled for the 2008 NRP. Unavailability of tissue for analysis (Liver) |
| EL | Nitroimida-zoles | 300 | 16 | 0 | 316 | *Domestic Scheduled Sampling*: 300 samples are scheduled for young chickens.<br>*Import Scheduled Sampling*: 16 samples are scheduled for fresh chicken |
| EL | Sulfonamides | 3,105 | 800 | 0 | 3,905 | *Domestic Scheduled Sampling*: 230, 230, 300, 230, 135, 300, 230, 300, 90, 230, 300, 230, and 300 samples are scheduled for bob veal, dairy cows, egg products, goats, heavy calves, heifers, market hogs, mature chickens, non-formula-fed veal, roaster pigs, sows, steers, and young chickens, respectively.<br>*Import Scheduled Sampling*: 300, 60, 8, 230, 64, 16, 8, 8, 16, and 90 are scheduled for fresh beef, processed beef, fresh horse, fresh pork, processed pork, fresh turkey, processed turkey, fresh varied combo, processed varied combo, and fresh veal, respectively. |
| EL | Thyreostats | 300 | 90 | 0 | 390 | *Domestic Scheduled Sampling*: 300 samples are scheduled for beef cows.<br>*Import Scheduled Sampling*: 90 samples are scheduled for veal fresh |
| ML | Xenobitic hormones[3] | 180 | 90 | 0 | 270 | *Domestic Scheduled Sampling*: 90 and 90 samples are scheduled for formula-fed veal and non-formula-fed veal, respectively.<br>*Import Scheduled Sampling*: 90 veal samples are scheduled for zeranol only |
| **Total** | | **18,195** | **3,843** | **90** | **22,128** | |

[3] Zeranol and Trenbolone

**Table 50** *(continued)*
**Combined Summary**
**2008 FSIS NRP Domestic and Import Scheduled Sampling, and Exploratory Assessments**

**Key:**
CHC = Chlorinated hydrocarbon;
COP = Chlorinated organophosphate
EL = FSIS Eastern Laboratory, Athens, GA
ML = FSIS Midwestern Laboratory, St. Louis, MO
WL = FSIS Western Laboratory, Alameda, CA

# 2007 NRP Sampling Plan

# Adjustments

The following are the major adjustments made to the 2007 FSIS NRP:

- Horses are not sampled under the Domestic Scheduled Sampling Plan
- Rabbits are scheduled for antibiotics and avermectins testing.
- More production classes are scheduled for antibiotics in the Domestic Scheduled Sampling Plan. Twelve production classes were scheduled in 2007 while 19 production classes are scheduled in the 2008 NRP.
- Egg products are scheduled for arsenic and sulfonamides testing.
- Zilpaterol has been added to the *beta*-agonist laboratory methodology.
- Bulls and dairy cows are scheduled for flunixin testing.

# Appendix I

## Tissues Required for Laboratory Analysis

## Tissues Required for Laboratory Analysis

Table A-I Lists the tissue, the quantity required for analysis, and the laboratory to which the tissue is sent for analysis.

**Table A-I**

| Residue | Tissue Analyzed | Quantity (lb) | Lab |
|---|---|---|---|
| Antibiotics | Kidney, liver, muscle | 1 | ML[1] |
| Arsenicals | Liver, muscle | 1 | EL[2] |
| Avermectins | Liver, muscle | 1 | EL |
| ß -Agonists | Liver, muscle | 1 | WL[3] |
| Carbadox | Liver, muscle | 1 | WL |
| Chloramphenicol | Muscle | 1 | EL |
| Chlorinated hydrocarbons/chlorinated organophosphates | Fat | 1 | WL |
| Florfenicol | Liver, muscle | 1 | EL |
| Flunixin | Liver, muscle | 1 | ML |
| Lead and Cadmium | Kidney, muscle | 1 | EL |
| MGA | Fat | 1 | WL |
| Nitrofurans | Liver | 1 | WL |
| Nitroimidazoles | Muscle | 1 | EL |
| Sulfonamides | Liver, muscle | 1 | EL |
| Thyreostats | Muscle | 1 | EL |
| Trenbolone | Liver, muscle | 1 | ML |
| Zeranol | Liver, muscle | 1 | ML |

[1] FSIS Midwestern Laboratory
[2] FSIS Eastern Laboratory
[3] FSIS Western Laboratory

# Appendix II

## FSIS Laboratory Analytical Methods

# FSIS Laboratory Analytical Methods

The Food Safety and Inspection Service (FSIS) requires analytical methods for detecting, quantifying, and identifying residues that may be present in meat, poultry, and processed egg products. These methods can be used by the Agency for monitoring and surveillance activities to determine whether a product is adulterated and for human risk assessment evaluations. The Agency uses available methodology to take appropriate regulatory action against adulterated products, consistent with the reliability of the analytical data. This section describes the types of methods used by FSIS to conduct analyses.

**Table AI**
**Analytical Methods**
**2008 National Residue Program**

| *Compound Class* | *Compound* | *Analytical Method* | | | *Minimum Proficiency Level* [a] | | |
|---|---|---|---|---|---|---|---|
| | | *Screen* | *Determinative (quantitative)* | *Confirmatory (identification)* | *Screen* | *Determinative (quantitative)* | *Confirmatory (identification)* |
| Antibiotics | Carbadox | LC/MS/MS | GC-ECD | GC/MS | 15 ppb | 15 ppb | 30 ppb |
| | Chloramphenicol | | GC-ECD | GC-MS | | 0.25 ppb (M)(B) | 0.25 ppb (M)(B),0.30 ppb (M)(T) |
| | Florfenicol | | HPLC | GC/SIM-MS | | 0.3 ppm (L)(B)<br>0.2 ppm (M)(B) | 0.5 ppm (L)(B), 0.3 ppm (M)(B) |
| Antibiotics : *beta*-Lactams | Amoxicillin | 7-Plate Bioassay | | HPLC/MS-MS | | TBD | TBD |
| | Ampicillin | | Bioassay | | | 0.05 ppm | 10 ppb |
| | Cefazolin | | | | | TBD | 50 ppb |
| | Cloxacillin | | | | | TBD | TBD |
| | Desacetyl Cephapirin | | | | | TBD | 100 ppb |
| | Ceftiofur (Parent) Desfuroyl Ceftiofur (Marker residue for Quantiation) Desfuroylceftiofur cysteine disulfide (DCCD) (Metabolite For Confirmation) | | HPLC-UV | | | 0.10 ppm | 50 ppb |
| | Dicloxacillin | | | | | TBD | TBD |
| | Nafcillin | | | | | TBD | 20 ppb |
| | Penicillin-G | | Bioassay | | | 0.05 ppm | 50 ppb |
| | Oxacillin | | | | | TBD | TBD |
| Antibiotics : Tetracyclines | Chlortetracycline | 7-Plate Bioassay | Bioassay | HPLC | | 0.05 ppm | 0.5 ppm |
| | Oxytetracycline | | | | | 0.40 ppm | |
| | Tetracycline | | | | | | |

**Table AI** *(continued)*
**Analytical Methods**
**2008 National Residue Program**

| *Compound Class* | *Compound* | *Analytical Method* | | | *Minimum Proficiency Level* [a] | | |
|---|---|---|---|---|---|---|---|
| | | *Screen* | *Determinative (quantitative* | *Confirmatory (identification* | *Screen* | *Determinative (quantitative* | *Confirmatory (identification* |
| Antibiotics: Macrolides | Clindamycin | 7-Plate Bioassay | | HPLC/MS-MS | | | 0.1 ppm |
| | Erythromycin | | Bioassay | | | 0.25 ppm | 0.1 ppm |
| | Lincomycin | | | | | | 0.1 ppm |
| | Pirlimycin | | | | | | 0.1 ppm |
| | Tilmicosin | | HPLC- Ion Pairing | | | 300 ppb (M) 600 ppb (L,K) | 1 ppm |
| | Tulathromycin | | | | | | 1 ppm |
| | Tylosin | | Bioassay | | | 1.0 ppm | 0.1 ppm |
| Antibiotics: Aminoglycosides | Amikacin | 7-Plate Bioassay | | HPLC/MS-MS | | | 1.0 ppm (L,K), 0.4 ppm (M) |
| | Apramycin | | | | | | 0.4 ppm (K) 0.1 ppm (L,M) |
| | Dihydrostreptomycin | | Bioassay | | | 0.5 ppm | 0.4 ppm (L,K,M) |
| | Gentamicin | | Bioassay | | | 0.15 ppm | 0.1 ppm (K,M), 0.4 (L) |
| | Hygromycin | | | | | | 1.0 ppm (L,K) 0.4 ppm (M) |
| | Kanamycin | | | | | | 4.0 ppm(L), 2.0 ppm (K), 0.4 ppm (M) |
| | Neomycin | | Bioassay | | | 0.25 ppm | 0.1ppm (K,M), 0.4 (L) |
| | Spectinomycin | | | | | 10.0 ppm | 1.0 ppm (L) 0.4 ppm (K) 0.25 ppm (M) |
| | Streptomycin | | Bioassay | | | 0.5 ppm | 0.4 ppm (L,K,M) |
| | Tobramycin | | | | | | 1.0 ppm (L) 0.1 ppm (K,M) |

**Table AI** *(continued)*
**Analytical Methods**
**2008 National Residue Program**

| *Compound Class* | *Compound* | *Analytical Method* | | | *Minimum Proficiency Level* [a] | | |
|---|---|---|---|---|---|---|---|
| | | ***Screen*** | ***Determinative (quantitative*** | ***Confirmatory (identification*** | ***Screen*** | ***Determinative (quantitative*** | ***Confirmatory (identification*** |
| Antibiotics: Fluoroquinolones | Ciprofloxacin | 7-Plate Bioassay | | HPLC/MS-MS | | | 25 ppb |
| | Danofloxacin | | | | | | |
| | Desethylene diprofloxacin | | | | | | |
| | Desmethyl danofloxacin | | | | | | |
| | Difloxacin | | | | | | |
| | Enrofloxacin | | | | | | |
| | Norfloxacin | | | | | | |
| | Sarafloxacin | | | | | | |
| Arsenicals | Arsenicals | | AAS | AAS | | 0.2 ppm | 0.2 ppm |
| Avermectins | Ivermectin | | HPLC | HPLC/APCI-MS | | 7.5 ppb | 25 ppb |
| | Doramectin | | | | | | |
| | Moxidectin | | | | | | |
| *beta* -Agonists | Cimaterol | LC/MS/MS | | LC/MS/MS | 3 ppb | | 3 ppb |
| | Clenbuterol | | | | 3 ppb | | 3 ppb |
| | Ractopamine | | HPLC | | 21 ppb | 1 ppb (M), 25 ppb (L) | 25 ppb |
| | Salbutamol | | | | 3 ppb | | 3 ppb |
| | Zilpaterol | | | | 6 ppb | | 6 ppb |
| Heavy metals | Cadmium | | | ICP/MS | | | 10 ppb |
| | Lead | | | | | | 25 ppb |

**Table AI** *(continued)*
**Analytical Methods**
**2008 National Residue Program**

| *Compound Class* | *Compound* | *Analytical Method* | | | *Minimum Proficiency Level* [a] | | |
|---|---|---|---|---|---|---|---|
| | | ***Screen*** | ***Determinative (quantitative)*** | ***Confirmatory (identification)*** | ***Screen*** | ***Determinative (quantitative)*** | ***Confirmatory (identification)*** |
| Hormones, synthetic | Diethylstilbesterol (DES) | | GC-MS | GC-MS | | 0.5 ppb | 1.0 ppb (L,M) |
| | Zeranol | ELISA | GC-MS | GC-MS | 0.5 ppb | 1.0 ppb | 1.0 ppb (L,M) |
| | *alpha*-Trenbolone | | | GC/MS-MS | 5.0 ppb | | 5.0 ppb (L) |
| | *beta*-Trenbolone | | | GC/MS-MS | | | 5.0 ppb (M) |
| Nitrofurans | Furazolidone | LC/MS-MS | | | 5.0 ppb (L) | | 5.0 ppb (L) |
| | Furaltadone | | | | 5.0 ppb (L) | | 5.0 ppb (L) |
| Nitroimi-dazoles | Hydoxydimetridazole | | HPLC | HPLC/MS/MS | | 1 ppb | 1 ppb |
| | Hydroxyipronidazole | | | | | 1 ppb | 1 ppb |
| Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) | Flunixin | ELISA | HPLC/ESI-MS-MS | HPLC/ESI-MS-MS | 50 ppb | 62.5 ppb (L)<br>12.5 ppb (M) | 62.5 ppb (L)<br>12.5 ppb (M) |
| Anabolic Steroids | Melengesterol Acetate (MGA) | ELISA | GC/ECD | HPLC/APCI-MS | 10 ppb | 10 ppb | 12.5 ppb |
| Sulfonamides | Sulfapyridine | | TLC | GC/ESI-MS | | 0.08 ppm | 0.1 ppm |
| | Sulfadiazine | | | | | | |
| | Sulfathiazole | | | | | | |
| | Sulfamerazine | | | | | | |
| | Sulfamethazine | | | | | | |
| | Sulfachloropyridazine | | | | | | |
| | Sulfamethoxypryridazine | | | | | | |
| | Sulfaquinoxaline | | | | | | |
| | Sulfadimethoxine | | | | | | |
| | Sulfaethoxypyridazine | | | | | | |
| | Sulfaphenazole | | | | | | |
| | Sulfatroxazole | | | | | | |
| | Sulfisoxazole | | | | | | |
| | Sulfadoxine | | | | | | |

**Table AI** *(continued)*
**Analytical Methods**
**2008 National Residue Program**

| *Compound Class* | *Compound* | *Analytical Method* | | | *Minimum Proficiency Level* [a] | | |
|---|---|---|---|---|---|---|---|
| | | *Screen* | *Determinative (quantitative)* | *Confirmatory (identification)* | *Screen* | *Determinative (quantitative)* | *Confirmatory (identification)* |
| Thyreostats | 2-Mercaptobenzimidazole | | | HPLC/MS-MS | | | 25 ppb |
| | 6-Methyl-2-thiouracil | | | | | | |
| | 2-Mercapto-1-methylimidazole | | | | | | |
| | 6-Phenyl-2-thiouracil | | | | | | |
| | 6-Propyl-2-thiouracil | | | | | | |
| | 2-Thiouracil | | | | | | |
| CHCs/COPs/PCBs | Aldrin | GC-ECD | GC-ECD | | 0.10 ppm | 0.10 ppm | |
| | *alpha*-BHC | | | | 0.10 ppm | 0.10 ppm | |
| | *beta*-BHC | | | | 0.10 ppm | | |
| | *delta*-BHC | | | | 0.10 ppm | | |
| | Captan | | | | 0.04 ppm | | |
| | Carbophenothion | | | | 0.06 ppm | | |
| | Chlordene | | | | 0.10 ppm | | |
| | Chlorfenvinphos | | | | 0.05 ppm | 0.05 ppm | |
| | Chlorpyrifos | | | | 0.10 ppm | 0.10 ppm | |
| | Chlorpyrifos methyl | | | | 0.10 ppm | | |
| | *cis*-chlordane | | | | 0.02 ppm | 0.30 ppm | |
| | Coumaphos-O | | | | 0.40 ppm | | |
| | Coumaphos-S | | | | 0.20 ppm | 0.20 ppm | |
| | Dichlofenthion | | | | 0.1 ppm | | |
| | Dieldrin | | | | 0.10 ppm | 0.10 ppm | |
| | Endosulfan I | | | | 0.02 ppm | | |
| | Endosulfan II | | | | 0.04 ppm | 0.04 ppm | |
| | Endosulfan sulfate | | | | 0.10 ppm | | |
| | Endrin | | | | 0.10 ppm | 0.10 ppm | |
| | Endrin Ketone | | | | 0.10 ppm | | |
| | 2,2',4,4',5,5'-hexabromobiphenyl (HBB) | | | | 0.10 ppm | | |

**Table AI** *(continued)*
**Analytical Methods**
**2008 National Residue Program**

| *Compound Class* | *Compound* | *Analytical Method* | | | *Minimum Proficiency Level* [a] | | |
|---|---|---|---|---|---|---|---|
| | | ***Screen*** | ***Determinative (quantitative)*** | ***Confirmatory (identification)*** | ***Screen*** | ***Determinative (quantitative)*** | ***Confirmatory (identification)*** |
| CHCs/COPs/PCBs (continued) | Hexachlorobenzene (HCB) | GC-ECD | GC-ECD | | 0.10 ppm | 0.10 ppm | |
| | Heptachlor epoxides | | | | 0.10 ppm | 0.10 ppm | |
| | Heptachlor | | | | 0.03 ppm | 0.10 ppm | |
| | Kepone | | | | 0.06 ppm | | |
| | Lindane | | | | 0.10 ppm | 0.10 ppm | |
| | Linuron | | | | 0.50 ppm | | |
| | Methoxychlor | | | | 0.50 ppm | 0.50 ppm | |
| | Mirex | | | | 0.10 ppm | 0.10 ppm | |
| | Trans-Nonachlor | | | | 0.15 ppm | 0.15 ppm | |
| | o,p'-TDE | | | | 0.15 ppm | | |
| | o,p'-DDT | | | | 0.15 ppm | | |
| | o,p'-DDE | | | | 0.10 ppm | | |
| | Oxychlordane | | | | 0.04 ppm | 0.04 ppm | |
| | p,p'-DDE | | | | 0.10 ppm | 0.10 ppm | |
| | p,p'-DDT | | | | 0.10 ppm | 0.15 ppm | |
| | p,p'-TDE | | | | 0.10ppm | 0.15 ppm | |
| | PCB 1260 | | | | 0.50 ppm | 0.50 ppm | |
| | PCB 1254 | | | | 0.50 ppm | 0.50 ppm | |
| | Phosalone | | | | 0.02 ppm | | |
| | Poly brominated biphenyls | | | | 0.10 ppm | | |
| | Ronnel | | | | 0.03 ppm | 0.03 ppm | |
| | Stirofos | | | | 0.04 ppm | 0.06 ppm | |
| | Toxaphene | | | | 1.00 ppm | 1.00 ppm | |
| | *trans*-chlordane | | | | 0.0.4 ppm | 0.30 ppm | |

**Table AI** *(continued)*
**Analytical Methods**
**2008 National Residue Program**

a. Minimum Proficiency Level: The minimum concentration of a residue at which an analytical result will be used to assess a laboratory's quantification capability. This concentration is an estimate of the smallest concentration for which the average coefficient of variation (CV) for reproducibility (i.e., combined within and between laboratory variability) does not exceed 20 percent (9 CFR 318.21).

Key:

AA = Atomic Absorption Spectroscopy
APCI = Atmospheric Pressure Chemical Ionization
B = Bovine
CHCs = Chlorinated hydrocarbons
COPs = Chlorinated organophosphates
ECD = Electron Capture Detection
ELISA = Enzyme Linked Immunosorbent Assay
GC = Gas Chromatoraphy
GPC = Gel Permeation Chromatography
HPLC = high performance liquid chromatography
K = Kidney
L = Liver
M = Muscle
Method detection limit = The lowest quantity of residue (or sample component) that can be reliably observed or found in the sample matrix by the analytical methodology used.
MS = Mass Spectroscopy
NA = not applicable
PCBs = Polychlorinated biphenyls
ppb = parts per billion
ppm = parts per million
SIM = selected ion mode
TBD = To be determined
TLC = Thin Layer Chromatography
T = Turkey

# Appendix III

## Statistical Table

# Statistical Table

Table AIII, S*tatistical Table*, indicates the number of samples required to ensure detection of a violation that affects a given percentage of the sampled population. Statistically, if v is the true violation rate in the population and n is the number of samples, the probability, P, of finding at least one violation among the *n* samples (assuming random sampling) is: $P = 1-(1-v)^n$. Therefore, if the true violation rate is 1%, the probabilities of detecting at least one violation with sampling levels of 300, 230 are 95% and 90%, respectively.

**Table AIII**
**Statistical Table**
**2008 FSIS National Residue Program**

| *Percentage Violative in Sampled Population* | *Probability of Detection (Percent)* | | | |
|---|---|---|---|---|
| | 90 | 95 | 99 | 99.9 |
| | *Samples Required* | | | |
| 10 | 22 | 29 | 44 | 66 |
| 5 | 45 | 59 | 90 | 135 |
| 1 | 230 | 299 | 459 | 688 |
| 0.5 | 460 | 598 | 919 | 1,379 |
| 0.1 | 2,302 | 2,995 | 4,603 | 6,905 |
| 0.05 | 4,605 | 5,990 | 9,209 | 13,813 |