UNITED STATES
National Residue Program

2010 Scheduled Sampling Plans

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

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Preface

The United States National Residue Program (U.S. NRP) *Blue Book* is a summary of the scheduled domestic and imported meat, poultry and egg product sampling plans and includes a summary of adjustments to the 2009 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 imported products and for veterinary drugs, pesticides, and unavoidable[1] contaminants. For convenience, tables that report summaries of FSIS sampling plans are provided before the detailed discussions. Three appendices (I-III) are provided also: 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 U.S. NRP should be directed to the USDA-FSIS-OPHS-Risk Assessment Division (RAD), Chemical Residue Risk Branch, 333 Aerospace Center, 1400 Independence Avenue, SW, Washington, DC 20250-3700, telephone (202) 690-6409, fax (202) 690-6565.

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Principal Authors

Alexander Domesle	USDA/FSIS/OPHS/RAD
Margaret O'Keefe	USDA/FSIS/OPHS/RAD

[1] That is, not deliberately added to the product as in food and color additives, pesticides, and veterinary drugs

INTRODUCTION

The United States National Residue Program (U.S. NRP) 2010 Scheduled Sampling Plan (*Blue Book*) provides the scheduled sampling plan for testing chemical compounds in products from food animals and egg products produced domestically or imported into the United States for CY2010. In addition, this book provides detailed information on how the chemical compounds are selected for inclusion in the scheduled sampling plan.

The U.S. NRP is a collaborative interagency program established to protect the public from exposure to harmful levels of chemical residues in meat, poultry, and egg products produced or imported into the United States. The NRP is designed: (1) to provide a structured process for identifying and evaluating chemical compounds of concern in food animals; (2) to analyze chemical compounds of concern; (3) to collect and report results and (4) to identify the need for regulatory follow-up when violative levels of chemical residues are found.

The U.S. Department of Agriculture Food Safety and Inspection Service (FSIS), the Environmental Protection Agency (EPA), and the Department of Health and Human Services Food and Drug Administration (FDA) are the federal agencies primarily involved in managing this program. The EPA and FDA have statutory authority for establishing residue tolerances through regulations that limit the quantity of a chemical for the protection of public health.[1] The FDA, under the Federal Food, Drug, and Cosmetic Act, establishes tolerances or action levels for veterinary drugs, food additives, and environmental contaminants. The EPA, under the Federal Insecticide, Fungicide and Rodenticide Act (as modified by the Food Quality Protection Act), establishes tolerance levels for registered pesticides. Through the Federal Meat Inspection Act, the Poultry Products Inspection Act, and the Egg Products Inspection Act, FSIS regulates the safety of meat, poultry, and egg products produced in federally inspected establishments.

The U.S. NRP tests for chemical compounds, including approved (legal) and unapproved (illegal) veterinary drugs, pesticides, hormones, as well as environmental compounds that may appear in meat, poultry, and egg products. FSIS, FDA, EPA, and other federal agencies (including the Agricultural Research Service, Agricultural Marketing Services, and Centers for Disease Control and Prevention) create an annual sampling plan (per calendar year) using sample results from the U.S. NRP, information that the Agencies have accumulated during investigations, and from FDA veterinary drug inventories completed during on-farm visits. The Agencies create a list of chemical compounds for testing and rank them using mathematical equations that include variables for public health risk and regulatory concern. The Agencies decide which chemical compounds are tested in which food animals and evaluate FSIS laboratory capacity and analytical methods to devise a final sampling plan. The FSIS publishes the finalized annual U. S. NRP sampling plan in the U.S. NRP Scheduled Sampling Plan (*Blue Book*).

Since 1967, FSIS has administered the U.S. NRP by collecting samples from meat, poultry, and egg products and analyzing the samples at one of three FSIS laboratories. A violation occurs when a FSIS laboratory detects a chemical compound level in excess of an established tolerance or action level in a

[1] Title 40 CFR includes tolerance levels established by EPA; Title 21 CFR includes tolerance levels established by FDA.

sample. FSIS shares laboratory findings that exceed established tolerances and action levels with FDA and EPA. FDA has jurisdiction on-farm, and FSIS assists FDA in obtaining the names of producers and other parties involved in offering the animals for sale. The FSIS informs producers through certified letters that an animal from their business has tested positive for violative residues.

The FDA and cooperating state agencies investigate producers linked to residue violations. If a problem is not corrected, subsequent FDA visits could result in enforcement action, including prosecution. FSIS posts a Residue Violator Alert List on its web site, listing the names and addresses of parties that the FDA has determined are responsible for more than one veterinary drug, pesticide, or other chemical residue violation during a 12-month period. The names and addresses of repeat violators remain on the FSIS web site for 12 months following FDA confirmation.

Since August 2009, and at the request of industry, FSIS posts weekly on the Same Source Supplier List, establishments and producers associated with more than one violation on a rolling 12-month basis. This list varies from the Residue Violator Alert List because it allows industry to react in real time to current violations and contains a tally of all violations recorded during the 12- month period indicated. Because FSIS updates this list weekly, FDA may not have investigated or confirmed each violation. These lists provide helpful information to processors and producers working to avoid illegal levels of residues, serve as deterrents for violators, and enable FSIS and FDA to make better use of resources.

A sound chemical residue prevention program is essential to encourage the prudent use of veterinary drugs and pesticides in food animals. In the late 1990s, FSIS implemented the Hazard Analysis and Critical Control Points (HACCP) inspection system in all federally inspected establishments to verify chemical residue control under HACCP. The HACCP regulation, (9 CFR 417), requires slaughter and production establishments to identify all food safety hazards, including drug residues, pesticides, and chemical contaminants that are reasonably likely to occur before, during, and after entry into the establishment and determine preventive measures the establishment can apply to control these hazards. FSIS takes regulatory action against establishments that do not have an adequate chemical residue control program in place.

The U.S. NRP requires the cooperation and collaboration of several Agencies for successful design and implementation. The U.S. NRP exists to ensure that chemical compounds are used as intended and that the food supply is safe for consumption.

SAMPLING PLANS OF THE U. S. NATIONAL RESIDUE PROGRAM

The United States National Residue Program (U. S. NRP) sampling plans focus on domestic meat, poultry and egg products and import reinspection of meat and poultry products. These plans are divided further 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 food animals that have passed ante-mortem inspection. The development of scheduled sampling plans proceeds in the following manner: 1) determine which chemical compounds are of concern to food safety; 2) use algorithms to rank the selected chemical compounds; 3) pair these chemical compounds with appropriate food animal and egg products; and 4) establish the number of samples to be collected. At its annual meeting, the Surveillance Advisory Team (SAT), an interagency committee comprised of representatives from FSIS, FDA, EPA, AMS, ARS and CDC, determines the compound/production class pairs of public health concern.[1] FSIS calculates the number of samples needed for the scheduled sampling. Since the 2006 NRP, FSIS has sampled 230 or 300 animals for each compound/production class pair. Applying sampling rates of 230 or 300 in food animals and egg products assures a 90 percent and 95 percent probability, respectively, for detecting residue violations if the violation rate is equal to or greater than one percent. The resulting violation data are used to verify whether industry process controls and HACCP plans effectively control residues. The FSIS, FDA, and EPA review and make final adjustments to the sampling plan.

The following types of sampling programs are being scheduled:

Exposure Assessments[2]

Exposure Assessments are used

- to guide FSIS decision, to condemn carcasses with violative levels of residues;
- to guide FDA regulatory decisions when a sample contains violative levels of residues to determine action against producers;
- to guide industry decisions to retain product until the sample has been tested; and

[1] Compound = chemical compounds; production class =food animals and egg products

[2] This sampling program provides data that could be used to conduct exposure assessments for chemical compounds in food animals and egg products. Further information can be found on page16.

- to guide industry decisions to recall a product that was not retained while the sample was tested and found to contain violative levels of residue.

Exploratory Assessments[3]

Exploratory Assessments are designed to:

- reinvestigate animal populations from ongoing or previous exposure assessments if the violation rate is confirmed at one percent or greater;
- investigate animal populations when the compounds in question have no established tolerances; and
- respond to intelligence re: use of veterinary drugs, pesticides and environmental contaminant reports from the field.

Inspector-Generated Sampling

Inspector-generated sampling is conducted by in-plant Public Health Veterinarians (PHVs) when the PHV suspects that an animal may have violative levels of chemical residues. Currently, inspector-generated sampling targets *individual suspect animals* and *suspect populations of animals (i.e., show 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 (i.e., 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 an antibiotic or sulfonamide drug in an animal, then he or she can perform an in-plant screening test: Fast Antimicrobial Screening Test (FAST) or Kidney Inhibition Swab (KIS™) test, as appropriate. If the result of a screening test is positive, then the sample is sent to a FSIS laboratory for confirmation. If the IIC does not have FAST or KIS™ 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 a FSIS regulation, directive (e.g., FSIS Directive 10,800.1), or notice (e.g., as in the case of show animals and bob veal).

[3] The exploratory assessments are sampling programs designed to target chemical compounds of public health concern.

IMPORT REINSPECTION SAMPLING PLAN

Imported meat, poultry, and egg products are sampled through the Port-of-Entry Reinspection Program, a chemical residue-monitoring program conducted to verify the equivalence of inspection systems in exporting countries. All imported products are subject to reinspection and one or more types of inspection (TOI) are conducted on every lot[4] of product before it enters the United States. Chemical residue sampling is included in the reinspection of imported products. 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-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.

The following summary tables outline the specifics of the sampling programs.

[4] A lot is a group of product defined statistically and/or scientifically by production segments and certified from one country, one establishment, and consisting entirely of the same species, process category, and product standard of identity (sub-category). A single lot can contain shipping cartons with varying sizes of immediate containers.

Summary Table I
Status of the Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) Prohibited Drugs
2010 U. S. NRP – Domestic and Import Sampling

AMDUCA[1] Prohibited Drug	Scheduled Samples		Total
	Domestic	Import	
Avoparcin (glycopeptide)	Not in the 2010 NRP	Not in the 2010 NRP	0
Chloramphenicol	Samples are scheduled as follows: steers (300), bob veal (300), dairy cows (300), and formula fed veal (300).	Samples are scheduled as follows:freshbeef (93), fresh chicken (90), fresh turkey (16), and fresh veal (90).	1,489
Clenbuterol[2]	Samples are scheduled as follows: beef cows (300), bulls (300), goats (90) and steers (112).	Samples are scheduled for fresh veal (90).	892
Diethylstilbestrol[3]	Not in the 2010 NRP	Not in the 2010 NRP	0
Fluoroquinolones[4]	Samples are scheduled as follows: heavy calves (90), non-formula fed veal (90), bulls (300), beef cows (300), dairy cows (300), heifers (300), steers (300), bob veal (230), formula fed veal (300), sheep (300), lambs (300), goats (90), market hogs (300), roaster pigs (300), boars/stags (300), sows (300), young chickens (300), mature chickens (300), mature turkeys (300), ducks (45), geese (45), and rabbits (45).	Samples are scheduled as follows: fresh beef (301), fresh chicken (90), fresh horse (8), fresh other fowl (16), fresh pork (234), fresh turkey (16), fresh varied combination (8), and fresh veal (90).	5,898
Nitrofurans[5]	Samples are scheduled as follows: market hogs (300) and sows (300).	No samples are scheduled for 2010 NRP	600
Nitroimidazoles[6]	Samples are scheduled for young chickens (300).	Samples are scheduled for fresh chicken (90).	390
Phenylbutazone	Not in the 2010 NRP	Not in the 2010 NRP	0
Ronidazole	Not in the 2010 NRP	Not in the 2010 NRP	0
Vancomycin	Not in the 2010 NRP	Not in the 2010 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] β-Agonist method is applicable to clenbuterol, salbutamol, cimaterol, zilpaterol, and ractopamine
[3] Xenobiotic hormone
[4] The fluoroquinolones, enrofloxacin, and danofloxacin, are approved for use in steers and heifers
[5] Furazolidone and nitrofurazone; antimicrobials
[6] Nitroimidazoles in the FSIS multi residue method (MRM) are dimetridazole and ipronidazole; antiprotozoal

Summary Table II
Rank and Status of Veterinary Drugs
2010 U. S. NRP – Domestic and Import Scheduled Sampling

Rank	Veterinary Drug	Score	Scheduled Samples		Total
			Domestic	Import	
1	Antibiotics[1]	16.0	Samples are scheduled as follows: heavy calves (90), non-formula fed veal (90), bulls (300), beef cows (300), dairy cows (300), heifers (300), steers (300), bob veal (230), formula fed veal (300), sheep (300), lambs (300), goats (90), market hogs (300), roaster pigs (300), boars/stags (300), sows (300), young chickens (300), mature chickens (300), mature turkeys (300), ducks (45), geese (45), and rabbits (45).	Samples are scheduled as follows: fresh beef (301), fresh chicken (90), fresh horse (8), fresh other fowl (16), fresh pork (234), fresh turkey (16), fresh varied combination (8), and fresh veal (90).	5,898
2	Avermectins[2]	14.0	Samples are scheduled as follows: bulls (230), goats (230), heavy calves (90), non formula-fed veal (90), steers (230), beef cows (300), formula- fed veal (300), and boars/stags (230).	Samples are scheduled as follows: fresh beef (301), processed beef (42), fresh goat (24), fresh lamb/mutton (92), and fresh veal (90).	2,249
3	Sulfonamides[3]	12.0	Samples are scheduled as follows: bob veal (230), dairy cows (230), heavy calves (90), market hogs (230), non-formula fed veal (90), roaster pigs (135), steers (230), sows (230), mature chickens (300), egg products (300), boars/stags (230), bulls (300), beef cows (300), heifers (230), and formula fed veal (230).	Samples are scheduled as follows: fresh beef (301), processed beef (42), fresh horse (8), fresh pork (234), processed pork (40), fresh turkey (16), processed turkey (16), fresh varied combination (8), processed varied combination (24), and fresh veal (90).	4,134
4	Xenobiotic hormones[4] (trenbolone/zeranol)	12.0	Samples are scheduled for formula fed veal (390; composed of 300 trenbolone and 90 zeranol).	Samples are scheduled for fresh veal (90; zeranol, only).	480
5	Florfenicol[5]	11.5	Samples are scheduled as follows: dairy cows (220), steers (300) and non-formula-fed veal (135).	Samples are scheduled for fresh beef (93).	748
6	Carbadox[6]	11.3	Samples are scheduled as follows: market hogs (230) and roaster pigs (230).	Not in the 2010 NRP	460
7	Flunixin[7]	7.0	Samples are scheduled as follows: bulls (300), beef cows (300), bob veal (300) and dairy cows (300).	Samples are scheduled for fresh beef (93).	1,293
8	Dipyrone[8]	6.5	Not in the 2010 NRP	Not in the 2010 NRP	0
9	Berenil[9]	5.6	Not in the 2010 NRP	Not in the 2010 NRP	0

Summary Table II *(continued)*
Rank and Status of Veterinary Drugs
2010 U. S. NRP – Domestic and Import Sampling

Rank	Veterinary Drug	Score	Scheduled Samples		Total
			Domestic	Import	
10	Thiamphenicol[10]	5.2	Not in the 2010 NRP	Not in the 2010 NRP	0
11	Methyl prednisone[11]	5.1	Not in the 2010 NRP	Not in the 2010 NRP	0
12	Dexamethasone[12]	5.1	Not in the 2010 NRP	Not in the 2010 NRP	0
13	Clorsulon[13]	4.7	Not in the 2010 NRP	Not in the 2010 NRP	0
14	Eprinomectin[14]	4.7	Not in the 2010 NRP	Not in the 2010 NRP	0
15	Amprolium[15]	4.6	Not in the 2010 NRP	Not in the 2010 NRP	0
16	Arsenicals[16]	4.5	Samples are scheduled as follows: beef cows (300), mature turkeys (300), and young turkeys (300).	Samples are scheduled as follows: fresh chicken (90), processed chicken (8), fresh pork (112), fresh turkey (16), and processed turkey (16).	1,142
17	Lasalocid[17]	4.5	Not in the 2010 NRP	Not in the 2010 NRP	0
18	Prednisone[18]	4.4	Not in the 2010 NRP	Not in the 2010 NRP	0
19	Etodolac[19]	4.4	Not in the 2010 NRP	Not in the 2010 NRP	0
20	Benzimidazoles[20]	4.1	Not in the 2010 NRP	Not in the 2010 NRP	0
21	Halofuginone[21]	4.1	Not in the 2010 NRP	Not in the 2010 NRP	0
22	Hormones (naturally occurring)[22]	4.1	Not in the 2010 NRP	Not in the 2010 NRP	0
23	Thyreostats[23]	3.5	Samples are scheduled for sows (300).	Samples are scheduled for fresh veal (90).	390
24	Melengestrol acetate[24]	3.0	Not in the 2010 NRP	Not in the 2010 NRP	0
25	β-Agonists[25]	2.8	Samples are scheduled as follows: beef cows (300), bulls (300), goats (90), and steers (112).	Samples are scheduled for fresh veal (90).	892
26	Levamisole[26]	2.3	Not in the 2010 NRP	Not in the 2010 NRP	0
27	Nicarbizin[27]	2.2	Not in the 2010 NRP	Not in the 2010 NRP	0
28	Morantel and pyrantel	2.2	Not in the 2010 NRP	Not in the 2010 NRP	0
29	Veterinary tranquilizers[28]	2.0	Not in the 2010 NRP	Not in the 2010 NRP	0

Summary Table II *(continued)*
Rank and Status of Veterinary Drugs
2010 U. S. NRP – Domestic and Import Sampling

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[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] 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.
[4] Xenobiotic hormone
[5] Chloramphenicol derivative.
[6] Antimicrobial
[7] Non-Steroidal Anti-Inflammatory Drug (NSAID)
[8] Non-Steroidal Anti-Inflammatory Drug (NSAID)
[9] Antiprotozoal
[10] Chloramphenicol derivative
[11] Glucocorticoid
[12] Glucocorticoid
[13] Anthelmintic, Trematodes
[14] Avermectin
[15] Coccidiostat
[16] Detected as Arsenic
[17] Coccidiostat
[18] Glucocorticoid
[19] Non-Steroidal Anti-Inflammatory Drug (NSAID)
[20] 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
[21] Antiprotozoal, coccidiostat
[22] 17-Estradiol, testosterone, and progesterone
[23] 2-thiouracil, 6-methyl-2-thiouracil, 6-propyl-2-thiouracil, 2-mercapto-1-methylimidazole, 2- mercaptobenzimidazole
[24] Xenobiotic hormone
[25] Ractopamine, zilpaterol, cimaterol, and salbutamol
[26] Anthelmintic
[27] Coccidiostat
[28] Azaperone and its metabolite azaperol, xylazine, haloperidol, acetopromazine, propionylpromazine, and chlorpromazine

Summary Table III
Rank and Status for Pesticides
2010 U. S. NRP, Domestic and Import Scheduled Sampling

Rank	Compound /Compound Class[1]	Score	Status in the 2010 NRP		
			Domestic	Import	Total
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	Samples are scheduled as follows boars/stags (230), young chickens (300), formula fed veal (230), mature chickens (195), market hogs (300), roaster pigs (300), sows (195), and steers (300).	Samples are scheduled as follows: fresh beef (301), processed beef (42), fresh horse (8), fresh lamb/mutton (92), fresh goat (24), fresh turkey (16), processed turkey (16), fresh other fowl (16), fresh varied combination (8), and processed varied combination (24).	2,597
2	Chlorinated organophosphates (COPs) and organo phosphates (OPs) - those compounds not in FSIS COP and OP multi-residue method (MRM)	16.0	Not in the 2010 NRP	Not in the 2010 NRP	0
3	Beta-Cyfluthrin	16.0	Not in the 2010 NRP	Not in the 2010 NRP	0
4	Cyfluthrin	16.0	Not in the 2010 NRP	Not in the 2010 NRP	0
5	Imazalil	16.0	Not in the 2010 NRP	Not in the 2010 NRP	0
6	Triazines – those compounds not in FSIS triazine multi-residue method (MRM)	15.0	Not in the 2010 NRP	Not in the 2010 NRP	0
7	Carbamates – those compounds in the FSIS carbamate triazine multi-residue method (MRM)	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0
8	Synthetic Pyrethroids – those compounds in the FSIS synthetic pyrethrin (pyrethroids) multi-residue method (MRM)	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0
9	1-(2,4-Dichlorophenyl)-2-(1H-imidazole-1-yl)-1-ethanol	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0
10	1,1-(2,2-Dichloroethylidene)bis(4-methoxybenzene)	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0
11	1-Methoxy-4-(1,2,2,2-tetrachloroethyl)benzene)	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0
12	3-(1-(2,4-Dichlorophenyl)-2-(1H-imidazole-1-yl)	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0

Summary Table III
Rank and Status for Pesticides *(continued)*
2010 U. S. NRP, Domestic and Import Scheduled Sampling Plan

Rank	Compound /Compound Class[1]	Score	Status in the 2010 NRP		
			Domestic	Import	Total
	ethoxy)-1,2-propane diol				
13	Cyhalothrin, lambda	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0
14	Fipronil	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0
15	MB 45950	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0
16	MB 46513	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0
17	Methoxychlor olefin	14.0	Not in the 2010 NRP	Not in the 2010 NRP	0
18	Triazines – compounds in FSIS triazine multi-residue method (MRM)	13.0	Not in the 2010 NRP	Not in the 2010 NRP	0
19	Arsanilic acid	13.0	Not in the 2010 NRP	Not in the 2010 NRP	0
20	Etoxazole	13.0	Not in the 2010 NRP	Not in the 2010 NRP	0
21	Indoxacarb	13.0	Not in the 2010 NRP	Not in the 2010 NRP	0
22	Metconazole	13.0	Not in the 2010 NRP	Not in the 2010 NRP	0
23	Prothioconazole	13.0	Not in the 2010 NRP	Not in the 2010 NRP	0

[1] Only those pesticides that have been designated as representing a broad potential public health risk are included in this table. For a complete list of pesticides that were considered for the 2010 NRP, see Table 27.

[2]*Chlorinated Hydrocarbons and Chlorinated Organophosphates (CHC/COP)* Aldrin, BHC alpha, BHC beta, BHC delta, carbophenothion, chlordane-cis (-alpha), chlordane-trans, chlordene, chlorfenvinphos, Chlorpyrifos, Chlorpyrifos methyl, Coumaphos S, Dichlorfenthion, Fenchlorphos (Ronnel), Heptachlor, Hexachlorobenzene (HCB), Lindane, Mirex, trans-nonachlor, o,p'-DDE (2,4), o,p'-DDT, p,p'-DDE (4,4), p,p'-DDT, p,p'-TDE (DDD), Phosalone, tetrachlorvinphos (stirofos); and Toxaphene *Organochlorides (OC)* Captan, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Ketone, Heptachlor epoxide A, Heptachlor epoxide B, Linuron, Methoxychlor; and ,Oxychlordane Organophosphates (OP) Diazinon *Environmental Contaminants* 2,2',4,4',5,5'-hexabromobiphenyl (HBB), halowaxes, and polychlorinated biphenyls (aroclors 1254, 1260) (PCBs)

Summary Table IV
Rank and Status of Environmental Contaminants
2010 U. S. NRP, Domestic and Import Scheduled Sampling

Enviromental Contaminant[1]	Scheduled Samples		Total
	Domestic	Import	
Lead and cadmium	Samples are scheduled for market hogs (200).	No samples are scheduled for the 2010 NRP	200

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

Overview of the U. S. National Residue Program Design

The USDA Food Safety and Inspection Service (FSIS) obtains information on the occurrence and concentration of chemical compounds in meat, poultry, and egg products through the domestic and import scheduled sampling programs. Sampling plan design begins with a list of residues that may occur in meat, poultry, and egg products and are of concern to human health. The FSIS coordinates a meeting of the Surveillance Advisory Team (SAT), an interagency committee comprised of members from the EPA, FDA, CDC, AMS, ARS, and FSIS, to develop the list. The SAT identifies and prioritizes chemical compounds of public health concern and assembles detailed information on each compound. The FSIS then combines this information with its historical data on violation rates for each chemical compound to develop the domestic sampling and the import reinspection plan. These sampling plans guide the allocation of FSIS laboratory and inspection resources.

Factors considered when developing the domestic and import scheduled sampling plans include:

- Qualitative public health risk associated with each chemical compound or compound class in meat, poultry, and egg products;
- The food animals affected by each chemical compound or compound class;
- The availability of analytical methods to determine which chemical compound or compound classes can be analyzed; and
- FSIS laboratory capacity to analyze chemical compounds or compound classes.

Domestic residue testing often is targeted towards organ tissues (i.e., kidney and liver) where many residues concentrate, thus allowing for better detection. Because of this concentration effect, FDA often bases its tolerances for veterinary drugs upon the levels found in kidney or liver. The import plan design is similar to domestic plan, with two important exceptions. Raw product testing at U.S. port-of-entry is rare, because many countries ship processed products only. Most shipped raw product consists of muscle tissue only. Exporting countries are required to identify the animal species in each product, but they are not required to identify the production class. Imported meat and poultry testing are categorized by species (e.g., poultry or porcine) and egg products is distinguished as a separate category. Importing countries often have different approved compounds and different use practices than domestic plans, so 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

Table 1 contains the candidate veterinary drugs of concern selected by members of the Surveillance Advisory Team (SAT). These veterinary drugs also are presented below. Veterinary drugs that may be detected using similar analytical methods are grouped together. 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 (High Performance Liquid Chromatography or mass spectrometry (HPLC)) for identification, quantitation by bioassay). Aminoglycosides: spectinomycin, hygromycin, streptomycin, dithydrostreptomycin, amikacin, kanamycin, apramycin, gentamycin, neomycin, tobramycin (Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (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 quantitated also 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 Multi Residue Method (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])

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[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 (HPLC or mass spectrometry) to establish their identities, where such follow-up methodologies are available.

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

- Eprinomectin (classification: antiparasitic; avermectin)
- Etodolac (classification: NSAID)
- 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)

Veterinary Drugs Banned from Extra Label use Under AMDUCA

Veterinary drugs banned from extra label use under AMDUCA, called AMDUCA prohibited, are of high public health concern. Therefore, these AMDUCA prohibited veterinary drugs are not evaluated for inclusion using the ranking formula presented below. Instead, all AMDUCA veterinary drugs are assigned automatically a high sampling priority, and are included in the NRP if methodologies and resources are available. AMDUCA prohibited veterinary drugs are listed in Summary Table I.

[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 veterinary drug classes in each of the following categories:

- U.S. NRP Historical Testing Information on Violations
- Regulatory Concern
- Lack of U.S. NRP 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, 2010 Domestic Residue Program*.

The results of the compound scoring process are presented in Table 1.

Compound Ranking

1. Background

FSIS employs qualitative risk assessment techniques and principles to create an initial ranking of the relative public health concern represented by each candidate chemical compounds or compound classes. FSIS shares this ranking with other members of the SAT for further discussion.

If FSIS is 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 is combined with consumption data to estimate exposure. By combining these exposure estimates with toxicity information, risk is estimated for each compound or compound class from the following:

Equation 1

$$\begin{aligned} \text{Risk} &= \text{Exposure} \times \text{Toxicity} \\ &= \text{Consumption} \times \text{Residue Levels} \times \text{Toxicity} \\ &= \text{Consumption} \times \text{Risk per Unit of Consumption} \end{aligned}$$

FSIS does not associate varying degree of risk when a tolerance level is exceeded by a certain amount or percentage. Instead, the relative toxicity is measured as 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.*

Category designation is based on the percent of tested carcasses found to have residues in excess of the tolerance or action level, see Table 1. This percentage is determined from data obtained from the domestic scheduled sampling plan. Veterinary drug compounds are scored by two methods: (a) the maximum violation rate seen in any production class (averaged over 1999 to 2008); and (b) the maximum, for any production class, of the violation rate (averaged over 1999 to 2008), but weighted by the size of the production class. Each veterinary drug is scored according to the higher of these two

scores.[4] *Equation 1* provides the violation rate scores assigned in Table 1 and represents a rough overall estimate of *relative* risk per unit of consumption.[5] Data on violation rates are not available for the many candidate compounds or compound classes of concern. 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" are expected to be correlated positively with the violation rate and were chosen as scoring categories to serve as predictors of violations in those compounds or compound classes for which no reliable historical testing information was available. "Regulatory Concern" predicts the "likelihood of occurrence of violations, based on regulatory intelligence information about possible misuse." "Withdrawal Time" correlates with "U.S. NRP Historical Testing Information on Violations" because a longer withdrawal time is less likely to be observed properly. When a withdrawal time for a veterinary 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 veterinary drug would not have passed. "Relative Number of Animals Treated" correlates with "U.S. NRP 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 to assign scores, which are listed in Table 1 under the category "U.S. NRP Historical Testing Information on Violations". Using the scores, it is possible to evaluate how well the above criteria correlate. A linear regression model was applied in order to impute values for the missing data. The dependent variable in this model is the category "U.S. NRP 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." Using the value of the 10 independent variables from the 10 scored compounds, a least squares linear regression model predicts scores for the 19 compounds lacking information. The following equation was derived:

Equation 2

$$Vp = 1.44 + 0.15\,(W \times N)$$

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

[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 "U.S. NRP 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.

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 0.32, which explains 32% of the data variability.

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 "U.S. NRP 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 veterinary drug or veterinary 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. *Equation 3* provides the calculation used to generate scores for relative public health concern, which are summarized in Table 1.

Equation 3

Relative Public Health Concern = *Predicted* or *Actual* score for
"U.S. NRP 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 veterinary drug violation means that a compound was found at a level that exceeds FDA standards and so there is the likelihood of a toxic effect. However, this does not address the *severity* of the effect associated with the toxic endpoint. To capture this concern, FSIS examined "Acute or Chronic Toxicity Concerns." Compounds designated to this category have the highest degree of human toxicity and 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 U.S. NRP Testing Information on Violations" has been removed from the expression for relative public health concern beginning with the planning of the 2006 NRP. The 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 differed principally in the relative weights given to the categories, "Acute or Chronic Toxicity Concerns" versus "Impact on New and Existing Human Disease."

Equation 4 developed by FSIS is presented in the column "Relative Public Health Concern Score" in Table 1. The equation is based on SAT consensus dealing with the relative importance of each category and how much each category should be allowed to alter the underlying risk-based score defined as "V" in *Equation 4*. In this formula, the score for "U.S. NRP 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. "Acute or Chronic Toxicity Concerns" received 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. *Equation 4* formalizes the basis of FSIS judgment for relative public health concern for each compound and enables others to observe and understand the adjustments made. This equation ensures consistency in how these adjustments were applied across a wide range of compounds.

Equation 4

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

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

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

The formulas developed for the veterinary drugs and 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, but 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.

Table II ranks the veterinary drugs by their rating scores, using the above weighting formula. The scores enable FSIS to bring consistency, grounded in formal risk-based considerations, to differentiate among a very diverse range of veterinary drugs and veterinary drug classes in a situation that is marked by minimal data on relative exposures**.** These rankings do not account for exposure variability due to differences in overall consumption. Relative consumption data application occurs during Phase IV based on estimates of relative exposure values for each compound/production class (C/PC) pair.

II. Prioritizing Candidate Veterinary Drugs

After ranking veterinary drugs, the ranking scores for relative public health concern were used as criteria for selecting compounds and compound classes to include in the 2010 U. S. NRP based on the availability of laboratory resources.

- The FSIS and FDA prioritize compounds and compound classes that rank 1 to 10 (out of a total of 29) and represent a potential public health concern sufficient to justify their inclusion in the 2010 U. S. NRP. In addition, FSIS is performing testing on arsenicals (ranked 16th) and β-Agonists (ranked 25th), based on guidance from FDA.

After identification of AMDUCA drugs, high-priority compounds and compound classes, FSIS applied practical considerations to determine the compounds for sampling. Availability of laboratory resources and appropriate analytical methods within the FSIS laboratories was a principle consideration. FSIS plans to schedule the following veterinary drugs in the 2010 U. S. NRP for domestic sampling:

- Antibiotics (7-plate bioassay)
- Arsenicals
- Avermectins
- ß-Agonists
- Carbadox
- Chloramphenicol
- Florfenicol
- Flunixin
- Nitrofurans
- Nitroimidazoles
- Sulfonamides
- Thyreostats
- Xenobiotic hormones

In the 2010 U. S. 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 multi-residue methods (MRMs) are effective for antibiotics, avermectins, β-agonists, and sulfonamides that distinguish individual compounds in a compound class.

Table II lists all of the original candidate veterinary drugs in rank order and specifies individual compounds and compound classes that will be scheduled for domestic sampling in the 2010 U. S. NRP. A brief explanation provides the reason for a highly ranked compound or compound class that is not included for domestic sampling in the 2010 U. S. NRP. This table also identifies future method development needs for veterinary drugs for the FSIS NRP.

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

SAT participants identified production classes of concern for each of the veterinary drugs and veterinary drug classes to be included in the 2010 U. S. NRP. SAT participants used their professional judgment to determine the likelihood of finding violations within each production class combined with the proportion of total domestic meat consumption for each production class represented. The judgment is based on information use approvals, extent of use, evidence of misuse, and past violation history. The results are presented in Tables 2A and 2B.

Compound/Production Class pairs included in the 2010 U. S. NRP are designated by a "●." Those C/PC pairs that are of regulatory concern, but that could not be included in the 2010 U. S. NRP because of laboratory resource constraints, are designated with a "○." FSIS suspended scheduled testing for certain production classes in 2010; these C/PC pairs are marked with a "■."

Production class nomenclature:

<u>Bovine</u>

- Beef cows are mature, female cattle bred for muscle development, ordinarily having given birth to one or more calves.
- 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.
- Heifers are young, female cattle that have not yet given birth to a calf.
- Steers are male cattle castrated before sexual maturity.

<u>Porcine</u>

- Boars are mature swine showing male sexual characteristics.
- Market hogs are swine, usually marketed near six-months of age and 200 to 300 pounds live weight.
- Roaster pigs are animals of both sexes and any age that are marketed with the carcass unsplit and with the head on.
- 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.

<u>Poultry</u>

- 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.
- 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 poultry include ratites (typically ostriches, emus and rheas), guineas, squabs (young, unfledged pigeons), adult pigeons, pheasants, grouse, partridge, quail, etc.
- 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 eight-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 six months of age.

Other Livestock

- Goats are animals of both sexes and any age.
- Lambs are generally defined as sheep younger than 14 months and having a break joint in at least one leg.
- Other livestock include bison, deer, elk, etc.
- Rabbits are any of several lagomorph mammals of both sexes and any age.
- Sheep are mature animals of both sexes.

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. These estimates were developed based on production data for animals (and egg products) that were presented for slaughter (or processing) in federally inspected establishments during calendar year 2008 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. *Equation 5* established the estimated relative percent of consumption represented by each production class, which was calculated by dividing the estimated total annual U.S. domestic production (pounds dressed weight) for that class by the total poundage for all production classes:

Equation 5

Estimated Relative Percent of Domestic Consumption (ERC)

$$ERC = AP/TP \times 100$$

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 3 and presented in Table 4). The resulting priority score for compound-production class pairs, shown in Tables 4 and 5, is calculated in *Equation 6.*

Equation 6

Priority Score (PS)

$$PS = CP \times RPC$$

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 accordingly. *Equation 6* risk-ranking is based on average consumption across the entire U.S. population, rather than upon maximally exposed individuals.

Priority score measurements for antibiotics, arsenicals, avermectins, and sulfonamides, florfenicol, flunixin, xenobiotic hormones, carbadox, β-agonists, and thyreostats were calculated using *Equation 6*. Initially, the compound-production class pairs were sorted by their sampling priority scores, see Table 4. 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 and 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 done typically for larger production classes, since these represent a larger potential consumer exposure).

Beginning in the 2006 NRP, low volume produced animals (i.e., ratites, squab, and bison) were not scheduled for the domestic sampling program, because the production of these animals is quite low. Not including these animals in the scheduling process allowed FSIS to focus limited resources on the development of methodologies in areas that are of high public health concern.

Beginning in the 2008 NRP, rabbits and ducks were rotated back in the NRP and will continue in the 2010 domestic sampling program. Beginning in 2009, geese were rotated back in the NRP and will continue in the 2010 domestic sampling program. Based on field reports, FDA expressed an interest in continuing limited testing for these production classes.

Adjusting Relative Sampling Numbers

Adjusting for Historical Data on Violation Rates of Individual C/PC Pairs

FSIS uses "U.S. NRP Historical Testing Information on Violations" as a critical factor in ranking the various veterinary drugs and veterinary drug classes according to their relative public health concern. Because this information is available for each production class individually, it can be used also to refine the relative priority of sampling each C/PC pair. Table 5 lists the number of analyses assigned to each C/PC pair and reports the total number of samples analyzed in the scheduled sampling plan for the period 01/01/1999 to 12/31/2008, as well as the percent of samples found to be violative (i.e., in excess of the action level or regulatory tolerance or present at any detectable level for prohibited compounds) for each compound-production class pair. FSIS used these data to develop rules to adjust sampling numbers:

- If less than 300 samples (i.e., 230 samples) were tested in the scheduled sampling plan for a compound-production class pair for the period of 01/01/1999 to 12/31/2008, then maintain the sampling level (if 300 were assigned initially, maintain 300 samples).
- If the number of samples tested in the scheduled sampling plan for a compound-production class pair for the period 01/01/1999 to 12/31/2008 was 300 samples, but violations were found during

the 2009 calendar year, or the violation rate was greater than or equal to 0.70% (≥ 0.70%) during this period, decrease the sampling level using Statistical Table in Appendix III.

- If 300 samples were tested in the scheduled sampling plan for a compound-production class pair for the period 01/01/1999 to12/31/2008 and no violations were found during the 2009 calendar year, then maintain the sampling level.
- If at least 300 samples were tested in the scheduled sampling plan for a compound-production class pair (for the period 01/01/2006 to 12/31/2008), 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.

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 2008) 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 at least one 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, 2006 to 2008

FSIS examined historical violation data for the 2006 to 2008 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

Table 5 lists the total number of scheduled samples for compound-production class pairs following adjustments for laboratory capacity, production, and violation rate data.

"Limited Resource" Sampling

The 2010 U. S. NRP includes a number of compounds for which FSIS does not have extensive sampling data. FSIS is interested in obtaining information on the occurrence in production classes when these compounds 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

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

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 2010 U. S. NRP, selection of production classes for the limited resource sampling for compounds (Table 5) was made as follows:

- Antibiotics are of concern in ducks, geese, goats, heavy calves, non-formula fed veal, bob veal and rabbits. FSIS has the analytical capacity to sample these animals at different levels for domestic production: ducks (45), geese (45), goats (90), heavy calves (90), non-formula fed veal (90), bob veal (230), and rabbits (45). FSIS will also allow sampling of the following animals for import: fresh beef (301), fresh chicken (90), fresh horse (8), fresh other fowl (16), fresh pork (234), fresh turkey (16), varied combination (8), and fresh veal (90).

- Avermectins are of concern in bulls, goats, heavy calves, non formula-fed veal, steers, and boars/stags. FSIS has the analytical capacity to sample these animals at different levels for domestic production: bulls (230), goats (230), steers (230), and boars/stags (230), heavy calves (90), and non formula-fed veal (90). FSIS will also allow sampling of the following animals for import: fresh beef (301), processed beef (42), fresh veal (90), fresh lamb/mutton (92), and fresh goat (24).

- β-Agonists are of concern for goats and steers. FSIS has the analytical capacity to sample these animals at different levels for domestic production: goats (90) and steers (112). FSIS will also allow sampling of fresh veal (90) for import.

- Carbadox is of concern in market hogs and roaster pigs. FSIS has the capacity to test 230 samples each for market hogs and roaster pigs. No import samples are scheduled for carbadox.

- Florfenicol is of concern for dairy cows and non-formula-fed veal. FSIS has the capacity to analyze 220 and 135 samples for dairy cows and non-formula-fed veal, respectively. FSIS will schedule 90 fresh beef import samples.

- Sulfonamides are of concern for bob veal, dairy cows, heavy calves, non-formula-fed veal, market hogs, roaster pigs, steers, sows, boars/stags, heifers and formula-fed veal. FSIS has the analytical capacity to sample these animals at different levels for domestic production: bob veal (230), dairy cows (230), heavy calves (90), non-formula-fed veal (90), market hogs (230), roaster pigs (135), steers (230), sows (230), boars/stags (230), heifers (230), and formula-fed veal (230). FSIS will also allow sampling of the following animals for import: fresh beef (301), processed beef (42), fresh horse (8), fresh pork (234), processed pork (40), fresh turkey (16), processed turkey (16), fresh varied combination (8), processed varied combination (24), and fresh veal (90).

- Zeranol is of concern in formula-fed veal for the 2010 U. S. NRP. FSIS will schedule domestic sampling at the analytical capacity for this veterinary drug at 90 samples. FSIS will also schedule 90 fresh veal import samples for a total of 180 samples.

The above information is presented in Table 50.

V. Scoring Key

U.S. NRP Historical Testing Information on Violations (01/01/1999 to 12/31/2008)

The two methods used to calculate violation rate scores are presented below. The calculations are based on violation rate data from a 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 1999 to 2008 divided by the total number of samples analyzed).

The results were attributed a 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 to 2002 NRPs. For previous NRPs, the criteria were identified as follows: 4 = > 1.0%; 3 = 0.50% to 1.0 %; 2 = 0.15% to 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.

The results were attributed a score as follows:

4 = > 0.15%
3 = 0.076% to 0.15%
2 = 0.01% to 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 veterinary drug or veterinary drug class, the greater of the scores from Method A and Method B.

Method A identifies those veterinary 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 veterinary drugs that may not have the highest violation rates, but are 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

Based on regulatory intelligence information (e.g., FDA on farm investigations) about possible misuse, FSIS makes professional judgments about the likelihood of occurrence of violations. Due to the public health significance of veterinary 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 is not approved for use in food animals in the United States.

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 veterinary drugs are required to follow "conditions of use." For each veterinary drug in the production class for 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. The withdraw time provides sufficient time for the concentration of the veterinary drug in the animal to decrease below the tolerance. Approved veterinary drugs were scored as follows:

- Score = 4, when the withdrawal time is 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 veterinary drugs, scores in this category were assigned based on estimates of the veterinary drug's half-life.

Impact on New and Existing Human Disease

The use or misuse of a veterinary 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 veterinary 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

Animal treatment 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 veterinary drug fall within the top one-third of those administered to animals treated within a particular category and dosage form of active ingredient.

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

2 = Products containing this veterinary drug fall within the bottom one-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".

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

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

Acute or Chronic Toxicity Concerns

The toxicity of the compound and the severity associated with the compound's toxic endpoint are scored as follows:

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

3 = Systemic No Observed Effect Levels (NOELs) seen at intermediate to low doses in laboratory test animals, but has antimicrobial effects that have the high potential to alter intestinal microflora.

2 = Systemic NOELs seen at high oral doses in laboratory test animals and have 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
2010 U. S. NRP, Domestic Scheduled Sampling

Compound / Compound Class	Historical Testing Info. on Violations (FSIS) (V)[1]	Regulatory Concern (CVM) (R)[2]	Withdrawal Time (CVM) (W)[3]	Relative Number Animals Treated (CVM) (N)[4]	Predicted V, V = (1.44 + 0.15(W*N))[5]	Impact New & Existing Human Disease (CDC) (D)[6]	Acute or Chronic Toxicity Concerns (CVM) (T)[7]	Relative Public Health Concern Score = V*[(D+3*T)/4]
Antibiotics quantitated by the FSIS Bioassay MRM[8]	4	4	4	4	4.0	4	4	**16.0**
Avermectins in FSIS MRM (incl. doramectin, ivermectin, moxidectin) (antiparasitics)	4	3	4	4	4.0	2	4	**14.0**
Sulfonamides (antimicrobials, some are coccidiostats)	4	4	3	4	4.0	3	3	**12.0**
Xenobiotic hormones (zeranol, trenbolone)	4	4	1	3	4.0	3	3	**12.0**
Florfenicol (chloramphenicol deriv.)	NT[9]	3	4	4	3.8	3	3	**11.5**
Carbadox (antimicrobial)	3	4	4	3	3.0	3	4	**11.3**
Flunixin	4	4	2	3	4.0	1	2	**7.0**
Dipyrone (NSAID)	NT	4	3	1	2.0	1	4	**6.5**
Berenil (antiprotozoal, Histomonas)	NT	4	4	1	2.0	2	3	**5.6**
Thiamphenicol (chloramphenacol derivative)	NT	3	2	1	1.7	3	3	**5.2**
Methyl prednisone (glucocorticoid)	NT	4	2	2	2.0	1	3	**5.1**
Dexamethasone (glucocorticoid)	NA[10]-O	4	2	2	2.0	1	3	**5.1**

Table 1
Scoring Table for Veterinary Drugs
2010 U. S. NRP, Domestic Scheduled Sampling

Clorsulon (anthelmintic, Trematodes)	NT	2	3	2	2.3	2	2	**4.7**
Eprinomectin (avermectin)	NT	2	2	3	2.3	2	2	**4.7**
Amprolium (coccidiostat)	NT	4	2	2	2.0	3	2	**4.6**
Arsenicals (detected as As)	2	4	2	4	2.0	3	2	**4.5**
Lasalocid (coccidiostat)	NT	2	1	3	2.0	3	2	**4.5**
Prednisone (glucocorticoid)	NT	3	2	1	1.7	1	3	**4.4**
Etodolac (NSAID)	NT	3	2	1	1.7	1	3	**4.4**
Benzimidazoles (anthelmintic)	NT	1	3	2	2.3	1	2	**4.1**
Halofuginone (antiprotozoal, coccidiostat)	NA-1	1	2	2	2.0	2	2	**4.1**
Hormones (naturally-occurring)	NT	4	1	4	2.0	2	2	**4.1**
Thyreostats (incl. thiouracil)	1	4	3	1	1.0	2	4	**3.5**
Melengestrol Acetate (MGA; synthetic hormone)	1	2	1	4	1.0	3	3	**3.0**
beta agonists (ractopamine, zilapterol, cimaterol, salbutamol)	1	4	2	3	1.0	2	3	**2.8**
Levamisole (anthelmintic, Nematodes)	NA-1	3	3	2	2.3	1	1	**2.3**
Nicarbazin (coccidiostat)	NT	2	2	1	1.7	2	1	**2.2**

Table 1
Scoring Table for Veterinary Drugs
2010 U. S. NRP, Domestic Scheduled Sampling

Morantel and pyrantel (anthelmintic)	NT	1	1	2	1.7	2	1	**2.2**
Veterinary tranquilizers	NT	4	2	2	2.0	1	1	**2.0**

[1] Scores for historical testing for residue violations, V, are information 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 section on *Compound Rankings, Estimated Violation Rates*. Note the predicted value is used unless V is known.
[6] Scores on impact new and existing human diseases, D, are provided by FDA's Center for Disease Control and Prevention
[7] Scores for acute or chronic toxicity concerns, T, are provided by FDA's Center for Disease Control and Prevention
[8] MRM = Multi Residue Method
[9] NT = Not tested by FSIS
[10] NA = Tested by FSIS, but violation information does not apply

Table 2A
Production Classes Considered for each Veterinary Drug and Drug Class (AMDUCA Drugs)
2010 U. S. 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)*
1.937	Beef cows	●	-	●	-	-	○
0.101	Boars/Stags	-	-	●	-	-	-
0.035	Bob veal	-	●	●	-	-	-
0.490	Bulls	●	-	●	-	-	○
1.412	Dairy cows	-	●	●	■	-	○
0.144	Ducks	-	-	●	-	-	-
3.375	Egg products	-	-	-	-	-	-
0.084	Formula-fed veal	-	●	●	-	-	-
0.002	Geese	-	-	●	-	-	-
0.029	Goats	●	-	●	-	-	-
0.013	Heavy calves	-	-	●	-	-	-
6.928	Heifers	-	-	●	-	-	-
0.007	Lambs	-	-	●	-	-	-
19.495	Market hogs	-	-	●	●	-	-
0.793	Mature chickens	-	-	●	-	-	-
0.139	Mature sheep	-	-	●	-	-	-
0.049	Mature turkeys	-	■	●	-	-	-
0.003	Non-Formula-fed veal	■	-	●	-	-	-
0.001	Rabbits	-	-	●	-	-	-
0.051	Roaster pigs	-	-	●	-		-
0.976	Sows	-	-	●	●	-	-
12.622	Steers	●	●	●	-	-	-
44.340	Young chickens	-	■	●	-	●	-
6.950	Young turkeys	-	-	■	-	■	-

● = Compound/Production Class Pairs included in the 2010 NRP.
○ = Compound/Production Class Pairs that are of regulatory concern, but are not included in the 2010 NRP because of laboratory resource constraints.
■ = Compound/Production Class Pairs that have been suspended from testing by FSIS in the 2010 NRP.

[i] ERC = Estimated relative percent of domestic consumption, calendar year 2008. 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 β-Agonist methodology that includes ractopamine, clenbuterol, cimaterol, zilpaterol, and salbutamol.
[iv] Phenylbutazone will not be scheduled in the 2010 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
2010 U. S. NRP, Domestic Scheduled Sampling

ERC[i]	*Production Class*	*Veterinary Drug and Priority Rating*						
		Antibiotics[ii]	*Arsenicals*	*Avermectins*	*Carbadox*	*Florfenicol*	*Flunixin*	*Melengestrol Acetate (MGA)*
		16.0	4.5	14.0	11.3	11.5	7.0	3.0
1.937	Beef cows	●	●	●	-	○	●	-
0.101	Boars/Stags	●	-	●	-	○	○	-
0.035	Bob veal	●	-	-	-	○	●	-
0.490	Bulls	●	-	●	-	○	●	-
1.412	Dairy cows	●	-	-	-	●	●	-
0.144	Ducks	●	-	-	-	-	-	-
3.375	Egg products	-	■	-	-	-	-	-
0.084	Formula-fed veal	●	-	●	-	○	○	-
0.002	Geese	●	-	-	-	-	-	-
0.029	Goats	●	-	●	-	-	-	-
0.013	Heavy calves	●	-	●	-	-	■	-
6.928	Heifers	●	-	-	-	-	-	-
0.007	Lambs	●	-	■	-	-	-	-
19.495	Market hogs	●	■	■	●	○	-	-
0.793	Mature chickens	●	-	-	-	-	-	-
0.139	Mature sheep	●	-	■	-	-	-	-
0.049	Mature turkeys	●	●	-	-	○	-	-
0.003	Non-Formula-fed veal	●	-	●	-	●	○	-
0.001	Rabbits	●	-	-	-	-	-	-
0.051	Roaster pigs	●	-	-	●	○	-	-
0.976	Sows	●	-	-	-	○	○	-
12.622	Steers	●	-	●	-	●	-	-
44.340	Young chickens	●	■	-	-	○	-	-
6.950	Young turkeys	■	-	-	-	○	-	-

Table 2B *(continued)*
Production Classes Considered for each Veterinary Drug and Drug Class
2010 U. S. NRP, Domestic Scheduled Sampling

ERC	*Production Class*	*Veterinary Drug and Priority Rating*				
		β-Agonists	*Sulfonamides*	*Thyreostats*	*Trenbolone*	*Zeranol*
		2.8	12.0	3.5	12.0	12.0
1.937	Beef cows	●	●	-	-	-
0.101	Boars/Stags	-	●	-	-	-
0.035	Bob veal	-	●	-	-	-
0.490	Bulls	●	●	-	-	-
1.412	Dairy cows	-	●	■	-	-
0.144	Ducks	-	■	-	-	-
3.375	Egg products	-	●	-	-	-
0.084	Formula-fed veal	-	●	-	●	●
0.002	Geese	-	-	-	-	-
0.029	Goats	●	-	-	-	-
0.013	Heavy calves	-	●	-	-	-
6.928	Heifers	-	●	-	-	-
0.007	Lambs	-	-	-	-	-
19.495	Market hogs	-	●	-	-	-
0.793	Mature chickens	-	●	-	-	-
0.139	Mature sheep	-	-	-	-	-
0.049	Mature turkeys	-	-	-	-	-
0.003	Non-Formula-fed veal	■	●	-	■	■
0.001	Rabbits	-	-	-	-	-
0.051	Roaster pigs	-	●	-	-	-
0.976	Sows	-	●	●	-	-
12.622	Steers	●	●	-	-	-
44.340	Young chickens	-	■	-	-	-
6.950	Young turkeys	-	■	-	-	-

● = Compound/Production Class Pairs included in the 2010 NRP.
○ = Compound/Production Class Pairs that are of regulatory concern, but are not included in the 2010 NRP because of laboratory resource constraints.
■ = Compound/Production Class Pairs that have been suspended from testing by FSIS in the 2010 NRP.

[i] ERC = Estimated relative percent of domestic consumption, calendar year 2008. 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

Table 3
Estimated Relative Consumption for Domestically Produced Meat, Poultry, and Egg Products Based on 2008 Animal and Egg Production Data[A]
2010 U. S. NRP, Domestic Scheduled Samping Plan

Production Class	Number of Head Slaughtered[B]	Pounds per Animal (dressed weight)[C]	Total Pounds (dressed weight)	Percent Estimated Relative Consumption
Bulls	620,176	888	550,716,288	0.490%
Beef cows	3,575,807	609	2,177,666,463	1.937%
Dairy cows	2,606,240	609	1,587,200,160	1.412%
Heifers	10,086,668	772	7,786,907,696	6.928%
Steers	16,929,880	838	14,187,239,440	12.622%
Bob veal	518,093	75	38,856,975	0.035%
Formula-fed veal	387,088	245	94,836,560	0.084%
Non-formula-fed veal	11,079	350	3,877,650	0.003%
Heavy calves	35,166	400	14,066,400	0.013%
SUBTOTAL, CATTLE	**34,770,197**		**26,441,367,632**	**23.525%**
Market hogs	110,668,451	198	21,912,353,298	19.495%
Roaster pigs	815,756	70	57,102,920	0.051%
Boars/Stags	548,425	208	114,072,400	0.101%
Sows	3,527,594	308	1,086,498,952	0.967%
SUBTOTAL, SWINE	**115,560,226**		**23,170,027,570**	**20.614%**
Sheep	119,169	69	156,160,179	0.139%
Lambs	2,263,191	67	7,984,323	0.007%
Goats	658,199	50	32,909,950	0.029%
SUBTOTAL, OVINE	**3,040,559**		**197,054,452**	**0.175%**
Bison	54,828	610	33,445,080	0.030%
TOTAL, ALL LIVESTOCK	**153,425,810**		**49,841,894,734**	**44.344%**
Young chickens	8,943,751,399	Not reported	49,837,505,794	44.340%
Mature chickens	154,053,556	Not reported	890,773,692	0.793%
Young turkeys	269,413,032	Not reported	7,811,149,068	6.950%
Mature turkeys	2,079,804	Not reported	54,768,945	0.049%
Ducks	24,139,271	Not reported	161,755,860	0.144%
Geese	141,164	Not reported	1,948,936	0.002%
Other fowl (includes squab)	2,252,409	Not reported	2,527,327	0.002%
SUBTOTAL, POULTRY	**9,395,830,635**		**58,760,429,622**	**52.279%**
Rabbits	258,340	Not reported	1,305,792	0.001%
Egg products	Not applicable	Not applicable	3,793,710,000 [D]	3.375%
GRAND TOTAL in POUNDS, ALL PRODUCTION CLASSES			**112,397,340,148**	**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 2008 Summary," National Agricultural Statistics Service (NASS), March 2009. 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 2008

Table 4
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2008(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Antibiotics (7-Plate Bioassay)	16.0	Young chickens	44.34	709.44	300
Antibiotics (7-Plate Bioassay)	16.0	Market hogs	19.495	311.92	300
Sulfonamides	12.0	Market hogs	19.495	233.94	300
Carbadox	11.3	Market hogs	19.495	220.294	300
Antibiotics (7-Plate Bioassay)	16.0	Steers	12.622	201.952	300
Avermectins	14.0	Steers	12.622	176.708	300
Sulfonamides	12.0	Steers	12.622	151.464	300
Florfenicol	11.5	Steers	12.662	145.153	300
Antibiotics (7-Plate Bioassay)	16.0	Heifers	6.928	110.848	300
Sulfonamides	12.0	Heifers	6.928	83.136	300
Sulfonamides	12.0	Egg products	3.375	40.50	300
Beta-Agonists	2.8	Steers	12.622	35.345	300
Arsenicals	4.5	Young turkeys	6.95	31.275	300

Table 4 (*continued)*
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2008(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Antibiotics (7-Plate Bioassay)	16.0	Beef cows	1.937	30.992	300
Avermectins	14.0	Beef cows	1.937	27.118	300
Sulfonamides	12.0	Beef cows	1.937	23.244	300
Antibiotics (7-Plate Bioassay)	16.0	Dairy cows	1.412	22.592	300
Sulfonamides	12.0	Dairy cows	1.412	16.944	300
Florfenicol	11.5	Dairy cows	1.412	16.238	300
Antibiotics (7-Plate Bioassay)	16.0	Sows	0.967	15.472	300
Flunixin	7.0	Beef cows	1.937	13.559	300
Antibiotics (7-Plate Bioassay)	16.0	Mature chickens	0.793	12.688	300
Sulfonamides	12.0	Sows	0.967	11.604	300
Flunixin	7.0	Dairy cows	1.412	9.884	300
Sulfonamides	12.0	Mature chickens	0.793	9.516	300
Arsenicals	4.5	Beef cows	1.937	8.717	300

Table 4 (*continued)*
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2008(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Antibiotics (7-Plate Bioassay)	16.0	Bulls	0.49	7.84	300
Avermectins	14.0	Bulls	0.49	6.86	300
Sulfonamides	12.0	Bulls	0.49	5.88	300
Beta-Agonists	2.8	Beef cows	1.937	5.424	300
Flunixin	7.0	Bulls	0.49	3.43	300
Thyreostats	3.5	Sows	0.967	3.385	300
Antibiotics (7-Plate Bioassay)	16.0	Ducks	0.144	2.304	300
Antibiotics (7-Plate Bioassay)	16.0	Mature sheep	0.139	2.224	300
Antibiotics (7-Plate Bioassay)	16.0	Boars/stags	0.101	1.62	300
Avermectins	14.0	Boars/stags	0.101	1.414	300
Beta-Agonists	2.8	Bulls	0.49	1.372	300
Antibiotics (7-Plate Bioassay)	16.0	Formula-fed veal	0.084	1.344	300
Sulfonamides	12.0	Boars/stags	0.101	1.212	300

Table 4 (*continued)*
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2008(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Avermectins	14.0	Formula-fed veal	0.084	1.176	300
Sulfonamides	12.0	Formula-fed veal	0.084	1.01	300
Trenbolone	12.0	Formula-fed veal	0.084	1.01	300
Zeranol	12.0	Formula-fed veal	0.084	1.01	300
Antibiotics (7-Plate Bioassay)	16.0	Roaster pigs	0.051	0.816	300
Antibiotics (7-Plate Bioassay)	16.0	Mature turkeys	0.049	0.784	300
Sulfonamides	12.0	Roaster pigs	0.051	0.612	300
Carbadox	11.3	Roaster pigs	0.051	0.576	300
Antibiotics (7-Plate Bioassay)	16.0	Bob veal	0.035	0.56	300
Antibiotics (7-Plate Bioassay)	16.0	Goats	0.029	0.464	300
Sulfonamides	12.0	Bob veal	0.035	0.42	300
Avermectins	14.0	Goats	0.029	0.406	300
Flunixin	7.0	Bob veal	0.035	0.245	300

Table 4 (*continued)*
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2008(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Arsenicals	4.5	Mature turkeys	0.049	0.221	300
Antibiotics (7-Plate Bioassay)	16.0	Heavy calves	0.013	0.208	300
Avermectins	14.0	Heavy calves	0.013	0.182	300
Sulfonamides	12.0	Heavy calves	0.013	0.156	300
Antibiotics (7-Plate Bioassay)	16.0	Lambs	0.007	0.112	300
Beta-Agonists	2.8	Goats	0.029	0.081	300
Antibiotics (7-Plate Bioassay)	16.0	Non formula fed veal	0.003	0.048	300
Avermectins	14.0	Non formula fed veal	0.003	0.042	300
Sulfonamides	12.0	Non formula fed veal	0.003	0.036	300
Florfenicol	11.5	Non formula fed veal	0.003	0.035	300
Antibiotics (7-Plate Bioassay)	16.0	Geese	0.002	0.032	300
Antibiotics (7-Plate Bioassay)	16.0	Rabbits	0.001	0.016	300

Table 5
Number of Scheduled Samples for Veterinary Drug/Production Class Pairs
2010 U. S. 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]	Beef cows	30.992	2796	0.11	N/A	300	300	300	300	300	300
Antibiotics[11]	Boars/stags	1.616	2182	0.23	N/A	300	300	300	300	300	300
Antibiotics[11]	Bob veal	0.560	3036	3.36	<1	300	300	300	230	230	230
Antibiotics[11]	Bulls	7.840	1476	0	N/A	300	300	300	300	300	300
Antibiotics[11]	Dairy cows	22.592	4134	0.65	N/A	300	300	300	300	300	300
Antibiotics[11]	Ducks	2.304	1418	0	N/A	300	300	45	45	45	45
Antibiotics[11]	Formula-fed veal	1.344	3986	0.55	N/A	300	300	300	300	300	300
Antibiotics[11]	Geese	0.032	342	0	N/A	300	300	45	45	45	45
Antibiotics[11]	Goats	0.464	1298	0.15	>1	300	300	300	90	90	90
Antibiotics[11]	Heavy calves	0.208	1606	0.75	N/A	300	300	300	90	90	90
Antibiotics[11]	Heifers	110.848	4107	0.05	N/A	300	300	300	300	300	300
Antibiotics[11]	Lambs	0.112	2093	0.05	N/A	300	300	300	300	300	300
Antibiotics[11]	Market hogs	311.920	4322	0.16	N/A	300	300	300	300	300	300
Antibiotics[11]	Mature chickens	12.688	1517	0.07	N/A	300	300	300	300	300	300
Antibiotics[11]	Mature turkeys	0.784	901	0	N/A	300	300	300	300	300	300
Antibiotics[11]	Non-formula-fed veal	0.048	1436	2.16	N/A	300	300	300	90	90	90
Antibiotics[11]	Rabbits	0.016	822	3.53	N/A	300	300	45	45	45	45
Antibiotics[11]	Roaster pigs	0.816	1393	0.50	N/A	300	300	300	300	300	300
Antibiotics[11]	Sheep	2.224	857	0	N/A	300	300	300	300	300	300
Antibiotics[11]	Sows	15.472	2742	0.51	N/A	300	300	300	300	300	300
Antibiotics[11]	Steers	201.952	2505	0	N/A	300	300	300	300	300	300
Antibiotics[11]	Young chickens	709.440	3395	0.06	N/A	300	300	300	300	300	300
Totals						**6600**					**5,135**
Arsenicals	Beef cows	8.717	1742	0.06	<1	300	300	300	300	300	300
Arsenicals	Mature turkeys	0.221	670	0	N/A	300	300	300	300	300	300
Arsenicals	Young turkeys	31.275	2530	0.04	N/A	300	300	300	300	300	300
Totals						**900**					**900**
Avermectins	Beef cows	27.118	1833	0.11	N/A	300	300	300	300	300	300
Avermectins	Bulls	6.86	2878	0.31	<1	300	300	300	230	230	230
Avermectins	Boars/stags	1.414	828	0.12	<1	300	300	300	230	230	230
Avermectins	Formula fed veal	1.176	1050	0	N/A	300	300	300	300	300	300
Avermectins	Goats	0.406	2684	1.79	N/A	300	300	230	230	230	230
Avermectins	Heavy calves	0.182	1660	0.54	<1	300	300	300	90	90	90
Avermectins	Non-formula-fed veal	0.042	1102	0.45	N/A	300	300	300	90	90	90
Avermectins	Steers	176.708	3879	0.05	N/A	300	300	300	230	230	230
Totals						**2,400**					**1,700**

Table 5 *(continued)*
Number of Scheduled Samples for Veterinary Drug/Production Class Pairs
2010 U. S. 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]
ß-Agonists	Beef cows	5.424	0	0	N/A	300	300	300	300	300	300
ß-Agonists	Bulls	1.372	0	0	N/A	300	300	300	300	300	300
ß-Agonists	Goats	0.081	221	0	N/A	300	300	300	90	90	90
ß-Agonists	Steers	35.342	2274	0	N/A	300	300	300	112	112	112
Totals						**1,200**					**802**
Carbadox	Market hogs	220.294	1181	0.08	N/A	300	300	300	230	230	230
Carbadox	Roaster pigs	0.576	1087	0.64	>1	300	300	300	230	230	230
Totals						**600**					**460**
Chloramphenicol	Bob veal	N/A	310	0	N/A	300	300	300	300	300	300
Chloramphenicol	Dairy cows	N/A	1648	0	N/A	300	300	300	300	300	300
Chloramphenicol	Formula fed veal	N/A	1744	0	N/A	300	300	300	300	300	300
Chloramphenicol	Steers	N/A	317	0	N/A	300	300	300	300	300	300
Totals						**1,200**					**1,200**
Florfenicol	Dairy cows	16.238	850	0.12	N/A	300	300	300	300	300	220
Florfenicol	Non formula fed veal	0.035	517	2.13	N/A	300	300	300	230	230	135
Florfenicol	Steers	145.153	0	0	N/A	300	300	300	300	300	300
Totals						**900**					**655**
Flunixin	Beef cows	13,559	306	0	N/A	300	300	300	300	300	300
Flunixin	Bob veal	0.245	85	0	N/A	300	300	300	300	300	300
Flunixin	Bulls	3.43	316	0.32	N/A	300	300	300	300	300	300
Flunixin	Dairy cows	9.884	1592	0.88	N/A	300	300	300	300	300	300
Totals						**1,200**					**1,200**
Nitrofurans	Market hogs	N/A	605	0	N/A	300	300	300	300	300	300
Nitrofurans	Sows	N/A	620	0	N/A	300	300	300	300	300	300
Totals						**600**					**600**
Nitroimidazoles	Young chickens	N/A	599	0	N/A	300	300	300	300	300	300
Totals						**300**					**300**
Sulfonamides	Beef cows	23.244	2668	0.11	N/A	300	300	300	300	300	300

Table 5 *(continued)*
Number of Scheduled Samples for Veterinary Drug/Production Class Pairs
2010 U. S. 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	0.42	3202	0.66	<1	300	300	300	230	230	230
Sulfonamides	Boars/stags	1.212	1806	0.17	N/A	300	300	300	230	230	230
Sulfonamides	Bulls	5.88	2720	0.11	N/A	300	300	300	300	300	300
Sulfonamides	Dairy cows	16.944	2719	0.40	N/A	300	300	300	230	230	230
Sulfonamides	Egg products	40.5	1649	0	N/A	300	300	300	300	300	300
Sulfonamides	Formula- fed veal	1.008	1964	0.31	N/A	300	300	300	230	230	230
Sulfonamides	Heavy calves	0.156	2011	0.30	<1	300	300	300	90	90	90
Sulfonamides	Heifers	83.136	2048	0.05	<1	300	300	300	230	230	230
Sulfonamides	Market hogs	233.940	4044	0.54	<1	300	300	300	230	230	230
Sulfonamides	Mature chickens	9.516	1318	0	N/A	300	300	300	300	300	300
Sulfonamides	Non-formula-fed veal	0.036	1549	0.45	<1	300	300	300	90	90	90
Sulfonamides	Roaster pigs	0.612	1585	1.32	N/A	300	300	300	135	135	135
Sulfonamides	Sows	11.604	2175	0.18	<1	300	300	300	230	230	230
Sulfonamides	Steers	151.464	3551	0.14	N/A	300	300	300	230	230	230
Totals						**4,500**					**3,355**
Thyreostats	Sows	3.385	0	0	N/A	300	300	300	300	300	300
Totals						**300**					**300**
Trenbolone	Formula- fed veal	1.008	1750	0	N/A	300	300	300	300	300	300
Totals						**300**					**300**
Zeranol	Formula- fed veal	1.008	2340	1.92	N/A	300	300	300	90	90	90
Totals						**300**					**90**

[1] For an explanation of this score, see Table 4.
[2] Number of Samples (1999-2008) 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, 1999-2008.
[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 2008 based on the guideline that one violation within 300 samples represents 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.
[5] The number obtained from the last column of Table 4.

Table 5 *(continued)*
Number of Scheduled Samples for Veterinary Drug/Production Class Pairs
2010 U. S. NRP, Domestic Scheduled Sampling

[6] If the violation rate for a compound-production class pair was determined to be 0% for the 3- year period (2006-2008), 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, 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 Sampling Plan for Veterinary Drugs

I. Selecting and Ranking Candidate Compounds

FSIS does not have sufficient historical data on veterinary drugs in imported products to predict their violation rates. The import reinspection sampling plan (IRSP) will focus on the same candidate veterinary drugs as specified in the domestic sampling plan and will be ranked according to ranking scores generated for the domestic scheduled sampling plan. If FSIS believes that a compound is being misused in a foreign country, then the compound/country pair will be added to the IRSP.

II. Prioritizing Candidate Veterinary 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 focused on compounds and compound classes that are a potential public health concern for inclusion in the 2010 U. S. NRP.

After identifying high-priority compounds and compound classes, FSIS applied other practical considerations to determine the compounds for sampling. The principal considerations include availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. When laboratory resources are limited, FSIS focuses resource allocation to domestic products because imported products have been inspected previously by the country of origin. Based on these considerations, the following compounds are included in the 2010 scheduled sampling plan.

Antibiotics:
At present, the following antibiotics are quantitated using the 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).
- **Florfenicol** (classification: antibiotic; chloramphenicol derivative)

Other veterinary drugs:

- **Arsenicals** (detected as elemental arsenic)
- **Avermectins** (classification: anthelmintics; compounds in FSIS MRM: doramectin, ivermectin, and moxidectin)
- ***ß*-Agonists** (ractopamine, clenbuterol, cimaterol, zilpaterol and salbutamol; growth promotants)
- **Flunixin** (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.

- **Hormones** and **xenobiotics** (trenbolone, zeranol)
- **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)
- **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 drugs Banned from Extra label use under AMDUCA

Veterinary drugs banned from extra label use under AMDUCA, called AMDUCA prohibited, are of high public health concern. Therefore, these AMDUCA prohibited veterinary drugs are not evaluated for inclusion using the ranking formula presented below. Instead, all AMDUCA veterinary drugs are automatically assigned a high sampling priority and are included in the NRP if methodologies and resources are available. AMDUCA prohibited veterinary drugs are listed in Summary Table I.

- **Chloramphenicol** (classification: antibiotic; AMDUCA prohibited)
- **Nitromidazoles** (classification: antiprotozoals; compounds in FSIS MRM: dimetridazole, ipronidazole)

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

FDA SAT participants identified the veterinary drugs and veterinary drug classes scheduled for inclusion in the 2010 U. S. NRP for which they had a concern (see Table 6). Compound/product class pairs included in the 2010 U. S. NRP are designated by a "●." Those compound/product class pairs that are of potential public health concern, but that are not included in the 2010 U. S. NRP because of laboratory resource constraints, are marked with a "○."

IV. Allocation of Sampling Resources

Egg Products

Residue analysis samples 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 percent 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.[2]

Animal Product Classes

Table 7 lists the estimated amount and percentage of all the product classes imported into the United States. The data for the product classes are obtained from the Automated Import Information System. The percent of each product class imported annually is calculated using *Equation 7*:

[2] This paragraph explains FSIS policies on imported egg product testing. However, in 2010 no imported egg products were tested.

Equation 7

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

Equation 8 calculates the relative sampling priority by multiplying the percent product class (P_C) by the veterinary drug scores obtained in Phase I.

Equation 8

$$\text{Relative Sampling Priority (RSP)} = (P_C) \times \text{Veterinary drug Score}$$

Based on the scores, one of the following sampling options is chosen: (1) high regulatory concern (300 samples/year), (2) moderate regulatory concern (230 samples/year), and (3) low regulatory concern (90 samples/year). These data are presented in Table 10.

FSIS, in its IRSP, 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.

(a) processed beef from Australia, Canada, Mexico, New Zealand, Uruguay, and Costa Rica;
(b) combination products (varied) and veal from Canada;
(c) lamb and mutton from Australia, Canada, and New Zealand;
(d) pork from Canada, Denmark, Mexico, and Netherlands;
(e) chicken processed from Canada and Mexico;
(f) turkey from Canada; and
(g) other fowl from Canada and France.

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, 24 samples will be taken for each analysis, eight samples for each country (3 countries × 8 samples).

After the allocation of samples among different countries, the final number of samples for a compound/product class is determined. The adjusted 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 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 (i.e., less than one percent and greater than one percent).

Allocation of Samples in Product Classes Whose Total Volume Imported is Less Than One Percent

When the amount of an import product class is less than one percent, eight samples per compound/compound class are taken from each country. This sampling approach applies to horse, fresh; chicken, processed; goat, fresh and processed; turkey, fresh and processed; other fowl, fresh; varied combination, fresh and processed. 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 number of samples are listed in the columns labeled "Unadjusted Number of Samples" in Tables 11 to 25. The adjusted numbers of samples per country/per product class is listed in the column labeled "Final Number of Samples" in Tables 11 to 25.

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 lists the amount of product imported from each country. The percent of a product class imported from a country is calculated using *Equation 9* and listed in Table 9.

Equation 9

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

Amount of Product Class from Country × 100 Total Amount of Product Class

Equation 10 calculates the number of samples taken at the port-of-entry based on the relative amount of product class imported per country. The results are listed in the column labeled "Unadjusted Number of Samples ($U_{C/S}$)" in Tables 11 to 25.

Equation 10

Unadjusted Number of Samples per Country ($U_{C/S}$) = Total Number of Samples $_X$ ($P_{C/C}$)/100

A country with less than eight samples is assigned a minimum of eight samples, indicated in the column labeled "Adjustment #1" in Tables 11 to 25. The results of this adjustment are in the column labeled "Initial Adj #." A country that requires more than eight samples must perform a second adjustment as detailed in *Equation 11*.

Equation 11

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

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 obtains all their raw materials from eligible sources, then no residue samples will be processed from that country. The final number of products sampled are indicated in Tables 11 to 26 in the column labeled "Final Adj.#."

Notes:

The candidate veterinary drugs of concern for the IRSP are the same as those listed in the domestic sampling plan.

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 Veterinary Drug or Drug Class
2010 U. S. 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	○	●	-	-	-	-	-	-	-	-	-
Mutton/Lamb fresh	○	●	-	-	-	-	-	-	○	-	-
Mutton/Lamb 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 2010 Import Reinspection Sampling Plan
○ = 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
2010 U. S. NRP, Import Reinspection Sampling Plan

PRODUCT	PRODUCT IMPORTED IN POUNDS	% PRODUCT IMPORTED
Beef, fresh	1,700,819,825	52.001
Beef, processed	208,049,802	6.361
Horse, fresh	1,374,906	0.042
Pork fresh	702,791,997	21.487
Pork, processed	162,220,257	4.960
Veal, fresh	56,874,098	1.739
Veal, processed	44,684	0.001
Lamb/Mutton, fresh	169,691,108	5.188
Lamb/Mutton, processed	479,080	0.015
Goat, fresh	23,059,190	0.705
Goat, processed	-	0
Turkey, fresh	13,877,365	0.424
Ratite, fresh	190,529	0.006
Chicken, fresh	106,013,244	3.241
Chicken, processed	90,026,656	2.753
Turkey, processed	12,577,183	0.385
Other Fowl, fresh	3,791,158	0.116
Other Fowl, processed	166,212	0.005
Varied combination, fresh	5,292	0
Varied combination, processed	18,664,569	0.571
Guineas/squabs,fresh	-	0
Total lbs/country	3,270,717,119	100.000%

Table 8
Estimated Annual Amount (lbs) of Product Imported per Country
2010 U. S. NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Argentina	Australia	Brazil	Canada	Chile	Costa Rica
Beef, fresh	-	488,744,939	-	668,470,717	1,716,927	14,229,944
Beef, processed	33,107,830	2,640,611	113,321,050	48,506,683	-	-
Horse, fresh	-	-	-	1374906	-	-
Pork, fresh	-	49,019	-	592,648,580	5,729,102	-
Pork, processed	-	-	34,864	112,721,412	-	-
Veal, fresh	-	9,422,209	-	24,194,966	-	-
Veal, processed	-	-	-	44,648	-	-
Lamb/Mutton, fresh	-	112,023,113	-	366,584	-	-
Lamb/Mutton, processed	-	238,518	-	101,572	-	-
Goat, fresh	-	22,659,607	-	-	-	-
Turkey, fresh	-	-	-	13,202,691	674,674	-
Ratite, fresh	-	145,272	-	-	-	-
Chicken, fresh	-	-	-	104,469,381	1,543,863	-
Chicken, processed	-	-	-	74,196,356	-	-
Turkey, processed	-	-	-	2,353,533	-	-
Other Fowl, fresh	-	-	-	3,586,087	-	-
Other Fowl, processed	-	-	-	127,687	-	-
Varied combination, fresh	-	-	-	5,292	-	-
Varied combination, processed	-	7,916	-	13,498,315	-	-
Guineas/squabs, fresh	-	-	-	-	-	-
Total lbs/country	33,107,830	635,931,204	113,355,914	1,659,869,410	9,664,566	14,229,944

Table 8 (*continued)*
Estimated Annual Amount (lbs) of Product Imported per Country
2010 U. S. NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Croatia	Denmark	Finland	France	Germany
Beef, fresh	-	-	-	-	-
Beef, processed	-	-	-	-	-
Horse, fresh	-	-	-	-	-
Pork, fresh	-	83752936	2,624,771	-	-
Pork, processed	337,777	3953431	-	-	711,805
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	-	-	-	205,071	-
Other Fowl, processed	-	-	-	38,525	-
Varied combination, fresh	-	-	-	-	-
Varied combination, processed	-	-	-	3,822	-
Guineas/squabs, fresh	-	-	-	-	-
Total lbs/country	337,777	87,706,367	2,624,771	247,418	711,805

Table 8 (*continued*)
Estimated Annual Amount (lbs) of Product Imported per Country
2010 U. S. NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Honduras	Hungary	Iceland	Ireland	Israel	Italy
Beef, fresh	4,729,872	-	-	-	-	-
Beef, processed	-	-	-	-	-	-
Horse, fresh	-	-	-	-	-	-
Pork, fresh	-	-	-	4,057,328	-	-
Pork, processed	-	503,776	-	-	-	8,901,676
Veal, fresh	-	-	-	-	-	-
Veal, processed	-	-	-	-	-	-
Lamb/Mutton, fresh	-	-	142,624	-	-	-
Lamb/Mutton, processed	-	-	-	-	-	-
Goat, fresh	-	-	-	-	-	-
Turkey, fresh	-	-	-	-	-	-
Ratite, fresh	-	-	-	-	-	-
Chicken, fresh	-	-	-	-	-	-
Chicken, processed	-	-	-	-	864,167	-
Turkey, processed	-	-	-	-	1,093,048	-
Other Fowl, fresh	-	-	-	-	-	-
Other Fowl, processed	-	-	-	-	-	-
Varied combination, fresh	-	-	-	-	-	-
Varied combination, processed	-	-	-	-	-	-
Guineas/squabs, fresh	-	-	-	-	-	-
Total lbs/country	4,729,872	503,776	142,624	4,057,328	1,957,215	8,901,676

Table 8 (*continued*)
Estimated Annual Amount (lbs) of Product Imported per Country
2010 U. S. NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Japan	Mexico	Netherlands	New Zealand	Nicaragua	North Ireland
Beef, fresh	259,506	32,029,820	-	364,337,774	76,990,465	-
Beef, processed	-	3,322,901	-	4,252,374	-	-
Horse, fresh	-	-	-	-	-	-
Pork, fresh	-	4,172,359	4,371,640	51,662	-	2,296,280
Pork, processed	-	10,860,408	3,174,067	-	-	-
Veal, fresh	-	-	-	23,256,923	-	-
Veal, processed	-	-	-	-	-	-
Lamb/Mutton, fresh	-	3,299	-	57,155,488	-	-
Lamb/Mutton, processed	-	-	-	138,990	-	-
Goat, fresh	-	24,753	-	374,830	-	-
Turkey, fresh	-	-	-	-	-	-
Ratite, fresh	-	-	-	45,257	-	-
Chicken, fresh	-	-	-	-	-	-
Chicken, processed	-	14,966,133	-	-	-	-
Turkey, processed	-	9,130,602	-	-	-	-
Other Fowl, fresh	-	-	-	-	-	-
Other Fowl, processed	-	-	-	-	-	-
Varied combination, fresh	-	-	-	-	-	-
Varied combination, processed	-	5,154,516	-	-	-	-
Guineas/squabs, fresh	-	-	-	-	-	-
Total lbs/country	259,506	79,664,791	7,545,707	449,613,298	76,990,465	2,296,280

Table 8 (*continued*)
Estimated Annual Amount (lbs) of Product Imported per Country
2010 U. S. NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Poland	San Marino	Spain	Sweden	UK	Uruguay
Beef, fresh	-	-	-	-	-	49,309,861
Beef, processed	-	-	-	-	-	2,898,353
Horse, fresh	-	-	-	-	-	-
Pork, fresh	647,076	-	140,071	1,332,453	918,720	-
Pork, processed	19,465,302	631	1,555,108	-	-	-
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, fresh	-	-	-	-	-	-
Total lbs/country	20,112,378	631	1,695,179	1,332,453	918,720	52,208,214

Table 9
Relative Annual Amount (%) of Product Imported per Country
2010 U. S. NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Argentina	Australia	Brazil	Canada	Chile	Costa Rica
Beef, fresh	-	28.74	-	39.30	0.10	0.84
Beef, processed	15.91	1.27	54.47	23.31	-	-
Horse, fresh	-	-	-	100.00	-	-
Pork, fresh	-	0.01	-	84.33	0.82	-
Pork, processed	-	-	0.02	69.49	-	-
Veal, fresh	-	16.57	-	42.54	-	-
Veal, processed	-	-	-	100.00	-	-
Lamb/Mutton, fresh	-	66.02	-	0.22	-	-
Lamb/Mutton, processed	-	49.79	-	21.20	-	-
Goat, fresh	-	98.27	-	-	-	-
Goat, processed	-	-	-	-	-	-
Turkey, fresh	-	-	-	95.14	4.86	-
Ratite, fresh	-	76.25	-	-	-	-
Chicken, fresh	-	-	-	98.54	1.46	-
Chicken, processed	-	-	-	82.42	-	-
Turkey, processed	-	-	-	18.71	-	-
Other Fowl, fresh	-	-	-	94.59	-	-
Other Fowl, processed	-	-	-	76.82	-	-
Varied combination, fresh	-	-	-	100.00	-	-
Varied combination, processed	-	0.04	-	72.32	-	-
Guineas/squabs, fresh	-	-	-	-	-	-

Table 9 *(continued)*
Relative Annual Amount (%) of Product Imported per Country
2010 U. S. NRP, Import Reinspection Sampling Plan

Production Class	Croatia	Denmark	Finland	France	Germany	Honduras
Beef, fresh	-	-	-	-	-	0.28
Beef, processed	-	-	-	-	-	-
Horse, fresh	-	-	-	-	-	-
Pork, fresh	-	11.92	0.37	-	-	-
Pork, processed	0.21	2.44	-	-	0.44	-
Veal, fresh	-	-	-	-	-	-
Veal, processed	-	-	-	-	-	-
Lamb/Mutton, fresh	-	-	-	-	-	-
Lamb/Mutton, processed	-	-	-	-	-	-
Goat, fresh	-	-	-	-	-	-
Goat, processed	-	-	-	-	-	-
Turkey, fresh	-	-	-	-	-	-
Ratite, fresh	-	-	-	-	-	-
Chicken, fresh	-	-	-	-	-	-
Chicken, processed	-	-	-	-	-	-
Turkey, processed	-	-	-	-	-	-
Other Fowl, fresh	-	-	-	5.41	-	-
Other Fowl, processed	-	-	-	23.18	-	-
Varied combination, fresh	-	-	-	-	-	-
Varied combination, processed	-	-	-	0.02	-	-
Guineas/squabs, fresh	-	-	-	-	-	-

Table 9 *(continued)*
Relative Annual Amount (%) of Product Imported per Country
2010 U. S. NRP, Import Reinspection Sampling Plan

Production Class	Hungary	Iceland	Ireland	Israel	Italy	Japan	Mexico
Beef, fresh	-	-	-	-	-	0.02	1.88
Beef, processed	-	-	-	-	-	-	1.60
Horse, fresh	-	-	-	-	-	-	-
Pork, fresh	-	-	0.58	-	-	-	0.59
Pork, processed	0.31	-	-	-	5.49	-	6.69
Veal, fresh	-	-	-	-	-	-	-
Veal, processed	-	-	-	-	-	-	-
Lamb/Mutton, fresh	-	0.08	-	-	-	-	0.00
Lamb/Mutton, processed	-	-	-	-	-	-	-
Goat, fresh	-	-	-	-	-	-	0.11
Goat, processed	-	-	-	-	-	-	-
Turkey, fresh	-	-	-	-	-	-	-
Ratite, fresh	-	-	-	-	-	-	-
Chicken, fresh	-	-	-	-	-	-	-
Chicken, processed	-	-	-	0.96	-	-	16.62
Turkey, processed	-	-	-	8.69	-	-	72.60
Other Fowl, fresh	-	-	-	-	-	-	-
Other Fowl, processed	-	-	-	-	-	-	-
Varied combination, fresh	-	-	-	-	-	-	-
Varied combination, processed	-	-	-	-	-	-	27.62
Guineas/squabs, fresh	-	-	-	-	-	-	-

Table 9 *(continued)*
Relative Annual Amount (%) of Product Imported per Country
2010 U. S. NRP, Import Reinspection Sampling Plan

Production Class	Netherlands	New Zealand	Nicaragua	North Ireland	Poland
Beef, fresh	-	21.42	4.53	-	-
Beef, processed	-	2.04	-	-	-
Horse, fresh	-	-	-	-	-
Pork, fresh	0.62	0.01	-	0.33	0.09
Pork, processed	1.96	-	-	-	12.00
Veal, fresh	-	40.89	-	-	-
Veal, processed	-	-	-	-	-
Lamb/Mutton, fresh	-	33.68	-	-	-
Lamb/Mutton, processed	-	29.01	-	-	-
Goat, fresh	-	1.63	-	-	-
Goat, processed	-	-	-	-	-
Turkey, fresh	-	-	-	-	-
Ratite, fresh	-	23.75	-	-	-
Chicken, fresh	-	-	-	-	-
Chicken, processed	-	-	-	-	-
Turkey, processed	-	-	-	-	-
Other Fowl, fresh	-	-	-	-	-
Other Fowl, processed	-	-	-	-	-
Varied combination, fresh	-	-	-	-	-
Varied combination, processed	-	-	-	-	-
Guineas/squabs, fresh	-	-	-	-	-

Table 9 *(continued)*
Relative Annual Amount (%) of Product Imported per Country
2010 U. S. NRP, Import Reinspection Sampling Plan

Production Class	San Marino	Spain	Sweden	UK	Uruguay
Beef, fresh	-	-	-	-	2.90
Beef, processed	-	-	-	-	1.39
Horse, fresh	-	-	-	-	-
Pork, fresh	-	0.02	0.19	0.13	-
Pork, processed	0.00	0.96	-	-	-
Veal, fresh	-	-	-	-	-
Veal, processed	-	-	-	-	-
Lamb/Mutton, fresh	-	-	-	-	-
Lamb/Mutton, processed	-	-	-	-	-
Goat, fresh	-	-	-	-	-
Goat, processed	-	-	-	-	-
Turkey, fresh	-	-	-	-	-
Ratite, fresh	-	-	-	-	-
Chicken, fresh	-	-	-	-	-
Chicken, processed	-	-	-	-	-
Turkey, processed	-	-	-	-	-
Other Fowl, fresh	-	-	-	-	-
Other Fowl, processed	-	-	-	-	-
Varied combination, fresh	-	-	-	-	-
Varied combination, processed	-	-	-	-	-
Guineas/squabs, fresh	-	-	-	-	-

Table 10
Number of Drug Samples per Product Class
2010 U. S. NRP, Import Reinspection Sampling Plan

Number Countries	Product Class	Drug	Product	Drug Score	RSP*	Number samples	Unadjusted	Final Adjustment
10	Beef, fresh	Antibiotics	52.001%	16	832	300	300	301
2	Chicken, fresh	Antibiotics	3.241%	16	52	90	90	90
1	Horse, fresh	Antibiotics	0.042%	16	1	8	8	8
2	Other fowl, fresh	Antibiotics	0.116%	16	2	16	16	16
14	Pork, fresh	Antibiotics	21.487%	16	344	230	230	234
2	Turkey, fresh	Antibiotics	0.424%	16	7	16	16	16
1	Varied combination, fresh	Antibiotics	0.00%	16	0	8	8	8
3	Veal, fresh	Antibiotics	1.739%	16	28	90	90	90
2	Chicken, fresh	Arsenic	3.241%	4.5	15	90	90	90
3	Chicken, processed	Arsenic	2.753%	4.5	12	8	8	8
14	Pork, fresh	Arsenic	21.847%	4.5	97	90	90	112
2	Turkey, fresh	Arsenic	0.424%	4.5	2	16	16	16
3	Turkey, processed	Arsenic	0.385%	4.5	2	24	24	16
10	Beef, fresh	Avermectins	52.001%	14	728	300	300	301
7	Beef, processed	Avermectins	6.361%	14	89	90	90	42
3	Goat, fresh	Avermectins	0.705%	14	10	24	24	24
5	Lamb/Mutton, fresh	Avermectins	5.188%	14	73	90	80	82
3	Veal, fresh	Avermectins	1.739%	14	24	90	90	90
14	Pork, fresh	β-agonist	21.487%	2.8	60	90	96	0
3	Veal, fresh	β-agonist	1.739%	2.8	5	90	90	90
10	Beef, fresh	Chloramphenicol	52.001%	0	0	96	95	93
2	Chicken, fresh	Chloramphenicol	3.21%	0	0	90	90	90
2	Turkey, fresh	Chloramphenicol	0.424%	0	0	16	16	16
3	Veal, fresh	Chloramphenicol	1.739%	0	0	90	90	90
10	Beef, fresh	Florfenicol	52.001%	12	0	90	90	93
10	Beef, fresh	Flunixin	52.001%	7	364	90	90	93
2	Chicken, fresh	Nitroimidazole	3.241%	0	0	90	90	90
10	Beef, fresh	Sulfonamides	52.001%	12	624	300	300	301
7	Beef, processed	Sulfonamides	6.361%	12	76	90	42	42
1	Horse, fresh	Sulfonamides	0.042%	12	0	8	8	8
14	Pork, fresh	Sulfonamides	21.487%	12	258	230	230	234
12	Pork, processed	Sulfonamides	4.960%	12	60	90	90	40
2	Turkey, fresh	Sulfonamides	0.424%	12	5	16	16	16
3	Turkey, processed	Sulfonamides	0.385%	12	5	16	16	16
1	Varied combination, fresh	Sulfonamides	0.000%	12	0	8	8	8
4	Varied combination, processed	Sulfonamides	0.571%	12	7	24	24	24
3	Veal, fresh	Sulfonamides	1.739%	12	19	90	90	90
3	Veal, fresh	Thyreostats	1.739%	3.5	6	90	90	90
3	Veal, fresh	Zeranol	1.739%	12	21	90	90	90
Total								**3168**

Processed products are not subjected to antibiotics, chloramphenicol, and zeranol analysis, they will only be analyzed for avermectins, arsenics, and sulfonamides.
*RSP = Relative Sample Priority

Table 11
Number of Samples per Product Class for Pork, Processed
2010 U. S. NRP, Import Reinspection Sampling Plan

Pork Processed Sulfonamides	% Product Class Imported per Country (Pc/c)	Unadjusted Number of Samples per Country=90*(Pc/c)/100	Adjust #1	Initial Adjustment	Final Adjustment
Brazil	0.02	0	1	8	0
Canada	69.490	63	63	63	0
Croatia	0.21	0	1	8	8
Denmark	2.44	2	2	8	0
Germany	0.44	0	1	8	8
Hungary	0.310	0	1	8	8
Italy	5.490	5	5	8	8
Mexico	6.690	6	6	8	0
Netherlands	1.960	2	2	8	0
Poland	12.00	11	11	11	0
San Marino	0	0	1	8	8
Spain	0.960	1	1	8	0
Total	**100.01**	**90**	**95**	**154**	**40**

Table 12
Number of Samples per Product Class for Goat, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Goat Fresh/Avermectins	% Product Class Imported per Country (Pc/c)	Unadjusted Number	Final Adjustment
Australia	98.27	8.00	8
Mexico	0.11	8.00	8
New Zealand	1.63	8.00	8
Total	**100.01**	**24**	**24**

Table 13
Number of Samples per Product Class for Turkey, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Turkey Fresh/Antibiotics	% Product Class Imported per Country (Pc/c)	Unadjusted Number	Final Adjustment
Canada	95.14	8	8
Chlie	4.86	8	8
Total	**100**	**16**	**16**
Turkey Fresh/Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number**	**Final Adjustment**
Canada	95.14	8	8
Chlie	4.86	8	8
Total	**100**	**16**	**16**
Turkey Fresh/Chloramphenicol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number**	**Final Adjustment**
Canada	95.14	8	8
Chlie	4.86	8	8
Total	**100**	**16**	**16**
Turkey Fresh/Arsenicals	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number**	**Final Adjustment**
Canada	95.14	8	8
Chlie	4.86	8	8
Total	**100**	**16**	**16**

Table 14
Number of Samples per Product Class for Turkey, Processed
2010 U. S. NRP, Import Reinspection Sampling Plan

Turkey Processed/Arsenicals	% Product Class Imported per Country (Pc/c)	Unadjusted Number	Final Adjustment
Canada	18.71	8	0*
Israel	8.69	8	8
Mexico	72.62	8	8
Total	**100**	**24**	**16**
Turkey Processed/Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number**	**Final Adjustment**
Canada	18.71	8	0*
Israel	8.69	8	8
Mexico	72.62	8	8
Total	**100**	**24**	**16**

Table 15
Number of Samples per Product Class for Chicken, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Chicken Fresh Antibiotics	% Product Class Imported per Country (Pc/c)	Unadjusted Number of Samples per Country=90*(Pc/c)/100	Adjust #1	Initial Adjustment	Final Adjustment
Canada	98.54	88.686	89	89	82
Chile	1.46	1.314	1	8	8
Total	**100**	**90**	**90**	**97**	**90**
Chicken Fresh Arsenicals	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Final Adjustment**
Canada	98.54	88.686	89	89	82
Chile	1.46	1.314	1	8	8
Total	**100**	**90**	**90**	**97**	**90**
Chicken Fresh Chloramphenicol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Final Adjustment**
Canada	98.54	88.686	89	89	82
Chile	1.46	1.314	1	8	8
Total	**100**	**90**	**90**	**97**	**90**
Chicken Fresh Nitroimidazole	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Final Adjustment**
Canada	98.54	88.686	89	89	82
Chile	1.46	1.314	1	8	8
Total	**100**	**90**	**90**	**97**	**90**

Table 16
Number of Samples per Product Class for Varied Combination, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Varied combination Antibiotics	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number**	**Final Adjustment**
Canada	100	8	8
Varied combination Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number**	**Final Adjustment**
Canada	100	8	8

Table 17
Number of Samples per Product Class for Varied Combination, Processed
2010 U. S. NRP, Import Reinspection Sampling Plan

Varied combination, Processed Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number**	**Adjust # 1**	**Final Adjustment**
Australia	0.04	8	8	8
Canada	72.32	8	0	0
France	0.02	8	8	8
Mexico	27.62	8	8	8
Total	**100.00**	**32**	**24**	**24**

Table 18
Number of Samples per Product Class for Beef, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Beef Fresh Antibiotics	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=300*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	28.74	86.22	86	86	77	77
Canada	39.30	117.90	118	118	106	106
Chile	0.10	0.30	1	8	0	0
Costa Rica	0.84	2.52	2	8	2	2
Honduras	0.28	0.84	1	8	0	0
Japan	0.02	0.06	1	8	0	0
Mexico	1.88	5.64	5	8	5	5
New Zealand	21.42	64.26	64	64	58	58
Nicaragua	4.53	13.89	14	14	12	12
Uruguay	2.90	8.70	9	9	9	9
Total	**100.01**	**300.03**	**301**	**331**	**301**	**301**
Beef Fresh Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=300*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	28.74	86.22	86	86	77	77
Canada	39.30	117.90	118	118	106	106
Chile	0.10	0.30	1	8	0	0
Costa Rica	0.84	2.52	2	8	2	2
Honduras	0.28	0.84	1	8	0	0
Japan	0.02	0.06	1	8	0	0
Mexico	1.88	5.64	5	8	5	5
New Zealand	21.42	64.26	64	64	58	58
Nicaragua	4.53	13.89	14	14	12	12
Uruguay	2.90	8.70	9	9	9	9
Total	**100.01**	**300.03**	**301**	**331**	**301**	**301**

Table 18 (*Continued*)
Number of Samples per Product Class for Beef, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Beef Fresh Avermectins	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=300*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	28.74	86.22	86	86	77	77
Canada	39.30	117.90	118	118	106	106
Chile	0.10	0.30	1	8	0	0
Costa Rica	0.84	2.52	2	8	2	2
Honduras	0.28	0.84	1	8	0	0
Japan	0.02	0.06	1	8	0	0
Mexico	1.88	5.64	5	8	5	5
New Zealand	21.42	64.26	64	64	58	58
Nicaragua	4.53	13.89	14	14	12	12
Uruguay	2.90	8.70	9	9	9	9
Total	**100.01**	**300.03**	**301**	**331**	**301**	**301**
Beef Fresh Chloramphenicol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	28.74	25.87	26	26	12	12
Canada	39.30	35.37	35	35	16	16
Chile	0.10	0.09	1	8	8	8
Costa Rica	0.84	0.76	1	8	8	8
Honduras	0.28	0.25	1	8	8	8
Japan	0.02	0.02	1	8	8	8
Mexico	1.88	1.69	2	8	8	8
New Zealand	21.42	19.28	19	19	9	9
Nicaragua	4.53	4.08	4	8	8	8
Uruguay	2.90	2.61	3	8	8	8
Total	**100.01**	**90.01**	**93**	**136**	**93**	**93**
Beef Fresh Florofenicol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	28.74	25.87	26	26	12	12
Canada	39.30	35.37	35	35	16	16
Chile	0.10	0.09	1	8	8	8
Costa Rica	0.84	0.76	1	8	8	8
Honduras	0.28	0.25	1	8	8	8
Japan	0.02	0.02	1	8	8	8
Mexico	1.88	1.69	2	8	8	8
New Zealand	21.42	19.28	19	19	9	9
Nicaragua	4.53	4.08	4	8	8	8
Uruguay	2.90	2.61	3	8	8	8
Total	**100.01**	**90.01**	**93**	**136**	**93**	**93**
Beef Fresh/Flunixin	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	28.74	25.87	26	26	12	12
Canada	39.30	35.37	35	35	16	16
Chile	0.10	0.09	1	8	8	8
Costa Rica	0.84	0.76	1	8	8	8
Honduras	0.28	0.25	1	8	8	8
Japan	0.02	0.02	1	8	8	8
Mexico	1.88	1.69	2	8	8	8
New Zealand	21.42	19.28	19	19	9	9
Nicaragua	4.53	4.08	4	8	8	8
Uruguay	2.90	2.61	3	8	8	8
Total	**100.01**	**90.01**	**93**	**136**	**93**	**93**

Table 19
Number of Samples per Product Class for Beef, Processed
2010 U. S. NRP, Import Reinspection Sampling Plan

Beef Processed Sulfonamides	% Product Class Imported per Country (Pc/c)	Unadjusted Number of Samples per Country=90*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Argentina	15.91	14.32	14	14	9	9
Australia	1.27	1.14	1	8	0	0*
Brazil	54.47	49.02	49	49	33	33
Canada	23.31	20.98	21	21	0	0*
Mexico	1.60	1.44	1	8	0	0*
New Zealand	2.04	1.84	2	8	0	0*
Uruguay	1.39	1.25	1	8	0	0*
Total	**99.99**	**89.99**	**89**	**116**	**42**	**42**
Beef Processed Avermectins	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=75*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Argentina	15.91	14.32	14	14	9	9
Australia	1.27	1.14	1	8	0	0*
Brazil	54.47	49.02	49	49	33	33
Canada	23.31	20.98	21	21	0	0*
Mexico	1.60	1.44	1	8	0	0*
New Zealand	2.04	1.84	2	8	0	0*
Uruguay	1.39	1.25	1	8	0	0*
Total	**99.99**	**89.99**	**89**	**116**	**42**	**42**

* Country is exporting fresh beef

Table 20
Number of Samples per Product Class for Pork, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Pork Fresh Antibiotics	% Product Class Imported per Country (Pc/c)	Unadjusted Number of Samples per Country=230*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Australia	0.01	0.02	1	8	8	8
Canada	84.33	193.96	194	194	121	121
Chile	0.82	1.89	2	8	8	8
Denmark	11.92	27.42	27	27	17	17
Finland	0.37	0.85	1	8	8	8
Ireland	0.58	1.33	1	8	8	8
Mexico	0.59	1.36	1	8	8	8
Netherlands	0.62	1.43	1	8	8	8
New Zealand	0.01	0.02	1	8	8	8
N.Ireland	0.33	0.76	1	8	8	8
Poland	0.09	0.21	1	8	8	8
Spain	0.02	0.05	1	8	8	8
Sweden	0.19	0.44	1	8	8	8
United Kingdom	0.13	0.30	1	8	8	8
Total	**100.01**	**230.02**	**234**	**317**	**234**	**234**
Pork Fresh Arsenicals	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	0.01	0.01	1	8	8	8
Canada	84.33	75.90	76	89	3	8
Chile	0.82	0.74	1	8	8	8
Denmark	11.92	10.73	11	11	1	8
Finland	0.37	0.33	1	8	8	8
Ireland	0.58	0.52	1	8	8	8
Mexico	0.59	0.53	1	8	8	8
Netherlands	0.62	0.56	1	8	8	8

Table 20 (*continued)*
Number of Samples per Product Class for Pork, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Pork Fresh Arsenicals	% Product Class Imported per Country (Pc/c)	Unadjusted Number of Samples per Country=90*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
New Zealand	0.01	0.01	1	8	8	8
N.Ireland	0.33	0.30	1	8	8	8
Poland	0.09	0.08	1	8	8	8
Spain	0.02	0.02	1	8	8	8
Sweden	0.19	0.17	1	8	8	8
United Kingdom	0.13	0.12	1	8	8	8
Total	**100.01**	**90**	**99**	**183**	**100**	**112**
Pork Fresh Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=230*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	0.01	0.02	1	8	8	8
Canada	84.33	193.96	194	194	121	121
Chile	0.82	1.89	2	8	8	8
Denmark	11.92	27.42	27	27	17	17
Finland	0.37	0.85	1	8	8	8
Ireland	0.58	1.33	1	8	8	8
Mexico	0.59	1.36	1	8	8	8
Netherlands	0.62	1.43	1	8	8	8
New Zealand	0.01	0.02	1	8	8	8
N.Ireland	0.33	0.76	1	8	8	8
Poland	0.09	0.21	1	8	8	8
Spain	0.02	0.05	1	8	8	8
Sweden	0.19	0.44	1	8	8	8
United Kingdom	0.13	0.30	1	8	8	8
Total	**100.01**	**230.02**	**234**	**317**	**234**	**234**

Table 21
Number of Samples per Product Class for Veal, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Veal Fresh Antibiotics	% Product Class Imported per Country (Pc/c)	Unadjusted Number of Samples per Country=90*(Pc/c)/100	Final Adjustment
Australia	16.57	14.91	15
Canada	42.54	38.29	38
New Zealand	40.89	36.80	37
Total	**100**	**90**	**90**
Veal Fresh Avermectins	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	16.57	14.91	15
Canada	42.54	38.29	38
New Zealand	40.89	36.80	37
Total	**100**	**90**	**90**

Table 21 (*Continued*)
Number of Samples per Product Class for Veal, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Veal Fresh/β-agonist	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	16.57	14.91	15
Canada	42.54	38.29	38
New Zealand	40.89	36.80	37
Total	**100**	**90**	**90**
Veal Fresh/Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	16.57	14.91	15
Canada	42.54	38.29	38
New Zealand	40.89	36.80	37
Total	**100**	**90**	**90**
Veal Fresh/Thyreostats	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	16.57	14.91	15
Canada	42.54	38.29	38
New Zealand	40.89	36.80	37
Total	**100**	**90**	**90**
Veal Fresh/Zeranol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	16.57	14.91	15
Canada	42.54	38.29	38
New Zealand	40.89	36.80	37
Total	**100**	**90**	**90**
Veal Fresh/Chloramphenicol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	16.57	14.91	15
Canada	42.54	38.29	38
New Zealand	40.89	36.80	37
Total	**100**	**90**	**90**

Table 22
Number of Samples per Product Class for Mutton/Lamb, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Mutton/Lamb Fresh Avermectins	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	66.02	59.42	59	59	45	45
Canada	0.22	0.198	1	8	8	8
Iceland	0.08	0.072	1	8	8	8
Mexico	0	0	1	8	8	8
New Zealand	33.68	30.31	30	30	23	23
Total	**100**	**90**	**92**	**113**	**92**	**92**

Table 23
Number of Samples per Product Class for Chicken, Processed
2010 U. S. NRP, Import Reinspection Sampling Plan

Chicken Processed Arsenicals	% Product Class Imported per Country (Pc/c)	Unadjusted Number of Samples per Country=90*(Pc/c)/100	Adjust #1	Final Adjustment
Canada	82.42	74.18	0	0*
Israel	0.96	0.86	8	8
Mexico	16.62	14.96	0	0*
Total	**100**	**90**	**8**	**8**

***Country exports fresh chicken**

Table 24
Number of Samples per Product Class for Other Fowl, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Othe Fowl Fresh Antibiotics	% Product Class Imported per Country (Pc/c)	Unadjusted Number of Samples per Country=90*(Pc/c)/100	Final Adjustment
Canada	94.59	8	8
France	5.41	8	8
Total	**100**	**16**	**16**

Table 25
Number of Samples per Product Class for Horse, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Horse Fresh/Antibiotics	% Product Class Imported per Country (Pc/c)	Final Adjustment
Canada	100.00	8
Total	**100**	**8**
Horse Fresh/Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Final Adjustment**
Canada	100.00	8
Total	**100**	**8**

Design of the Domestic Scheduled Sampling Plan for Pesticides

I. Selecting and Ranking Candidate Pesticides

EPA SAT members selected the candidate pesticides of concern for the 2010 U. S. NRP, which are presented in Table 26. FSIS prioritizes *analyses*, grouping together compounds that can be detected by the same analytical methods.

Compound Scoring

Using a 4-point scale (4 = high; 3 = moderate; 2 = low; 1 = none), SAT members scored each of the pesticides in 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

Category definitions and scoring criteria appear in the section "*Scoring Key for Pesticides*" and scoring results are presented in Table 26. 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 × Toxicity
= Consumption × Residue Levels × Toxicity
= Consumption × "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. Unlike 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.

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. 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, the

1 See the section, "Design of the Domestic Scheduled Sampling Plan for Veterinary Drugs."

category combines residue level and toxicity information. The “Withdrawal Time” category for veterinary drugs and the “Pre-slaughter Interval” category are 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, because 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. The numerical value assigned to toxicity is independent of other parameters and it can be used directly as a term in *Equation 1*.

EPA assigns a value to the regulatory concern, pre-slaughter interval, and bioconcentration factors for 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 × *modifier for* "Lack of FSIS Testing Information on Violations"
= Estimated relative exposure × Relative toxicity × *modifier for* "Lack of FSIS Testing Information on Violations"
= Weighted average of {"Regulatory Concern," "Pre-slaughter Interval," "Bioconcentration factor"} × "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 rates presented in Table 26 are based on 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 26. FSIS selected this formula, based on the relative importance of each modifier, and the degree each modifier should be allowed to alter the underlying risk-based score for Relative Public Health Concern. The formula 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 = $((2\times R+P+B)/4)) \times T$

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

The variable for regulatory concern (R) in *Equation 13* is weighted twice 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 uses variables that are derived from terms (scoring categories) that are not the same as the terms used in *Equation 4*. Therefore, scores for pesticides and veterinary drugs cannot be reliably compared. However, *Equation 13* for pesticides and *Equation 4* for veterinary drugs have been normalized to provide a rough comparison between these two different categories of compounds.

Pesticides are ranked by the Relative Public Health Concerns Scores listed in Summary Table III. The scores 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, after estimation of relative exposure values for each compound/production class (C/PC) pair.

II. Prioritizing Candidate Pesticides

After ranking the pesticides according to their relative public health concern, SAT used the ranking scores to select compounds for the 2010 U. S. NRP. Pesticide compounds and compound classes that received a ranking of 23 or greater represent a potential public health concern that is sufficient to justify their inclusion in the 2010 U. S. NRP.

After identifying the high-priority compounds and compound classes, FSIS considered the availability of its laboratory resources, especially appropriate analytical methods. Based on this constraint, only the chlorinated hydrocarbon/chlorinated organophosphate (CHC/COP) compound class can be included in the U. S. NRP. FSIS will analyze 31 compounds in this compound class for quantity and chemical identity. The presence of an additional 13 compounds will be tested, but without quantitation. The compounds are:

(a) **Chlorinated Hydrocarbons and Chlorinated Organophosphates (CHC/COP):** Aldrin, BHC alpha, BHC beta*, BHC delta*, carbophenothion*, chlordane-cis (-alpha), chlordane-trans, chlordane*, chlorfenvinphos, Chlorpyrifos, Chlorpyrifos methyl*, Coumaphos S, Dichlorfenthion*, Fenchlorphos (Ronnel), Heptachlor, Hexachlorobenzene (HCB), Lindane, Mirex, trans-nonachlor, o,p'-DDE (2,4)*, o,p'-DDT*, p,p'-DDE (4,4), p,p'-DDT, p,p'-TDE (DDD), Phosalone*, tetrachlorvinphos (stirofos), and Toxaphene
(b) **Organochlorides (OC):** Captan*, Dieldrin, Endosulfan I*, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Ketone, Heptachlor epoxide A, Heptachlor epoxide B, Linuron*, Methoxychlor and Oxychlordane
(c) **Organophosphates (OP):** Diazinon
(d) **Environmental Contaminants:** 2,2',4,4',5,5'-hexabromobiphenyl (HBB), halowaxes*, and polychlorinated biphenyls (aroclors 1254, 1260) (PCBs) (*identification only; not quantitated)

Summary Table III provides the sampling status of each compound or compound class in the 2010 scheduled sampling plan. A brief explanation justifies the exclusion of each highly ranked compound or compound class not scheduled for inclusion in the 2010 U. S. NRP. Summary Table III may be used to identify future method development needs for pesticides for the U. S. NRP. A number of highly ranked

pesticides could not be included in the 2010 U. S. 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. The animals may be exposed to other environmental contaminants within this class (such as the PCBs).

Since the 2006 U. S. NRP, FSIS has suspended scheduled sampling for CHCs and COPs for the following production classes: minor species (ducks, geese, ratites, rabbits, squab, and bison); young turkeys; bulls; mature turkeys; 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 for the occurrence of accidental contamination incidents.

IV. Allocation of Sampling Resources

E*quation 14* establishes a relative sampling priority for each C/PC pair by multiplying the ranking score for the CHC/COPs by the estimated relative percent of domestic consumption for each production class. This calculation is identical to *Equation 6*, which was used to calculate the relative sampling priorities for the veterinary drugs:

Equation 14

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

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, it provides a numerical representation of the relative public health concern associated with each C/PC pair and can be used to prioritize FSIS analytical sampling resources. This risk ranking is based upon average consumption across the entire U.S. population, rather than upon maximally exposed individuals.

C/PC pairs within a single compound class are ranked using the estimated relative percent of domestic consumption for each production class. 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 27.

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 refines 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 01/01/1999 -12/31/2008 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 sampling level by one, e.g. from 230 to 300 samples).
2. At least 300 samples tested over the 10-year period, violation rate and violations were found during the 2008 calendar year, or the violation rate is greater than or equal to 0.25% ($\geq$ 0.25%) during 01/01/1999 to 12/31/2008: 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 2010 U. S. NRP, FSIS has continued to suspend scheduled sampling for CHCs and COPs for the following production classes: minor species (ducks, geese, ratites, rabbits, squab, and bison); young turkeys; bulls; mature turkeys; and bob veal.

The sampling numbers obtained following these adjustments are listed in Table 27.

Adjusting for Laboratory Capacity

The 2010 U. S. NRP sampling levels for mature chickens, roaster pigs and sows were adjusted to 195 samples each for laboratory capacity.

Adjustment for the Number of Slaughter Facilities

No adjustment was necessary for number of slaughter facilities for 2010 U. S. NRP.

V. Scoring Key

U.S. NRP Historical Testing Information on Violations (01/01/1999 to 12/31/2008)

Violation rate scores were calculated by two different methods 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, which is calculated by dividing the number of violations over the period from 1999 to 2008 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
To calculate each production class, multiply the average violation rate (defined above) by the relative consumption value for that class, which is weighted by the annual U.S. production for that class and 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 for each pesticide or pesticide class is determined by assigning the greater score from Method A and Method B.

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 are 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, 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 the level of concern established by the EPA. For compounds

other than carcinogens, this was determined by comparing either the compound's Acute or Chronic Population Adjusted Dose (PAD) (whichever was lower) to the estimated level of exposure. The Acute and Chronic PADs 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 RFDs are calculated by dividing the No Observed Adverse Effect Level[2] (NOAEL) or the Lowest Observed Adverse Effect Level[3] (LOAEL) by Uncertainty Factors, which accounts 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 Uncertainty Factor 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. In the following, PAD is the lower of the Acute and Chronic PADs.

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 the EPA to pesticides for the category "Pre-Slaughter Interval" and listed in Table 26. For pesticides that have been approved for direct dermal application, the pre-slaughter interval is the required time 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.

[2] The highest dose that gave no observable adverse effect
[3] The lowest dose at which an adverse effect was seen

- 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" and presented in Table 26. 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

The EPA assigned a numerical value to pesticides for the category "Endocrine Disruption," presented in Table 26. 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

The EPA assigned a numerical value of 1, 2, 3 or 4 to pesticides for the category "Toxicity," presented in Table 26. 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 RfDs. 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 26
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
Chlorinated hydrocarbons and chlorinated organophosphates (CHCs and COPs) – compounds in the FSIS CHC/COP MRM[x]	3	4	4	4	Not Available	4	16.0
Chlorinated organophosphates and organophosphates (COPs and OPs) not in the FSIS CHC/COP MRM[xi]	Not Tested	4	4	4	Not Available	4	16.0
Beta-Cyfluthrin	Not Tested	4	4	4	Not Available	4	16.0
Cyfluthrin	Not Tested	4	4	4	Not Available	4	16.0
Imazalil	Not Tested	4	4	4	Not Available	4	16.0
Triazines – compounds not in the FSIS triazine MRM[xiv]	Not Tested	4	4	3	4	4	15.0
Carbamates in FSIS Carbamate – compounds in the FSIS MRM[viii]	Not Tested	4	4	2	3	4	14.0
Synthetic Pyrethroids – compounds in the FSIS Synthetic Pyrethrin MRM[xii]	Not Tested	3	4	4	3	4	14.0
1-(2,4-dichlorophenyl)-2-(1H-imidazole-1-yl)-1-ethanol	Not Tested	3	4	4	Not Available	4	14.0
1,1-(2,2-dichloroethylidene) bis(4-methoxybenzene)	Not Tested	3	4	4	Not Available	4	14.0
1-methoxy-4-(1,2,2,2-tetrachloroethyl)benzene)	Not Tested	3	4	4	Not Available	4	14.0
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
Cyhalothrin, lambda-	Not Tested	4	4	2	Not Available	4	14.0
Fipronil	Not Tested	3	4	4	Not Available	4	14.0
MB 45950	Not Tested	3	4	4	Not Available	4	14.0
MB 46513	Not Tested	3	4	4	Not Available	4	14.0
Methoxychlorolefin	Not Tested	3	4	4	4	4	14.0

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
Triazines – compounds in the FSIS triazine MRM[xiii]	Not Tested	4	2	3	4	4	13.0
Arsanilic acid	Not Tested	4	1	4	Not Available	4	13.0
Etoxazole	Not Tested	4	1	4	Not Available	4	13.0
Indoxacarb (DPX-MP062)	Not Tested	4	1	4	Not Available	4	13.0
Metconazole	Not Tested	4	1	4	Not Available	4	13.0
Prothioconazole	Not Tested	4	1	4	Not Available	4	13.0
Tetraconazole	Not Tested	4	1	4	Not Available	4	13.0
Triflumizole	Not Tested	4	1	4	Not Available	4	13.0
Carbamates – compounds not in the FSIS carbamate MRM[ix]	Not Tested	4	1	3	Not Available	4	12.0
1-methyl cyromazine	Not Tested	3	4	2	Not Available	4	12.0
2-(1-hydroxyethyl)-6-ethylaniline	Not Tested	4	1	3	3	4	12.0
2,6-diethylaniline	Not Tested	4	1	3	3	4	12.0
Alachlor	Not Tested	4	1	3	3	4	12.0
Cacodylic acid	Not Tested	3	3	3	3	4	12.0
CP 101394	Not Tested	4	1	3	3	4	12.0
CP 108064	Not Tested	4	1	3	3	4	12.0
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	4	1	3	3	4	12.0

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
	Tested						
Cyproconazole	Not Tested	4	1	3	Not Available	4	12.0
Cyromazine	Not Tested	3	4	2	Not Available	4	12.0
Phosalone oxon	Not Tested	4	1	3	Not Available	4	12.0
PP 890	Not Tested	3	4	2	Not Available	4	12.0
Propiconazole metabolite CGA 118244	Not Tested	4	1	3	Not Available	4	12.0
Propiconazole metabolite CGA 91305	Not Tested	4	1	3	Not Available	4	12.0
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
Benzimidazole Pesticides – compounds in FSIS benzimidazole MRM [vi]	Not Tested[vii]	3	1	4	3	4	11.0
2-(4-((6-chloro-2-benzoxazolyl)oxy) phenoxy)propanoic acid	Not Tested	3	1	4	Not Available	4	11.0
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-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-(3,4-dichlorophenyl)-1-methoxyurea	Not Tested	3	2	3	Not Available	4	11.0
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
6-chloro-2,3-dihydro-benzoxazol-2-one	Not Tested	3	1	4	Not Available	4	11.0
Bifenthrin	Not Tested	3	1	4	Not Available	4	11.0

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
Bifenthrin, 4'-hydroxy	Not Tested	3	1	4	Not Available	4	11.0
Bis(trichloromethyl)disulfide	Not Tested	3	1	4	Not Available	4	11.0
Captan epoxide	Not Tested	3	1	4	Not Available	4	11.0
Cyclanilide	Not Tested	3	1	4	Not Available	4	11.0
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
Diuron	Not Tested	3	2	3	Not Available	4	11.0
Fenoxaprop ethyl	Not Tested	3	1	4	Not Available	4	11.0
N-(3,4-dichlorophenyl)-N'-methylurea	Not Tested	3	2	3	Not Available	4	11.0
Oxadiazon	Not Tested	3	1	4	Not Available	4	11.0
Oxyfluorfen	Not Tested	3	1	4	Not Available	4	11.0
Thiamethoxam	Not Tested	4	2	1	Not Available	4	11.0
THPI	Not Tested	3	1	4	Not Available	4	11.0
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
Triadimenol (for metabolites see triadimefon)	Not Tested	3	1	4	Not Available	4	11.0

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
MB 46136	Not Tested	3	4	4	Not Available	3	10.5
Octyl bicycloheptene dicarboximide (MGK-264)	Not Tested	3	4	4	Not Available	3	10.5
2-((2-ethyl-6-methylphenyl)-amino)-1-propanol	Not Tested	3	1	3	3	4	10.0
4-(2-ethyl-6-methylphenyl)-2-hydroxy-5-methyl-3-morpholinone	Not Tested	3	1	3	3	4	10.0
Dioxathion	Not Tested	3	1	3	Not Available	4	10.0
Hexythiazox	Not Tested	3	1	3	Not Available	4	10.0
Iprodione	Not Tested	3	1	3	Not Available	4	10.0
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
Metolachlor	Not Tested	3	1	3	3	4	10.0
Propachlor	Not Tested	3	1	3	3	4	10.0
Resmethrin	Not Tested	3	1	3	Not Available	4	10.0
Difenoconazole	Not Tested	4	1	4	Not Available	3	9.8
Diphenylamine	Not Tested	3	3	4	Not Available	3	9.8
Esfenvalerate	Not Tested	3	4	3	Not Available	3	9.8
Etridiazole .	Not Tested	4	1	4	Not Available	3	9.8
Fenbuconazole	Not Tested	4	1	4	Not Available	3	9.8
Fluvalinate	Not	4	1	4	Not	3	9.8

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
	Tested				Available		
Gamma-cyhalothrin	Not Tested	3	3	4	Not Available	3	9.8
Kresoxim-methyl	Not Tested	4	1	4	Not Available	3	9.8
SD 54597	Not Tested	3	4	3	Not Available	3	9.8
Triflumazole	Not Tested	4	1	4	Not Available	3	9.8
2-aminobenzimidazole	Not Tested	3	1	2	3	4	9.0
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
Allophanate	Not Tested	3	1	2	Not Available	4	9.0
Carboxin	Not Tested	3	1	2	Not Available	4	9.0
Carboxin sulfoxide	Not Tested	3	1	2	Not Available	4	9.0
Deltamethrin	Not Tested	3	2	4	Not Available	3	9.0
Ethalfluralin	Not Tested	3	1	2	Not Available	4	9.0
ETU	Not Tested	3	1	2	3	4	9.0
Flufenoxuron	Not Tested	2	1	4	Not Available	4	9.0
Isoxaflutole	Not Tested	4	1	3	Not Available	3	9.0
Mancozeb	Not Tested	3	1	2	3	4	9.0
Maneb	Not Tested	3	1	2	3	4	9.0

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
Metiram	Not Tested	3	1	2	3	4	9.0
Piperonyl butoxide	Not Tested	3	4	2	Not Available	3	9.0
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
Pyrethrin I	Not Tested	2	4	4	Not Available	3	9.0
TCP=3,5,6-trichloro-2-pyridinol	Not Tested	3	2	1	Not Available	4	9.0
Thiophanate methyl	Not Tested	3	1	2	Not Available	4	9.0
Triclopyr	Not Tested	3	2	1	Not Available	4	9.0
3-carboxy-5-ethoxy-1,2,4-thiadiazole	Not Tested	3	1	4	Not Available	3	8.3
4-chloro-2-trifluoromethylaniline	Not Tested	3	1	4	Not Available	3	8.3
Chlorobenzilate	Not Tested	3	1	4	Not Available	3	8.3
Flufenacet (thiafluamide)	Not Tested	3	1	4	Not Available	3	8.3
Methyl 3,5-dichlorobenzoate	Not Tested	3	1	4	Not Available	3	8.3
N-(4-chloro-2-trifluoromethylphenyl)-propoxyacetamide	Not Tested	3	1	4	Not Available	3	8.3
Propyzamide	Not Tested	3	1	4	Not Available	3	8.3
Pyraclostrobin	Not Tested	3	1	4	Not Available	3	8.3
Tebuconazole	Not Tested	4	1	2	Not Available	3	8.3
Tebufenozide	Not Tested	3	1	4	Not Available	3	8.3

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
3-(2-chloro-4-hydroxyphenyl)-6-(2-chlorophenyl)-1,2,4,5-tetrazine	Not Tested	3	1	1	Not Available	4	8.0
Bromoxynil	Not Tested	3	1	1	Not Available	4	8.0
Clofentezine	Not Tested	3	1	1	Not Available	4	8.0
Mepiquat chloride	Not Tested	3	1	1	Not Available	4	8.0
Norfluraxon, desmethyl-	Not Tested	3	1	1	Not Available	4	8.0
Norflurazon	Not Tested	3	1	1	Not Available	4	8.0
Oxythioquinox	Not Tested	3	1	1	Not Available	4	8.0
Paraquat dichloride	Not Tested	3	1	1	Not Available	4	8.0
Pyrazon	Not Tested	3	1	1	Not Available	4	8.0
Sulfuryl Fluoride	Not Tested	3	1	1	Not Available	4	8.0
Fenpropathrin	Not Tested	4	1	1	Not Available	3	7.5
4-hydrocythidiazuron	Not Tested	2	1	2	Not Available	4	7.0
Cyclohexylstannoic acid	Not Tested	2	1	2	Not Available	4	7.0
Cyhexatin	Not Tested	2	1	2	Not Available	4	7.0
Dicyclohexyltin oxide	Not Tested	2	1	2	Not Available	4	7.0
Diflubenzuron	Not Tested	3	4	4	Not Available	2	7.0
Dipropyl isocinchomerate	Not Tested	3	4	4	Not Available	2	7.0
Ethoxyquin	Not Tested	4	2	4	Not Available	2	7.0
N-phenylurea	Not	2	1	2	Not	4	7.0

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
	Tested				Available		
PB-9	Not Tested	2	1	2	Not Available	4	7.0
Pyridaben	Not Tested	2	1	2	Not Available	4	7.0
Thidiazuron	Not Tested	2	1	2	Not Available	4	7.0
Triphenyltin hydroxide	Not Tested	1	1	4	Not Available	4	7.0
1,1,3,3,-tetrakis(2-methyl-2-phenylpropyl)-1,3-dihydroxydistannoxane	Not Tested	2	1	4	Not Available	3	6.8
2-amino-n-isopropylbenzamide	Not Tested	3	1	2	Not Available	3	6.8
Acifluorfen, amino analog	Not Tested	3	1	2	Not Available	3	6.8
Bentazon, 6-hydroxy bentazon, 8-hydroxy bentazon	Not Tested	3	1	2	Not Available	3	6.8
Buprofezin	Not Tested	2	1	4	Not Available	3	6.8
Chlorsulfuron	Not Tested	3	1	2	Not Available	3	6.8
Chlorsulfuron, 5-hydroxy-	Not Tested	3	1	2	Not Available	3	6.8
Emamectin	Not Tested	2	1	4	Not Available	3	6.8
Fenbutatin Oxide	Not Tested	2	1	4	Not Available	3	6.8
Fluazifop-butyl	Not Tested	3	1	2	Not Available	3	6.8
Hexazinone	Not Tested	3	1	2	Not Available	3	6.8
IN-A3928	Not Tested	3	1	2	Not Available	3	6.8
IN-B2838	Not Tested	3	1	2	Not Available	3	6.8
IN-T3935	Not	3	1	2	Not	3	6.8

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
	Tested				Available		
IN-T3936	Not Tested	3	1	2	Not Available	3	6.8
IN-T3937	Not Tested	3	1	2	Not Available	3	6.8
Propargite	Not Tested	3	1	2	Not Available	3	6.8
Propargite	Not Tested	3	1	2	Not Available	3	6.8
SD 31723	Not Tested	2	1	4	Not Available	3	6.8
SD 33608	Not Tested	2	1	4	Not Available	3	6.8
Sodium acifluorfen	Not Tested	3	1	2	Not Available	3	6.8
Thiacloprid	Not Tested	3	1	2	Not Available	3	6.8
6-chloronicotinic acid	Not Tested	3	1	1	Not Available	3	6.0
Benoxacor	Not Tested	1	1	3	Not Available	4	6.0
CGA 150829	Not Tested	2	1	1	Not Available	4	6.0
CGA 171683	Not Tested	2	1	1	Not Available	4	6.0
Dalapon	Not Tested	2	2	2	Not Available	3	6.0
Diphenamid	Not Tested	3	1	1	Not Available	3	6.0
Diphenamid, desmethyl	Not Tested	3	1	1	Not Available	3	6.0
Diquat dibromide	Not Tested	1	1	3	Not Available	4	6.0
Imidacloprid	Not Tested	3	1	1	Not Available	3	6.0
Nicotine	Not Tested	1	1	3	Not Available	4	6.0

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
NTN33823	Not Tested	3	1	1	Not Available	3	6.0
NTN35884	Not Tested	3	1	1	Not Available	3	6.0
PB-7	Not Tested	2	1	1	Not Available	4	6.0
Primisulfuron-methyl	Not Tested	2	1	1	Not Available	4	6.0
Propanil	Not Tested	1	1	3	Not Available	4	6.0
WAK4103	Not Tested	3	1	1	Not Available	3	6.0
6-chloropicolinic acid	Not Tested	1	1	4	Not Available	3	5.3
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
Fenridazon	Not Tested	2	1	2	Not Available	3	5.3
Fluridone	Not Tested	2	1	2	Not Available	3	5.3
Nitrapyrin	Not Tested	1	1	4	Not Available	3	5.3
Tebuthiuron	Not Tested	2	1	2	Not Available	3	5.3
Chlorfenapyr	Not Tested	1	1	2	Not Available	4	5.0
Diflufenzopyr	Not Tested	1	1	2	Not Available	4	5.0
Tetradifon	Not Tested	1	1	2	Not Available	4	5.0
2,4-D	Not Tested	3	2	1	3	2	4.5
Dodine	Not Tested	2	1	1	Not Available	3	4.5

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
Fenhexamid	Not Tested	2	1	4	Not Available	2	4.5
Flutolanil	Not Tested	2	1	4	Not Available	2	4.5
Myclobutanil, myclobutanil alcohol metabolite, myclobutanol dihydroxy metabolite	Not Tested	3	1	2	Not Available	2	4.5
Prosulfuron	Not Tested	1	1	3	Not Available	3	4.5
Pyrithiobac-Sodium	Not Tested	2	1	4	Not Available	2	4.5
Spirodiclofen	Not Tested	2	1	4	Not Available	2	4.5
Spiromesifen	Not Tested	2	1	4	Not Available	2	4.5
Boscalid	Not Tested	2	1	3	Not Available	2	4.0
Difenzoquat	Not Tested	1	1	1	Not Available	4	4.0
Ethephon	Not Tested	3	1	1	Not Available	2	4.0
Famoxadone	Not Tested	2	1	3	Not Available	2	4.0
Fenamidone	Not Tested	2	1	3	Not Available	2	4.0
Fluoxastrobin	Not Tested	2	1	3	Not Available	2	4.0
MCPA	Not Tested	1	1	1	Not Available	4	4.0
Methoprene	Not Tested	2	1	3	Not Available	2	4.0
Methoxyfenozide	Not Tested	2	1	3	Not Available	2	4.0
Novaluron	Not Tested	2	1	3	Not Available	2	4.0
Pyrimethanil	Not Tested	2	1	3	Not Available	2	4.0
Spirotetramat	Not	2	1	3	Not	2	4.0

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
	Tested				Available		
Trifloxystrobin	Not Tested	2	1	3	Not Available	2	4.0
2,5-dichloro-4-methoxyphenol	Not Tested	1	1	2	Not Available	3	3.8
Chloroneb	Not Tested	1	1	2	Not Available	3	3.8
Chloroneb, hydroxy-	Not Tested	1	1	2	Not Available	3	3.8
Clofencet	Not Tested	1	1	2	Not Available	3	3.8
Glufosinate-Ammonium	Not Tested	1	2	1	Not Available	3	3.8
HOE-061517	Not Tested	1	2	1	Not Available	3	3.8
HOE-099730	Not Tested	1	2	1	Not Available	3	3.8
2,3-dihydro-3,3-dimethyl-2-oxo-5-benzofuranyl methyl sulfonate	Not Tested	2	1	2	Not Available	2	3.5
2-hydroxy-2,3-dihydro-3,3-dimethyl-5-benzofuranyl methyl sulfonate	Not Tested	2	1	2	Not Available	2	3.5
Bispyribac-sodium	Not tested	1	1	4	Not Available	2	3.5
Butafenacil	Not Tested	1	1	4	Not Available	2	3.5
Butylamine, sec-	Not Tested	2	1	2	Not Available	2	3.5
Compound 125670	Not Tested	2	1	2	Not Available	2	3.5
Ethofumesate	Not Tested	2	1	2	Not Available	2	3.5
Quinclorac	Not Tested	2	1	2	Not Available	2	3.5
Sethoxydim	Not Tested	2	1	2	Not Available	2	3.5
Sethoxydim hydroxylate sulfone	Not	2	1	2	Not	2	3.5

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
	Tested				Available		
Sethoxydim sulfoxide	Not Tested	2	1	2	Not Available	2	3.5
Tepraloxydim	Not Tested	2	1	2	Not Available	2	3.5
Tralkoxydim	Not Tested	2	1	2	Not Available	2	3.5
3-t-butyl-5-chloro-6-hydroxymethyluracil	Not Tested	1	1	1	Not Available	3	3.0
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
Azoxystrobin	Not Tested	1	1	3	Not Available	2	3.0
Azoxystrobin Z isomer	Not Tested	1	1	3	Not Available	2	3.0
CGA 161149	Not Tested	1	1	1	Not Available	3	3.0
CGA 195654	Not Tested	1	1	1	Not Available	3	3.0
Cloprop	Not Tested	1	1	1	Not Available	3	3.0
Dimethenamid	Not Tested	2	1	1	Not Available	2	3.0
Dimethipin	Not Tested	1	1	1	Not Available	3	3.0
Fluroxypyr	Not Tested	2	1	1	Not Available	2	3.0
Sulfosulfuron	Not Tested	2	1	1	Not Available	2	3.0
Terbacil	Not Tested	1	1	1	Not Available	3	3.0
Triasulfuron	Not Tested	1	1	1	Not Available	3	3.0
Maleic hydrazide	Not	3	1	4	Not	1	2.8

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
	Tested				Available		
Spinoteram	Not Tested	3	1	4	Not Available	1	2.8
Spinosad	Not Tested	3	1	4	Not Available	1	2.8
Amicarbazone	Not Tested	1	1	2	Not Available	2	2.5
Aminopyralid	Not Tested	1	2	1	Not Available	2	2.5
Clopyralid	Not Tested	1	2	1	Not Available	2	2.5
Halosulfuron	Not Tested	1	1	2	Not Available	2	2.5
Picloram	Not Tested	1	2	1	Not Available	2	2.5
Clethodim	Not Tested	Not Available	1	2	Not Available	3	2.3
Glyphosate-Trimesium	Not Tested	1	1	1	Not Available	2	2.0
Metsulfuron Methyl	Not Tested	1	1	1	Not Available	2	2.0
Carfentrazone Ethyl	Not Tested	1	1	4	Not Available	1	1.8
Fludioxanil	Not Tested	1	1	4	Not Available	1	1.8
Mefenpyr-diethyl	Not Tested	1	1	4	Not Tested	1	1.8
Pyriproxifen	Not Tested	1	1	4	Not Available	1	1.8
Chlorantraniliprole	Not Tested	1	1	3	Not Available	1	1.5
Aminomethylphosphonic acid	Not Tested	1	2	1	Not Available	1	1.3
Flonicamid	Not Tested	1	1	2	Not Available	1	1.3
Glyphosate	Not Tested	1	2	1	Not Available	1	1.3

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

Compound /Compund Class	*Historical Testing for Violations (V)*	*Reulatory Concern [i] (R)*	*Pre-Slaughter Interval [ii] (P)*	*Bioconcen-trations[iii] (B)*	*Endocrine Distruption [iv]*	*Toxicity[v] (T)*	*Relative public health concern rating(((2*R)+P+B)/4)*T*
2,6 DIPN	Not Tested	1	1	1	Not Available	1	1.0
Bensulfuron methyl ester	Not Tested	Not Available	1	1	Not Available	2	1.0
Clothiodin	Not Tested	1	1	1	Not Available	1	1.0
Flucarbazone-sodium	Not Tested	1	1	1	Not Available	1	1.0
Fluthiacet-Methyl (CGA-248757)	Not Tested	1	1	1	Not Available	1	1.0
Mesosulfuron-methyl	Not Tested	1	1	1	Not Available	1	1.0
Prohexadione-ca1cium	Not Tested	1	1	1	Not Available	1	1.0
Propoxycarbazone	Not Tested	1	1	1	Not Available	1	1.0
Pymetrozine	Not Tested	1	1	1	Not Available	1	1.0
Pyrasulfatole	Not Tested	1	1	1	Not Available	1	1.0
Quizalofop-ethyl	Not Tested	1	1	1	Not Available	1	1.0
Topramezone	Not Tested	1	1	1	Not Available	1	1.0
Teflubenzuron	Not Tested	Not Available	1	Not Available	Not Available	Not Available	0.0

[i] Scores for regulatory concern, *R*, are provided by EPA.
[ii] Scores for withdrawal time *P*, are provided by EPA.
[iii] Scores for bioconcentration factor are provided by EPA.
[iv] Scores for endocrine disruption are provided by EPA.
[v] Scores for toxicity are provided by EPA.
[vi] 5-Hydroxythiabendazole, benomyl (as carbendazim), thiabendazole
[vii] Not Tested = not scheduled for sampling by FSIS during the 10 year period, 01/01/1998 - 12/31/2007.
[viii] Aldicarb, aldicarb sulfoxide, aldicarb sulfone, carbaryl, carbofuran, carbofuran 3-hydroxy
[ix] Carbaryl 5,6-dihydroxy, chlorpropham, propham, thiobencarb, 4-chlorobenzylmethylsulfone,4-chlorobenzylmethylsulfone sulfoxide

Table 26 *(continued)*
Scoring Table for Pesticides
2010 U. S. NRP, Domestic Scheduled Sampling Plan

[x] 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.

[xi] Azinphos-methyl, azinphos-methyl oxon, chlorpyrifos, diazinon, diazinon oxon, diazinon met G-27550, dichlorvos, dimethoate, dimethoate oxon, dioxathion, ethion, ethion monooxon, f sulfoxide, malathion, malathion oxon, naled, phosmet, phosmet oxon, pirimiphos-methyl, trichlorfon, tetrachlorvinphos, tetrachlorvinphos-4 metabolites, acephate, methamidophos, chlorpy desisopropyl, fenamiphos sulfone desisopropyl, isofenphos, isofenphos oxon, isofenphos desisopropyl, isofenphos oxon desisopropyl, methidathion, ODM, parathion (ethyl), parathion oxon oxon sulfoxide, phorate sulfone, phorate sulfoxide, profenofos, sulprofos, sulprofos oxon, sulprofos oxon sulfone, sulprofos oxon sulfoxide, sulprofos sulfone, sulprofos sulfoxide, tribufos (

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

[xiii] Atrazine, simazine, propazine, terbuthylazine

[xiv] Atrazine, chloro metabolites, metribuzin, metribuzin DADK, metribuzin DA, metribuzin DK, amitraz, amitraz 2,4-DMA metabs., desdiethyl simazine, desethyl simazine, simazine chlor

Table 27
Pesticide Compound/Production Class Pairs, Sorted by Sampling Priority Score, with Adjusted Number of Analyses
2010 U. S. 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	Young chickens	709.44	300	300	300	300	300
CHCs/COPs	Market hogs	311.92	300	300	300	300	300
CHCs/COPs	Steers	201.95	300	300	300	300	300
CHCs/COPs	Sows	15.472	300	300	195	195	195
CHCs/COPs	Mature chickens	12.688	300	300	195	195	195
CHCs/COPs	Boars/Stags	1.648	300	230	230	230	230
CHCs/COPs	Formula fed veal	1.344	300	230	230	230	230
CHCs/COPs	Roaster pigs	0.816	300	300	195	195	195
Totals			**2,400**				**2050**

[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 U. S. NRP

Design of the Import Reinspection 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. 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 high priority compounds chosen for the IRSP are the same as the domestic plan. After identifying high-priority compounds and compound classes, FSIS applies other considerations to determine which compounds to sample, specifically the availability of analytical methods within the FSIS laboratories. Only the chlorinated hydrocarbon/chlorinated organophosphate (CHCs/COPs) compound class is included in the 2010 U. S. NRP. The compounds identified by the 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 monitors for 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 percent 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.[1]

Animal Product Classes

Table 7 lists the estimated amounts of all product classes imported into the United States and the percentage of each of the product classes. The percentage is calculated of each product class imported annually using *Equation 15.*

Equation 15

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

[1] This paragraph explains FSIS policies on imported egg product testing. However, in 2010 no imported egg products were tested.

Equation 16 calculates the relative sampling priority by multiplying the percent product class imported (P_C) by the pesticide scores.

Equation 16
Relative Sampling Priority (RSP) = (P_C) × Pesticide Score

The sampling options are based on the calculated scores.
(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 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**.** The following products will not be sampled, because the raw materials used are from countries that are eligible to ship raw products to the U.S.

(a) Processed beef from Australia, Canada, Mexico, New Zealand, Uruguay, and Costa Rica;
(b) combination products (varied) and veal from Canada;
(c) lamb and mutton from Australia, Canada, and New Zealand;
(d) pork from Canada, Denmark, Mexico and Netherlands;
(e) chicken processed from Canada, and Mexico;
(f) turkey from Canada, and
(g) other fowl from Canada and France

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. The adjusted number of samples is listed in Table 28 under the column "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 under the column "Final Number of Samples." The numbers in the two columns may vary slightly due to 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:

(a) less than one percent; and
(b) 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, then eight samples per compound/compound class are collected. These products include horse, fresh; chicken, processed; goat, fresh and processed; turkey, fresh and processed; other fowl, fresh; and varied combination, fresh and processed. If a country exports 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. Tables 29 through 38 provide the numbers of samples per country per product class for each compound/compound class.

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

For major product classes, the number of samples allocated to each country was dependant on the relative amount of product imported from that country. Table 8 lists the amount of product imported from each country. *Equation 17* calculates the percent of a product class imported from a country, which is listed in Table 9.

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 collected at the port of entry was calculated using *Equation 18*.

Equation 18

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

This information is found under column "Unadjusted Number of Samples ($U_{C/S}$)" in Tables 30 through 42.

Each country with less than eight samples was assigned a minimum of eight samples as noted under the column "Adjustment # 1" in Tables 29 through 38. The results of this adjustment are listed under the column "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 is conducted for countries where more than eight samples are taken following *Equation 19.*

Equation 19

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

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 28
Number of Pesticide Samples per Product Class
2010 U. S. NRP, Import Reinspection Sampling Plan

Number Countries	Product Class	Pesticide	% Product Imported	Drug Score	Relative Sample Priority	Number samples	Unadjusted	Final Adjustment
10	Beef, fresh	CHC's/COPs	52.00	16	832.02	300	300	301
7	Beef, processed	CHC's/COPs	6.36	16	101.78	90	90	42
1	Horse, fresh	CHC's/COPs	0.04	16	0.67	8	8	8
2	Other fowl, fresh	CHC's/COPs	0.12	16	0.12	16	16	16
2	Turkey , fresh	CHC's/COPs	0.42	16	6.78	16	16	16
3	Turkey, processed	CHC's/COPs	0.39	16	6.16	24	24	16
3	Goat, fresh	CHC's/COPs	0.70	16	114.28	24	24	24
5	Lamb/Mutton, fresh	CHC's/COPs	5.18	16	83.01	90	90	92
1	Varied combination, fresh	CHC's/COPs	0	16	0	8	8	8
4	Varied combination, processed	CHC's/COPs	0.571	16	9.14	32	32	24

Due to lack of fat, fresh and processed veal products are not be subjected to chlorinated hydrocarbon and chlorinated organophosphate (CHC/COP) analysis.

Table 29
Number of Samples per Product Class for Goat, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Goat Fresh CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted Number of Samples per Country= 24*(Pc/c)/100	Adjust #1	Final Adjustment
Australia	98.27	23.6	8	8
Mexico	0.11	0.01	8	8
New Zealand	1.63	0.43	8	8
Total	**100**	**24**	**24**	**24**

Table 30
Number of Samples per Product Class for Turkey, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Turkey Fresh/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted Number of Samples per Country=16*(Pc/c)/100	Final Adjustment
Canada	95.14	8	8
Chile	4.86	8	8
Total	**100**	**16**	**16**

Table 31
Number of Samples per Product Class for Turkey, Processed
2010 U. S. NRP, Import Reinspection Sampling Plan

Turkey Processed/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted Number of Samples per Country= 16*(Pc/c)/100	Final Adjustment
Canada	18.71	0	0*
Israel	8.69	8	8
Mexico	72.60	8	8
Total	**100**	**16**	**16**

*Country exports fresh turkey

Table 32
Number of Samples per Product Class for Varied Combination, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Varied combination Fresh/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted Number of Samples per Country= 8*(Pc/c)/100	Final Adjustment
Canada	100	8	8
Total	**100**	**8**	**8**

Table 33
Number of Samples per Product Class for Varied Combination, Processed
2010 U. S. NRP, Import Reinspection Sampling Plan

Varied combination Processed/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted Number of Samples per Country= 24*(Pc/c)/100	Adjust # 1	Final Adjustment
Australia	0.04	8	8	8
Canada	72.32	8	0	0*
France	0.02	8	8	8
Mexico	27.62	8	8	8
Total	**100**	**32**	**24**	**24**

Table 34
Number of Samples per Product Class for Beef, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Beef Fresh/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted Number of Samples per Country= 300*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust #2	Final Adjustment
Australia	28.74	86.22	86	86	77	77
Canada	39.30	117.90	118	118	106	106
Chile	0.10	0.30	1	8	8	8
Costa Rica	0.84	2.52	2	8	8	8
Honduras	0.28	0.84	1	8	8	8
Japan	0.02	0.06	1	8	8	8
Mexico	1.88	5.64	5	8	8	8
New Zealand	21.42	64.26	64	64	58	58
Nicaragua	4.53	13.59	14	14	12	12
Uruguay	2.90	8.70	9	9	8	8
Total	**100**	**300**	**301**	**331**	**301**	**301**

Table 35
Number of Samples per Product Class for Beef, Processed
2010 U. S. NRP, Import Reinspection Sampling Plan

Beef Processed CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted Number of Samples per Country=75*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Argentina	15.91	14.32	14	14	9	9
Australia	1.27	1.14	1	8	0	0*
Brazil	54.47	49.02	49	49	33	33
Canada	23.31	20.98	21	21	0	0*
Costa Rica	1.60	1.44	1	8	0	0*
Mexico	2.04	1.84	2	8	0	0*
New Zealand	1.39	1.25	1	8	0	0*
Total	**100**	**89.99**	**89**	**116**	**42**	**42**

*Country exports fresh beef

Table 36
Number of Samples per Product Class for Mutton/Lamb, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Mutton/Lamb Fresh/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted Number of Samples per Country= 90*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust #2	Final Adjustment
Australia	66.02	59.418	59	59	45	45
Canada	0.22	0.198	1	8	8	8
Iceland	0.08	0.072	1	8	8	8
Mexico	0	0	1	8	8	8
New Zealand	33.68	30.312	30	30	23	23
Total	**100**	**90**	**92**	**113**	**92**	**92**

Table 37
Number of Samples per Product Class for Other Fowl, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Other Fowl, Fresh CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted Number of Samples per Country=16*(Pc/c)/100	Final Adjustment
Canada	94.59	8	8
France	5.41	8	8
Total	**100**	**16**	**16**

Table 38
Number of Samples per Product Class for Horse, Fresh
2010 U. S. NRP, Import Reinspection Sampling Plan

Horse Fresh CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country=8*(Pc/c)/100	Final Adjustment
Canada	100	8	8
Total	**100**	**8**	**8**

Scheduled Sampling Plans for Environmental and Processing Contaminants

The candidate environmental and processing contaminants of concern selected by members of the SAT include:

A. Environmental Contaminants

- Heavy metals
- Mycotoxins

FSIS will conduct an exploratory assessment of the heavy metals, specifically lead and cadmium, in the production class "dairy cows." This exploratory assessment sampling follows lead and cadmium sampling that began in 2003 for heifers and dairy cows. This study continued in 2004 for boars and stags, dairy cows, heifers, and mature chickens, in 2005 for steers, in 2006 for mature chickens, in 2007 for mature chickens, in 2008 for beef cows, and in 2009 for dairy cows. Sampling for 2010 is summarized in Table 39.

B. Processing Contaminants

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

No processing contaminants have been designated for analysis in year 2010. Should a contamination incident occur during the year, FSIS could initiate residue sampling as part of an exploratory assessment plan.

Table 39
Number of Scheduled Samples per Product Class for Lead and Cadmium
2010 U. S. NRP Domestic Specifically Designed Survey

Production Class	Compound	Number of Samples
Market hogs	Lead	200
Market hogs	Cadmium	200
Total		**400**

Sampling Plan for Exploratory Assessments

EXPLORATORY ASSESSMENTS

No additional exploratory assessments were scheduled for the 2010 National Residue Plan aside from that for the heavy metals (lead and cadmium) noted under environmental contaminants.

Summary of the Domestic and Import Sampling Plans

Domestic Sampling Plan

Table 40 lists the number of scheduled samples for veterinary drugs, environmental contaminants, and pesticides in all production classes. The table also specifies the FSIS laboratory conducting the analyses for each combination of compound and production class, as well as the sampling plan type. For the convenience of the reader, this information is presented in summary form in Table 41.

Import Sampling Plan

Table 42 lists the final detailed import plan sample numbers for veterinary drugs, pesticides, and unavoidable environmental contaminants in all production classes and all countries. Table 43 contains a summary of the total number of samples per compound per production class. Table 44 presents the number of samples per country per production class. A summary of all sampling plans (domestic and import) is provided in Table 45.

Table 40
Domestic Sampling Plan by Compound Class: Summary I
2010 U. S. NRP, Domestic Scheduled Sampling and Exploratory Assessments

Analysis	Lab	Production Class	Number of Samples	Plan Type
Antibiotics by Bioassay	ML	Beef cows	300	Scheduled Sampling
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	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Ducks	45	Scheduled Sampling
Antibiotics by Bioassay	ML	Geese	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	90	Scheduled Sampling
Antibiotics by Bioassay	ML	Heifers	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Lambs	300	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 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	Sheep	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Sows	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Steers	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Young chickens	300	Scheduled Sampling
Total Antibiotics by Bioassay			**5,135**	
Arsenicals	EL	Beef cows	300	Scheduled Sampling
Arsenicals	EL	Mature turkeys	300	Scheduled Sampling
Arsenicals	EL	Young turkeys	300	Scheduled Sampling
Total Arsenicals			**900**	
Avermectins	EL	Beef cows	300	Scheduled Sampling
Avermectins	EL	Boars/stags	230	Scheduled Sampling
Avermectins	EL	Bulls	230	Scheduled Sampling
Avermectins	EL	Formula–fed veal	300	Scheduled Sampling
Avermectins	EL	Goats	230	Scheduled Sampling
Avermectins	EL	Heavy calves	90	Scheduled Sampling
Avermectins	EL	Non-Formula-fed veal	90	Scheduled Sampling
Avermectins	EL	Steers	230	Scheduled Sampling
Total Avermectins			**1,700**	

Table 40 *(continued)*
Domestic Sampling Plan by Compound Class: Summary I
2010 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments

Analysis	Lab	Production Class	Number of Samples	Plan Type
β-Agonists	WL	Beef cows	300	Scheduled Sampling
β-Agonists	WL	Bulls	300	Scheduled Sampling
β-Agonists	WL	Goats	90	Scheduled Sampling
β-Agonists	WL	Steers	112	Scheduled Sampling
Total β-Agonists[1]			**802**	
Carbadox	WL	Market hogs	230	Scheduled Sampling
Carbadox	WL	Roaster pigs	230	Scheduled Sampling
Total Carbadox			**460**	
Chloramphenicol	EL	Bob veal	300	Scheduled Sampling
Chloramphenicol	EL	Dairy cows	300	Scheduled Sampling
Chloramphenicol	EL	Formula fed veal	300	Scheduled Sampling
Chloramphenicol	EL	Steers	300	Scheduled Sampling
Total Chloramphenicol			**1,200**	
CHCs/COPs, Pesticides	WL	Boars/stags	230	Scheduled Sampling
CHCs/COPs	WL	Formula fed veal	230	Scheduled Sampling
CHCs/COPs	WL	Market hogs	300	Scheduled Sampling
CHCs/COPs	WL	Mature chickens	195	Scheduled Sampling
CHCs/COPs	WL	Roaster pigs	300	Scheduled Sampling
CHCs/COPs	WL	Sows	195	Scheduled Sampling
CHCs/COPs	WL	Steers	300	Scheduled Sampling
CHCs/COPs	WL	Young chickens	300	Scheduled Sampling
Total CHCs/COPs			**2,050**	
Florfenicol	EL	Dairy cows	220	Scheduled Sampling
Florfenicol	EL	Non-formula-fed veal	135	Scheduled Sampling
Florfenicol	EL	Steers	300	Scheduled Sampling
Total Florfenicol			**655**	
Flunixin	ML	Beef cows	300	Scheduled Sampling
Flunixin	ML	Bulls	300	Scheduled Sampling
Flunixin	ML	Bob veal	300	
Flunixin	ML	Dairy cows	300	Scheduled Sampling
Total Flunixin			**1,200**	
Lead and Cadmium	EL	Market hogs	200	Exploratory Assessment
Total Lead and Cadmium			**200**	

Table 40 *(continued)*
Domestic Sampling Plan by Compound Class: Summary I
2010 U. S. NRP, Domestic Scheduled Sampling and Exploratory Assessments

Analysis	Lab	Production Class	Number of Samples	Plan Type
Nitrofurans	WL	Market hogs	300	Scheduled Sampling
Nitrofurans	WL	Sows	300	Scheduled Sampling
Total Nitrofurans			**600**	
Nitroimidazoles	EL	Young chickens	300	Scheduled Sampling
Total Nitroimidazoles			**300**	
Sulfonamides	EL	Beef cows	300	Scheduled Sampling
Sulfonamides	EL	Bob veal	230	Scheduled Sampling
Sulfonamides	EL	Boars/stags	230	Scheduled Sampling
Sulfonamides	EL	Bulls	300	Scheduled Sampling
Sulfonamides	EL	Dairy cows	230	Scheduled Sampling
Sulfonamides	EL	Egg products	300	Scheduled Sampling
Sulfonamides	EL	Formula-fed veal	230	Scheduled Sampling
Sulfonamides	EL	Heavy calves	90	Scheduled Sampling
Sulfonamides	EL	Heifers	230	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	135	Scheduled Sampling
Sulfonamides	EL	Sows	230	Scheduled Sampling
Sulfonamides	EL	Steers	230	Scheduled Sampling
Total Sulfonamides			**3,355**	
Thyreostats	EL	Sows	300	Scheduled Sampling
Total Thyreostats			**300**	
Xenobiotic hormones	ML	Formula-fed veal	390	Scheduled Sampling
Total Xenobiotic hormones[2]			**390**	

[1] β-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
FSIS FERN Lab = Athens, GA

Note:
FAST /KIS™ samples will be screened for Flunixin as part of inspector generated sampling plan.

Table 41
Domestic Sampling Plan by Production Class: Summary II
2010 U. S. NRP, Domestic Scheduled Sampling and Exploratory Assessments

Production Class	Antibiotics	Arsenicals	Avermectins	ß-Agonists	Carbadox	CHC/COP
Beef cows	300	300	300	300	0	0
Bob veal	230	0	0	0	0	0
Bulls	300	0	230	300	0	0
Dairy cows	300	0	0	0	0	0
Formula-fed veal	300	0	300	0	0	230
Heavy calves	90	0	90	0	0	0
Heifers	300	0	0	0	0	0
Non-Formula-fed veal	90	0	90	0	0	0
Steers	300	0	230	112	0	300
Subtotal, Cattle	**2,210**	**300**	**1,240**	**712**	**0**	**530**
Boars/Stags	300	0	230	0	230	230
Market hogs	300	0	0	0	230	300
Roaster pigs	300	0	0	0	0	300
Sows	300	0	0	0	0	195
Subtotal, Swine	**1,200**	**0**	**230**	**0**	**460**	**1025**
Goats	90	0	230	90	0	0
Lambs	300	0	0	0	0	0
Mature sheep	300	0	0	0	0	0
Subtotal, Ovine	**690**	**0**	**230**	**90**	**0**	**0**
Total, All Livestock	**4,100**	**300**	**1,700**	**802**	**460**	**1,555**
Ducks	45	0	0	0	0	0
Geese	45	0	0	0	0	0
Mature chickens	300	0	0	0	0	195
Mature turkeys	300	300	0	0	0	0
Young chickens	300	0	0	0	0	300
Young turkeys	0	300	0	0	0	0
Subtotal, Poultry	**990**	**600**	**0**	**0**	**0**	**495**
Rabbits	45	0	0	0	0	0
Egg products	0	0	0	0	0	0
Total, All Production Classes	**5,135**	**900**	**1,700**	**802**	**460**	**2050**

Table 41 *(continued)*
Domestic Sampling Plan by Production Class: Summary II
2010 U. S. NRP, Domestic Scheduled Sampling and Exploratory Assessments

Production Class	Chloramphenicol	Florfenicol	Flunixin	Lead and Cadmium
Beef cows	0	0	300	0
Bob veal	300	0	300	0
Bulls	0	0	300	0
Dairy cows	300	220	300	0
Formula-fed veal	300	0	0	0
Heavy calves	0	0	0	0
Heifers	0	0	0	0
non-Formula-fed veal	0	135	0	0
Steers	300	300	0	0
Subtotal, Cattle	**1,200**	**655**	**1,200**	**0**
Boars/Stags	0	0	0	0
Market hogs	0	0	0	200
Roaster pigs	0	0	0	0
Sows	0	0	0	0
Subtotal, Swine	**0**	**0**	**0**	**200**
Goats	0	0	0	0
Lambs	0	0	0	0
Mature sheep	0	0	0	0
Subtotal, Ovine	**0**	**0**	**0**	**0**
Total, All Livestock	**1,200**	**655**	**1,200**	**200**
Ducks	0	0	0	0
Geese	0	0	0	0
Mature chickens	0	0	0	0
Mature turkeys	0	0	0	0
Young chickens	0	0	0	0
Young turkeys	0	0	0	0
Subtotal, Poultry	**0**	**0**	**0**	**0**
Rabbits	0	0	0	0
Egg products	0	0	0	0
Total, All Production Classes	**1,200**	**655**	**1,200**	**200**

Table 41 *(continued)*
Domestic Sampling Plan by Production Class: Summary II
2010 U. S. NRP, Domestic Scheduled Sampling and Exploratory Assessments

Production Class	Nitrofurans	Nitroimidazoles	Sulfonamides
Beef cows	0	0	300
Bob veal	0	0	230
Bulls	0	0	300
Dairy cows	0	0	230
Formula-fed veal	0	0	230
Heavy calves	0	0	90
Heifers	0	0	230
non-Formula-fed veal	0	0	90
Steers	0	0	230
Subtotal, Cattle	**0**	**0**	**1,930**
Boars/stags	0	0	230
Market hogs	300	0	230
Roaster pigs	0	0	135
Sows	300	0	230
Subtotal, Swine	**600**	**0**	**825**
Goats	0	0	0
Lambs	0	0	0
Mature sheep	0	0	0
Subtotal, Ovine	**0**	**0**	**0**
Total, All Livestock	**600**	**0**	**2755**
Ducks	0	0	0
Geese	0	0	0
Mature chickens	0	0	300
Mature turkeys	0	0	0
Young chickens	0	300	0
Young turkeys	0	0	0
Subtotal, Poultry	**0**	**300**	**300**
Rabbits	0	0	0
Egg products	0	0	300
Total, All Production Classes	**600**	**300**	**3,355**

Table 41 *(continued)*
Domestic Sampling Plan by Production Class: Summary II
2010 U. S. NRP, Domestic Scheduled Sampling and Exploratory Assessments

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

Table 42
Import Sampling Plan: Samples per Product Class Summary
2010 U. S. NRP, Import Reinspection Sampling Plan

Country	Product	Compound	No of Samples
Australia	Mutton/Lamb Processed	CHC/COP	0
Canada	Mutton/Lamb Processed	CHC/COP	0
New Zealand	Mutton/Lamb Processed	CHC/COP	0
Canada	Veal Processed	CHC/COP	0
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
Chile	Turkey Fresh	CHC/COP	8
Canada	Turkey Processed	CHC/COP	0
Israel	Turkey Processed	CHC/COP	8
Mexico	Turkey Processed	CHC/COP	8
Canada	Varied combination, Fresh	CHC/COP	8
Australia	Varied combination, Processed	CHC/COP	8
Canada	Varied combination, Processed	CHC/COP	0
France	Varied combination, Processed	CHC/COP	8
Mexico	Varied combination, Processed	CHC/COP	8
Australia	Beef Fresh	CHC/COP	77
Canada	Beef Fresh	CHC/COP	106
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	58
Nicaragua	Beef Fresh	CHC/COP	12
Uruguay	Beef Fresh	CHC/COP	8
Argentina	Beef Processed	CHC/COP	9
Australia	Beef Processed	CHC/COP	0
Brazil	Beef Processed	CHC/COP	33
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	Mutton/Lamb Fresh	CHC/COP	45
Canada	Mutton/Lamb Fresh	CHC/COP	8
Iceland	Mutton/Lamb Fresh	CHC/COP	8
Mexico	Mutton/Lamb Fresh	CHC/COP	8
New Zealand	Mutton/Lamb Fresh	CHC/COP	23
Canada	Other Fowl Fresh	CHC/COP	8
France	Other Fowl Fresh	CHC/COP	8
Canada	Horse Fresh	CHC/COP	8
Chile	Beef Fresh	Antibiotics	8

Table 42 *(continued)*
Import Sampling Plan: Samples per Product Class Summary
2010 U. S. NRP, Import Reinspection Sampling Plan

Country	Product	Compound	No of Samples
Costa Rica	Beef Fresh	Antibiotics	8
Honduras	Beef Fresh	Antibiotics	8
Japan	Beef Fresh	Antibiotics	8
Mexico	Beef Fresh	Antibiotics	8
Nicaragua	Beef Fresh	Antibiotics	12
Uruguay	Beef Fresh	Antibiotics	8
New Zealand	Beef Fresh	Antibiotics	58
Canada	Beef Fresh	Antibiotics	106
Australia	Beef Fresh	Antibiotics	77
Chile	Chicken Fresh	Antibiotics	8
Canada	Chicken Fresh	Antibiotics	82
Canada	Horse Fresh	Antibiotics	8
Canada	Other Fowl Fresh	Antibiotics	8
France	Other Fowl Fresh	Antibiotics	8
Australia	Pork Fresh	Antibiotics	8
Chile	Pork Fresh	Antibiotics	8
Finland	Pork Fresh	Antibiotics	8
Ireland	Pork Fresh	Antibiotics	8
Mexico	Pork Fresh	Antibiotics	8
Netherlands	Pork Fresh	Antibiotics	8
New Zealand	Pork Fresh	Antibiotics	8
N.Ireland	Pork Fresh	Antibiotics	8
Poland	Pork Fresh	Antibiotics	8
Spain	Pork Fresh	Antibiotics	8
Sweden	Pork Fresh	Antibiotics	8
UK	Pork Fresh	Antibiotics	8
Denmark	Pork Fresh	Antibiotics	17
Canada	Pork Fresh	Antibiotics	121
Canada	Turkey Fresh	Antibiotics	8
Chile	Turkey Fresh	Antibiotics	8
Canada	Varied combination, Fresh	Antibiotics	8
Australia	Veal, Fresh	Antibiotics	15
Canada	Veal, Fresh	Antibiotics	38
New Zealand	Veal, Fresh	Antibiotics	37
Chile	Chicken Fresh	Arsenicals	8
Canada	Chicken Fresh	Arsenicals	82
Canada	Chicken Processed	Arsenicals	0
Mexico	Chicken Processed	Arsenicals	0
Israel	Chicken Processed	Arsenicals	8
Australia	Pork Fresh	Arsenicals	8
Chile	Pork Fresh	Arsenicals	8
Denmark	Pork Fresh	Arsenicals	8
Finland	Pork Fresh	Arsenicals	8
Ireland	Pork Fresh	Arsenicals	8

Table 42 *(continued)*
Import Sampling Plan: Samples per Product Class Summary
2010 U. S. NRP, Import Reinspection Sampling Plan

Country	Product	Compound	No of Samples
Mexico	Pork Fresh	Arsenicals	8
Netherlands	Pork Fresh	Arsenicals	8
New Zealand	Pork Fresh	Arsenicals	8
N.Ireland	Pork Fresh	Arsenicals	8
Poland	Pork Fresh	Arsenicals	8
Spain	Pork Fresh	Arsenicals	8
Sweden	Pork Fresh	Arsenicals	8
UK	Pork Fresh	Arsenicals	8
Canada	Pork Fresh	Arsenicals	8
Canada	Turkey Fresh	Arsenicals	8
Chile	Turkey Fresh	Arsenicals	8
Canada	Turkey Processed	Arsenicals	0
Israel	Turkey Processed	Arsenicals	8
Mexico	Turkey Processed	Arsenicals	8
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
Nicaragua	Beef Fresh	Avermectins	12
Uruguay	Beef Fresh	Avermectins	8
New Zealand	Beef Fresh	Avermectins	58
Canada	Beef Fresh	Avermectins	106
Australia	Beef Fresh	Avermectins	77
Australia	Beef Processed	Avermectins	0
Canada	Beef Processed	Avermectins	0
Mexico	Beef Processed	Avermectins	0
Uruguay	Beef Processed	Avermectins	0
Argentina	Beef Processed	Avermectins	9
New Zealand	Beef Processed	Avermectins	0
Brazil	Beef Processed	Avermectins	33
Australia	Goat, Fresh	Avermectins	8
Mexico	Goat, Fresh	Avermectins	8
New Zealand	Goat, Fresh	Avermectins	8
Canada	Mutton/Lamb Fresh	Avermectins	8
Iceland	Mutton/Lamb Fresh	Avermectins	8
Mexico	Mutton/Lamb Fresh	Avermectins	8
New Zealand	Mutton/Lamb Fresh	Avermectins	23
Australia	Mutton/Lamb Fresh	Avermectins	45
Australia	Mutton/Lamb Processed	Avermectins	0
Canada	Mutton/Lamb Processed	Avermectins	0
New Zealand	Mutton/Lamb Processed	Avermectins	0
Australia	Veal Fresh	Avermectins	15
New Zealand	Veal Fresh	Avermectins	37

Table 42 *(continued)*
Import Sampling Plan: Samples per Product Class Summary
2010 U. S. NRP, Import Reinspection Sampling Plan

Country	Product	Compound	No of Samples
Canada	Veal Fresh	Avermectins	38
Australia	Veal Fresh	B-agonist	15
New Zealand	Veal Fresh	B-agonist	37
Canada	Veal Fresh	B-agonist	38
Chile	Chicken Fresh	chloramphenicals	8
Canada	Chicken Fresh	chloramphenicals	82
Chile	Turkey Fresh	chloramphenicals	8
Canada	Turkey Fresh	chloramphenicals	8
Uruguay	Beef Fresh	Chloramphenicol	8
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
Nicaragua	Beef Fresh	Chloramphenicol	8
New Zealand	Beef Fresh	Chloramphenicol	9
Canada	Beef Fresh	Chloramphenicol	16
Australia	Beef Fresh	Chloramphenicol	12
Australia	Veal Fresh	Chloramphenicol	15
New Zealand	Veal Fresh	Chloramphenicol	37
Canada	Veal Fresh	Chloramphenicol	38
Australia	Beef Fresh	Florfenicol	12
Canada	Beef Fresh	Florfenicol	16
Chile	Beef Fresh	Florfenicol	8
Costa Rica	Beef Fresh	Florfenicol	8
Honduras	Beef Fresh	Florfenicol	8
Japan	Beef Fresh	Florfenicol	8
Mexico	Beef Fresh	Florfenicol	8
New Zealand	Beef Fresh	Florfenicol	9
Nicaragua	Beef Fresh	Florfenicol	8
Uruguay	Beef Fresh	Florfenicol	8
Uruguay	Beef Fresh	Flunixin	8
Chile	Beef Fresh	Flunixin	8
Costa Rica	Beef Fresh	Flunixin	8
Honduras	Beef Fresh	Flunixin	8
Japan	Beef Fresh	Flunixin	8
Mexico	Beef Fresh	Flunixin	8
Nicaragua	Beef Fresh	Flunixin	8
New Zealand	Beef Fresh	Flunixin	9
Canada	Beef Fresh	Flunixin	16
Australia	Beef Fresh	Flunixin	12
Chile	Chicken Fresh	Nitroimidazole	8
Canada	Chicken Fresh	Nitroimidazole	82
Chile	Beef Fresh	Sulfonamides	8

Table 42 *(continued)*
Import Sampling Plan: Samples per Product Class Summary
2010 U. S. NRP, Import Reinspection Sampling Plan

Country	Product	Compound	No of Samples
Costa Rica	Beef Fresh	Sulfonamides	8
Honduras	Beef Fresh	Sulfonamides	8
Japan	Beef Fresh	Sulfonamides	8
Mexico	Beef Fresh	Sulfonamides	8
Nicaragua	Beef Fresh	Sulfonamides	12
Uruguay	Beef Fresh	Sulfonamides	8
New Zealand	Beef Fresh	Sulfonamides	58
Canada	Beef Fresh	Sulfonamides	106
Australia	Beef Fresh	Sulfonamides	77
Australia	Beef Processed	Sulfonamides	0
Canada	Beef Processed	Sulfonamides	0
Mexico	Beef Processed	Sulfonamides	0
New Zealand	Beef Processed	Sulfonamides	0
Uruguay	Beef Processed	Sulfonamides	0
Argentina	Beef Processed	Sulfonamides	9
Brazil	Beef Processed	Sulfonamides	33
Canada	Horse Fresh	Sulfonamides	8
Australia	Pork Fresh	Sulfonamides	8
Canada	Pork Fresh	Sulfonamides	121
Chile	Pork Fresh	Sulfonamides	8
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
Poland	Pork Fresh	Sulfonamides	8
Spain	Pork Fresh	Sulfonamides	8
Sweden	Pork Fresh	Sulfonamides	8
United Kingdom	Pork Fresh	Sulfonamides	8
Denmark	Pork Fresh	Sulfonamides	17
Canada	Pork Processed	Sulfonamides	0
Denmark	Pork Processed	Sulfonamides	0
Mexico	Pork Processed	Sulfonamides	0
Netherlands	Pork Processed	Sulfonamides	0
Croatia	Pork Processed	Sulfonamides	8
Germany	Pork Processed	Sulfonamides	8
Hungary	Pork Processed	Sulfonamides	8
Italy	Pork Processed	Sulfonamides	8
Poland	Pork Processed	Sulfonamides	0
San Marino	Pork Processed	Sulfonamides	8
Spain	Pork Processed	Sulfonamides	0
Canada	Turkey Fresh	Sulfonamides	8
Chile	Turkey Fresh	Sulfonamides	8
Canada	Turkey Processed	Sulfonamides	0

Table 42 *(continued)*
Import Sampling Plan: Samples per Product Class Summary
2010 U. S. NRP, Import Reinspection Sampling Plan

Country	Product	Compound	No of Samples
Israel	Turkey Processed	Sulfonamides	8
Mexico	Turkey Processed	Sulfonamides	8
Canada	Varied combination, Fresh	Sulfonamides	8
Canada	Varied combination, Processed	Sulfonamides	0
Australia	Varied combination, Processed	Sulfonamides	8
France	Varied combination, Processed	Sulfonamides	8
Mexico	Varied combination, Processed	Sulfonamides	8
Australia	Veal Fresh	Sulfonamides	15
New Zealand	Veal Fresh	Sulfonamides	37
Canada	Veal Fresh	Sulfonamides	38
Canada	Veal Processed	Sulfonamides	0
Australia	Veal Fresh	Thyreostats	15
New Zealand	Veal Fresh	Thyreostats	37
Canada	Veal Fresh	Thyreostats	38
Australia	Veal Fresh	Zeranol	15
New Zealand	Veal Fresh	Zeranol	37
Canada	Veal Fresh	Zeranol	38
Total			**3715**

Table 43
Import Sampling Plan: Compounds per Product Class Summary
2010 U. S. NRP, Import Reinspection Sampling Plan

Compound	AB	AVM	AS	CHMP	FLORF	FLNX	β-agonist	THY	NTM	SLF	ZRNL	CHC/COP	Total
Beef, fresh	301	301	-	93	93	93	-	-	-	301	-	301	1483
Beef, processed	-	42	-	-	-	-	-	-	-	42	-	42	126
Horse, fresh	8	-	-	-	-	-	-	-	-	8	-	8	24
Pork, fresh	234	-	112	-	-	-	-	-	-	234	-	-	580
Pork, processed	-	-	-	-	-	-	-	-	-	40	-	-	40
Veal, fresh	90	90	-	90	-	-	90	90	-	90	90	-	630
Veal, processed	-	-	-	-	-	-	-	-	-	-	-	-	0
Lamb/Mutton, fresh	-	92	-	-	-	-	-	-	-	-	-	92	184
Lamb/Mutton, processed	-	-	-	-	-	-	-	-	-	-	-	-	0
Goat, fresh	-	24	-	-	-	-	-	-	-	-	-	24	48
Turkey , fresh	16	-	16	16	-	-	-	-	-	16	-	16	80
Chicken, fresh	90	-	90	90	-	-	-	-	90	-	-	-	360
Chicken, processed		-	8	-	-	-	-	-	-	-	-	-	8
Other fowl, fresh	16	-	-	-	-	-	-	-	-	-	-	16	32
Other fowl, processed	-	-	-	-	-	-	-	-	-	-	-	-	0
Turkey, processed	-	-	16	-	-	-	-	-	-	16	-	16	48
Varied combination, fresh	8	-	-		-	-	-	-	-	8	-	8	24
Varied combination, processed	-	-	-	-	-	-	-	-	-	24	-	24	48
Eggs, processed	-	-	-	-	-	-	-	-	-	-	-	-	0
Total	**763**	**549**	**242**	**289**	**93**	**93**	**90**	**90**	**90**	**779**	**90**	**547**	**3715**

AB=Antibiotics; AVM=Avermectins, AS=Arsenicals; CHMP=Chloramphenicol;

RCT=Ractopamine; THY=Thyreostats; NTM=Nitroimidazoles; SLF=Sulfonamides; ZRNL=Zeranol;

CHC/COP =Chlorinated hydrocarbons/Organophosphates

Table 44
Number of Samples per Country per Product Class Summary
2010 U. S. NRP, Import Reinspection Sampling Plan

Country	Beef, fresh	Beef, processed	Horse, fresh	Pork, fresh	Pork, processed	Veal, fresh	Lamb/Mutton, fresh	Lamb/Mutton, processed	Goat, fresh	Turkey, fresh	Chicken, fresh	Chicken, processed	Other fowl fresh	Other fowl processed	Turkey, processed	Varied combination, fresh	Varied combination, processed	Total
Argentina	-	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**27**
Australia	344	-	-	24	-	105	90	-	16	-	-	-	-	-	-	-	16	**595**
Brazil	-	99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**99**
Canada	472	-	24	250	-	266	16	-	-	40	328	-	16	-	-	24	-	**1436**
Chile	56	-	-	24	-	-	-	-	-	40	32	-	-	-	-	-	-	**152**
Costa Rica	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**56**
Croatia	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Denmark	-	-	-	42	-	-	-	-	-	-	-	-	-	-	-	-	-	**42**
Finland	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
France	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	16	**32**
Germany	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Honduras	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**56**
Hungary	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Iceland	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	**16**
Ireland	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
Israel	-	-	-	-	-	-	-	-	-	-	-	8	-	-	24	-	-	**32**
Italy	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Japan	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**56**
Mexico	56	-	-	24	-	-	16	-	16	-	-	-	-	-	24	-	16	**152**
Netherlands	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
New Zealand	259	-	-	24	-	259	46	-	16	-	-	-	-	-	-	-	-	**604**
Nicaragua	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**72**
N. Ireland	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
Poland	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
San Marino	-	-		-	8	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Spain	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
Sweden	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
United Kingdom	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
Uruguay	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**56**
Total	**1483**	**126**	**24**	**580**	**40**	**630**	**184**	**0**	**48**	**80**	**360**	**8**	**32**	**0**	**48**	**24**	**48**	**3715**

Table 45
Combined Summary
2010 U. S. 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]	5,135	763	_	5,898	*Domestic Scheduled Sampling*: Samples are scheduled as follows: heavy calves (90), non-formula fed veal (90), bulls (300), beef cows (300), dairy cows (300), heifers (300), steers (300), bob veal (230), formula fed veal (300), sheep (300), lambs (300), goats (90), market hogs (300), roaster pigs (300), boars/stags (300), sows (300), young chickens (300), mature chickens (300), mature turkeys (300), ducks (45), geese (45), and rabbits (45).
						Import Reinspection Sampling: Samples are scheduled as follows: fresh beef (301), fresh chicken (90), fresh horse (8), fresh other fowl (16), fresh pork (234), fresh turkey (16), fresh varied combination (8), and fresh veal (90).
EL	Arsenicals	900	242	_	1,142	*Domestic Scheduled Sampling*: Samples are scheduled as follows: beef cows (300), mature turkeys (300), and young turkeys (300).
						Import Reinspection Sampling: Samples are scheduled as follows: fresh chicken (90), processed chicken (8), fresh pork (112), fresh turkey (16), and processed turkey (16).
EL	Avermectins	1,700	549	_	2,249	*Domestic Scheduled Sampling*: Samples are scheduled as follows: bulls (230), goats (230), heavy calves (90), non formula-fed veal (90), steers (230), beef cows (300), formula- fed veal (300), and boars/stags (230).
						Import Reinspection Sampling: Samples are scheduled as follows: fresh beef (301), processed beef (42), fresh goat (24), fresh lamb/mutton (92), and fresh veal (90).

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

Table 45 *(continued)*
Combined Summary
2010 U. S. 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	ß -Agonists[2]	802	90	_	892	*Domestic Scheduled Sampling*: Samples are scheduled as follows: beef cows (300), bulls (300), goats (90), and steers (112). *Import Reinspection Sampling*: Samples are scheduled for fresh veal (90).
WL	Carbadox	460		_	460	*Domestic Scheduled Sampling*: 230 samples each are scheduled for market hogs and roaster pigs, respectively. *Import Reinspection Sampling*: Not in the 2009 U. S. NRP
EL	Chloramphe-nicol	1,200	289	_	1,489	*Domestic Scheduled Sampling*: Samples are scheduled as follows: steers (300), bob veal (300), dairy cows (300), and formula fed veal (300). *Import Reinspection Sampling*: Samples are scheduled as follows:fresh beef (93), fresh chicken (90), fresh turkey (16), and fresh veal (90).
WL	CHCs/COPs	2050	547	_	2,597	*Domestic Scheduled Sampling*: Samples are scheduled as follows boars/stags (230), young chickens (300), formula fed veal (230), mature chickens (195), market hogs (300), roaster pigs (300), sows (195), and steers (300). *Import Reinspection Sampling*: Samples are scheduled as follows: fresh beef (301), processed beef (42), fresh horse (8), fresh lamb/mutton (92), fresh goat (24), fresh turkey (16), processed turkey (16), fresh other fowl (16), fresh varied combination (8), and processed varied combination (24).
EL	Florfenicol	655	93	_	748	*Domestic Scheduled Sampling*: Samples are scheduled as follows: dairy cows (220), steers (300) and non-formula-fed veal (135). *Import Reinspection Sampling*: Samples are scheduled for fresh beef (93).
ML	Flunixin	1,200	93	_	1,293	*Domestic Scheduled Sampling*: Samples are scheduled as follows: bulls (300), beef cows (300), bob veal (300) and dairy cows (300). *Import Reinspection Sampling*: Samples are scheduled for fresh beef (93).
EL	Lead and Cadmium	_	_	200	200	*Exploratory Assessment*: Samples are scheduled for 200 Market hogs. *Import Reinspection Sampling*: No samples are scheduled for 2010 U. S. NRP.

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

Table 45 *(continued)*
Combined Summary
2010 U. S. 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	Nitrofurans	600	_	_	600	*Domestic Scheduled Sampling*: Samples are scheduled as follows: market hogs (300) and sows (300). *Import Reinspection Sampling*: No samples are scheduled for the 2010 U. S. NRP.
EL	Nitroimida-zoles	300	90	_	390	*Domestic Scheduled Sampling*: Samples are scheduled for young chickens (300). *Import Reinspection Sampling*: Samples are scheduled for fresh chicken (90).
EL	Sulfonamides	3,355	779	_	4,134	*Domestic Scheduled Sampling*: Samples are scheduled as follows: bob veal (230), dairy cows (230), heavy calves (90), market hogs (230), non-formula fed veal (90), roaster pigs (135), steers (230), sows (230), mature chickens (300), egg products (300), boars/stags (230), bulls (300), beef cows (300), heifers (230), and formula fed veal (230). *Import Reinspection Sampling*: Samples are scheduled as follows: fresh beef (301), processed beef (42), fresh horse (8), fresh pork (234), processed pork (40), fresh turkey (16), processed turkey (16), fresh varied combination (8), processed varied combination (24), and fresh veal (90).
EL	Thyreostats	300	90	_	390	*Domestic Scheduled Sampling*: Samples are scheduled for sows (300). *Import Reinspection Sampling*: Samples are scheduled for fresh veal (90).
ML	Xenobiotic hormones (Zeranol and Trenbolone)	390	90	_	480	*Domestic Scheduled Sampling*: Samples are scheduled for formula fed veal (390; composed of 300 trenbolone and 90 zeranol). *Import Reinspection Sampling*: Samples are scheduled for fresh veal (90; zeranol, only).
Total		**19,047**	**3,715**	**200**	**22,962**	

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

2010 NRP Sampling Plan

Adjustments

The following are the major adjustments made compared to the 2009 U. S. NRP:

- The Kidney Inhibition Swab (KIS™) test has been implemented as an in-plant screen test as detailed in FSIS Notice 42-10, ”Using the Kidney Inhibition Swab (KIS™) Test to Detect Antimicrobial Drug Residues in Cattle in Selected Establishments- Phase II.” Starting August 16, 2010, the Agency began to replace the Fast Antimicrobial Screen Test (FAST) with the Kidney Inhibition Swab (KIS™) Test in all cattle slaughter establishments. This is an update to Phase I, where the test was used only at 101 designated cattle slaughter establishments.

- Domestic pesticide testing will take place for formula-fed veal, mature chickens, and young chickens.

- Imported chicken and pork commodities were rotated out of pesticide testing in the 2010 National Residue Plan.

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
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

Introduction to 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 AII -
Analytical Methods
2010 U. S. NRP

Compound Class	*Compound*	*Analytical Method*			*Minimum Proficiency Level* [a]		
		Screen	*Determinative (quantitative)*	*Confirmatory (identification)*	*Screen*	*Determinative (quantitative)*	*Confirmatory (identification)*
Antibiotics	Carbadox		GC-ECD	GC/MS		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 LC/MS/MS		0.3 ppm (L)(B) 0.2 ppm (M)(B) 1.5 ppm (P)(L) 0.6 ppm (P)(M)	0.5 ppm (L)(B), 0.3 ppm (M)(B) 0.3 ppm (B)(L,M)
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 AII -
Analytical Methods
2010 U. S. NRP

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
	Tilmycosin		HPLC-Ion Pairing			300 ppb (M) 600 ppb (L,K)	0.1 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			1.0 ppm	0.4 ppm (L,K,M)
	Gentamycin		Bioassay			0.5 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			2.5 ppm	0.1ppm (K,M), 0.4 (L)
	Spectinomycin						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 AII -
Analytical Methods
2010 U. S. NRP

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						
β-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
Dyes	Crystal Violet	ELISA			1 ppb		
	Leuchocrystal Violet	ELISA			1 ppb		
	Leuchomalachite Green	ELISA			1 ppb		
	Malachite Green	ELISA			1 ppb		
Heavy metals	Cadmium			ICP/MS			10 ppb
	Lead						25 ppb

Table AII -
Analytical Methods
2010 U. S. NRP

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	GC-MS	GC-MS	GC-MS	1.0 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) 1.0 ppb (catfish)		5.0 ppb (L) 1.0 ppb (catfish)
	Furaltadone				5.0 ppb (L) 1.0 ppb (catfish)		5.0 ppb (L) 1.0 ppb (catfish)
Nitroimi-dazoles	Hydoxydimetridazole		HPLC	HPLC/MS/MS		1 ppb	1 ppb
	Hydroxyipronidazole					1 ppb	1 ppb
Non-Steroidal Anti-Inflam-matory Drugs (NSAIDs)	Flunixin	ELISA	HPLC/ESI-MS-MS	HPLC/ESI-MS-MS	50 ppb	62.5 ppb (L) 12.5 ppb (M)	62.5 ppb (L) 12.5 ppb (M)
Sulfonamides	Sulfapyridine		TLC	GC/ESI-MS		0.05 ppm	0.1 ppm
	Sulfadiazine						
	Sulfathiazole						
	Sulfamerazine						
	Sulfamethazine						
	Sulfachloropyridazine						
	Sulfamethoxypryridazine						
	Sulfaquinoxaline						
	Sulfadimethoxine						
	Sulfaethoxypyridazine						
	Sulfaphenazole						
	Sulfatroxazole						
	Sulfisoxazole						
	Sulfadoxine						

Table AII -
Analytical Methods
2010 U. S. NRP

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	0.04 ppm	
	Carbophenothion				0.06 ppm	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	0.20 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	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 AII -
Analytical Methods
2010 U. S. NRP

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	0.06 ppm	
	Lindane				0.10 ppm	0.10 ppm	
	Linuron				0.50 ppm	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	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	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				0.04 ppm	0.30 ppm	
Adulterant / Contaminant	Melamine		HPLC-MS-MS	HPLC-MS-MS		50 ppb ground beef 1 ppp RTE	50 ppb ground beef 1 ppp RTE

Table AII -
Analytical Methods
2010 U. S. NRP

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
P = Poultry
PCBs = Polychlorinated biphenyls
ppb = parts per billion
ppm = parts per million
RTE= Ready to eat
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,for a Binomial distribution with sample size "*n*" and violation rate "*v*" (in decimal number), 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% (i.e. 0.01), the probabilities of detecting at least one violation with sampling levels of 230, 300 are 0.90 and 0.95, respectively.

Table AIII
Statistical Table
2010 FSIS National Residue Program

Percentage % Violative in the Sample (*v*)	Probability (*p*)of detecting at least one violation in (*n*) samples			
	0.90	**0.95**	**0.99**	**0.999**
	Number of Samples required "*n*"			
10	22	29	44	66
5	45	59	90	135
1	230	300	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

<u>Procedure to calculate the required number of samples</u>

$1 - p = (1 - v)^n$ ← Subtract one from both side of the equation.

$\log(1 - p) = \log(1 - v)^n$ ← Apply Logarithmic function to both side of the equation.

$\log(1 - p) = n * \log(1 - v)$ ← A logarithmic function property.

$n = \dfrac{\log(1 - p)}{\log(1 - v)}$ ← Sample size based on Violation rate (*v*) and Probability of detecting (*p*).