FOOD SAFETY AND INSPECTION SERVICE

2009 FSIS National Residue Program Scheduled Sampling Plans

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Preface

The Food Safety and Inspection Service (FSIS) National Residue Program (NRP) *Blue Book* is a summary of the scheduled domestic and import sampling plans and includes a summary of adjustments to the 2008 NRP. Detailed discussions describing the principles and methods used to plan and design the NRP sampling plans are provided. Development of the sampling plans is divided into individual sections for domestic and import products for veterinary drugs, pesticides, and unavoidable contaminants. For convenience, tables that report summaries of FSIS sampling plans are provided before the detailed discussions. Three appendices (I-III) are also provided: tissues required for laboratory analysis; FSIS laboratory analytical methods; and a statistical table that describes the probability of detecting a violation given a specified sample size.

Contacts and Comments

Questions about the FSIS NRP should be directed to the USDA-FSIS-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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INTRODUCTION

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

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

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

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

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

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

The range of chemical compounds evaluated for inclusion in the various NRP sampling plans is comprehensive. It includes approved (legal) and unapproved (illegal) veterinary drugs; pesticides that may appear in meat, poultry, and egg products; and other xenobiotic and naturally occurring compounds that may pose a potential human health hazard.

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

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

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

SAMPLING PLANS OF THE NATIONAL RESIDUE PROGRAM

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

DOMESTIC SAMPLING PLAN

Scheduled Sampling

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

Exposure Assessments

Exposure Assessments are used:

- By FSIS, FDA, and EPA to evaluate population exposure to chemical residues in the food supply (uses chemical residue prevalence and concentration data);
- To guide FSIS' decision to condemn carcasses with violative levels of residues;
- To guide FDA's decisions regulating producers when a sample contains violative levels of residues;
- To guide industry's decision to retain product until the sample has been tested; and
- To guide industry's decision to recall product that was not retained while the sample was tested and found to contain violative levels of residue.

Exploratory Assessments

Exploratory Assessments are designed by CRRB:

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

Inspector-Generated Sampling

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

Sampling for individual suspect animals

The in-plant inspector selects a carcass for sampling based on professional judgment and public health criteria outlined in FSIS Directives 10,800.1 and 10,220.3. These criteria include, but are not limited to, the following: animal disease signs and symptoms; producer history; or results from random scheduled sampling. Some samples are screened in the plant by the Inspector- in- Charge (IIC) and verified when necessary by a PHV. Other samples are sent directly to the laboratory for analysis. For

example, if the IIC suspects the misuse of either an antibiotic or sulfonamide drug in an animal, then he or she can perform 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 an FSIS laboratory for confirmation. If the IIC does not have FAST capability, the sample can be sent directly to the FSIS laboratory for testing.

Sampling for suspect animal populations

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

IMPORT REINSPECTION SAMPLING PLAN

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

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

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

Summary Table I
Status of the Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) Prohibited Drugs
2009 FSIS NRP – Domestic and Import Sampling

AMDUCA[1] Prohibited Drug	*Scheduled Samples*		*Total*
	Domestic	*Import*	
Avoparcin (glycopeptide)	Not in the 2009 NRP	Not in the 2009 NRP	0
Chloramphenicol	300, 300, 300, 300, and 300 samples are scheduled for bob veal, dairy cows, young chickens, mature turkeys, and steers, respectively	96, 90, 8, and 90 samples are scheduled for fresh beef, chicken, turkey, and veal , respectively	1,784
Clenbuterol[2]	90, 300, and 300 samples are scheduled for goats, non-formula- fed veal, and steers, respectively	96 and 90 samples are scheduled for fresh pork and veal, respectively	876
Diethylstilbestrol[3]	Not in the 2009 NRP	Not in the 2009 NRP	0
Fluoroquinolones[4]	300, 300, 300, 300, 300, 45, 300, 45, 90, 90, 300, 300, 300, 300, 300, 135, 45, 300, 300, 300, 300, 300, and 300 samples are scheduled for beef cows, boars/stags, bob veal, bulls, dairy cows, ducks, formula- fed veal, geese, goats, heavy calves, heifers, lambs, market hogs, mature chickens, mature turkeys, non-formula- fed veal, rabbits, roaster pigs, sheep, sows, steers, young chickens, and young turkeys, respectively	302, 90, 8, 231, 16, 8, 8, and 90 samples are scheduled for fresh beef, fresh chicken, fresh horse, fresh pork, fresh other fowl, fresh turkey, fresh varied combination, and fresh veal, respectively	6,303
Nitrofurans[5]	300, 300, and 300 samples are scheduled for dairy cows, market hogs, and sows, respectively	No samples are scheduled for 2009 NRP	900
Nitroimidazoles[6]	300 samples each are scheduled for young chickens and young turkeys, respectively	90 samples are scheduled for fresh chicken	690

Summary Table I *(continued)*
Status of the Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) Prohibited Drugs
2009 FSIS NRP – Domestic and Import Sampling

AMDUCA[1] Prohibited Drug	*Scheduled Samples*		*Total*
	Domestic	*Import*	
Phenylbutazone[7]	No samples are scheduled for 2009 NRP	No samples are scheduled for 2009 NRP	0
Ronidazole	Not in the 2009 NRP	Not in the 2009 NRP	0
Vancomycin	Not in the 2009 NRP	Not in the 2009 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
[7] Although not in the FSIS scheduled sampling plan for 2009, testing for phenylbutazone will be conducted for inspector- generated samples found FAST positive

Summary Table II
Rank and Status of Veterinary Drugs
2009 FSIS NRP – Domestic and Import Scheduled Sampling

Rank	*Veterinary Drug*	*Score*	*Scheduled Samples*		*Total*
			Domestic	*Import*	
1	Antibiotics[1]	16.0	300, 300, 300, 300, 300, 45, 300, 45, 90, 90, 300, 300, 300, 300, 300, 135, 45, 300, 300, 300, 300, 300, and 300 samples are scheduled for beef cows, boars/stags, bob veal, bulls, dairy cows, ducks, formula-fed veal, geese, goats, heavy calves, heifers, lambs, market hogs, mature chickens, mature turkeys, non-formula-fed veal, rabbits, roaster pigs, sheep, sows, steers, young chickens, and young turkeys, respectively	302, 90, 8, 231,16, 8, 8, and 90 samples are scheduled for fresh beef, fresh chicken, fresh horse, fresh pork, fresh other fowl, fresh turkey, fresh varied combination, and fresh veal, respectively.	6,303
2	Avermectins[2]	14.0	300, 230, 300, 135, 135, 300, 300, 300, 135, and 230 samples are scheduled for beef cows, bulls, formula- fed veal, goats, heavy calves, lambs, market hogs, mature sheep, non-formula fed veal and steers, respectively	302, 75, 24, 82, and 90 samples are scheduled for fresh beef, processed beef, fresh goat, fresh lamb/mutton and fresh veal , respectively	2,938
3	Sulfonamides[3]	12.0	300, 135, 300, 135, 300, 300, 300, 90, 300, 135, 300, 135, 135, 230, 300, and 230 samples are scheduled for beef cows, bob veal, bulls, dairy cows, ducks, egg products, formula-fed veal, heavy calves, heifers, market hogs, mature chickens, non-formula-fed veal, roaster pigs, steers, young chickens and young turkeys, respectively	302, 75, 8, 231, 56, 8, 16, 8, 32, and 90 samples are scheduled for fresh beef, processed beef, fresh horse, fresh pork, processed pork, fresh turkey, processed turkey, fresh varied combination, processed varied combination and fresh veal, respectively	4,451
4	Xenobiotic hormones[4] (trenbolone/zeranol)	12.0	390 samples are scheduled for formula-fed veal (300 trenbolone and 90 zeranol) 390 samples are scheduled for non-formula-fed veal (300 trenbolone and 90 zeranol)	90 samples are scheduled for fresh veal (zeranol, only)	870
5	Florfenicol[5]	12.0	300, 230, and 135 samples are scheduled for dairy cows, formula-fed veal, and non-formula-fed veal, respectively	80 samples are scheduled for fresh beef	745
6	Carbadox[6]	11.3	230 and 230 samples are scheduled for market hogs and roaster pigs, respectively	Not in the 2009 NRP	460

Summary Table II *(continued)*
Rank and Status of Veterinary Drugs
2009 FSIS NRP – Domestic and Import Sampling

Rank	*Veterinary Drug*	*Score*	*Scheduled Samples*		*Total*
			Domestic	*Import*	
7	Flunixin[7]	7.0	300, 300, and 300 samples are scheduled for beef cows, dairy cows, and heavy calves, respectively	96 samples are scheduled for fresh beef	996
8	Thyreostats[8]	4.9	300 samples are scheduled for dairy cows	90 samples are scheduled for fresh veal	390
9	Dipyrone[9]	4.6	Not in the 2009 NRP	Not in the 2009 NRP	0
10	Arsenicals[10]	4.5	300, 300, 300, 300, and 300 samples are scheduled for beef cows, egg products, market hogs, mature turkeys, and young chickens, respectively	90, 8, 103, 8, and 16 samples are scheduled for fresh chicken, processed chicken, fresh pork, fresh turkey, and processed turkey, respectively	1,725
11	Berenil[11]	4.4	Not in the 2009 NRP	Not in the 2009 NRP	0
12	Clorsulon[12]	4.0	Not in the 2009 NRP	Not in the 2009 NRP	0
13	Methyl prednisone[13]	4.0	Not in the 2009 NRP	Not in the 2009 NRP	0
14	Dexamethasone[14]	4.0	Not in the 2009 NRP	Not in the 2009 NRP	0

Summary Table II *(continued)*
Rank and Status of Veterinary Drugs
2009 FSIS NRP – Domestic and Import Sampling

Rank	*Veterinary Drug*	*Score*	*Scheduled Samples*		*Total*
			Domestic	*Import*	
15	Eprinomectin[15]	4.0	Not in the 2009 NRP	Not in the 2009 NRP	0
16	Thiamphenicol[16]	3.6	Not in the 2009 NRP	Not in the 2009 NRP	0
17	Amprolium[17]	3.6	Not in the 2009 NRP	Not in the 2009 NRP	0
18	Benzimidazoles[18]	3.5	Not in the 2009 NRP	Not in the 2009 NRP	0
19	Halofuginone[19]	3.2	Not in the 2009 NRP	Not in the 2009 NRP	0
20	Hormones (naturally occurring)[20]	3.2	Not in the 2009 NRP	Not in the 2009 NRP	0
21	Lasalocid[21]	3.2	Not in the 2009 NRP	Not in the 2009 NRP	0
22	Etodolac[22]	3.0	Not in the 2009 NRP	Not in the 2009 NRP	0

Summary Table II *(continued)*
Rank and Status of Veterinary Drugs
2009 FSIS NRP – Domestic and Import Sampling

Rank	*Veterinary Drug*	*Score*	*Scheduled Samples*		*Total*
			Domestic	*Import*	
23	Prednisone[23]	3.0	Not in the 2009 NRP	Not in the 2009 NRP	0
24	Melengestrol acetate[24]	3.0	Not in the 2009 NRP	Not in the 2009 NRP	0
25	β-Agonists[25]	2.8	90, 300, and 300 samples are scheduled for goats, non-formula-fed veal and steers, respectively	96 and 90 samples are scheduled for fresh pork and fresh veal, respectively	876
26	Levamisole[26]	2.0	Not in the 2009 NRP	Not in the 2009 NRP	0
27	Veterinary tranquilizers[27]	1.6	Not in the 2009 NRP	Not in the 2009 NRP	0
28	Nicarbizin[28]	1.5	Not in the 2009 NRP	Not in the 2009 NRP	0
29	Morantel and pyrantel	1.5	Not in the 2009 NRP	Not in the 2009 NRP	0

[1] Tetracyclines: tetracycline, oxytetracycline, chlortetracycline (HPLC for identification, quantitation by bioassay). Aminoglycosides: spectinomycin, hygromycin, streptomycin, dithydrostreptomycin, amikacin, kanamycin, apramycin, gentamycin, neomycin, tobramycin (LC/MS/MS for confirmation, quantitation of streptomycin, dihydrostreptomycin, gentamycin, and neomycin by bioassay). Macrolides: lincomycin, pirlymycin, clindamycin, tilmicosin, erythromycin, and tylosin. All macrolides are confirmed by LC/MS/MS. Tilmicosin is also quantitated by HPLC. Erythromycin and tylosin are quantitated by the bioassay. Beta Lactams: amoxicillin, ampicillin, cloxacillin, naficillin, cefazolin, DCCD, dicloxacillin, penicillin G, oxacillin, and desacetyl cephaprin.

(LC/MS/MS for confirmation, quantitation by bioassay for penicillin G and ampicillin). Fluroquinolones: ciprofloxacin, norfloxacin, danofloxacin, enrofloxacin, sarafloxacin, difloxacin, desethylene diprofloxacin, desmethyl danofloxacin (LC/MS/MS for confirmation).

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

[3] 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] 2-thiouracil, 6-methyl-2-thiouracil, 6-propyl-2-thiouracil, 2-mercapto-1-methylimidazole, 2- mercaptobenzimidazole

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

[10] Detected as As

[11] Antiprotozoal

[12] Anthelmintic, Trematodes

[13] Glucocorticoid

[14] Glucocorticoid

[15] Avermectin

[16] Chloramphenicol derivative

[17] Coccidiostat

[18] 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

[19] Antiprotozoal, coccidiostat

[20] 17-Estradiol, testosterone, and progesterone

[21] Coccidiostat

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

[23] Glucocorticoid

[24] Xenobiotic hormone

[25] Ractopamine, zilpaterol, cimaterol, and salbutamol

[26] Anthelmintic

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

[28] Coccidiostat

Summary Table III
Rank and Status for Pesticides
2009 FSIS NRP, Domestic and Import Scheduled Sampling

Rank	*Compound /Compound Class*[1]	*Score*	*Status in the 2009 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	135, 135, 135, 300, 300, 300, and 135 samples are scheduled for boars/stags, goats, lambs, market hogs, roaster pigs, steers, and sheep, respectively	303, 75, 8, 230, 56, 82, 24, 8, 90, 8, 16, 16, and 8 samples are scheduled for Fresh Beef, Processed Beef, Fresh Horse, Fresh Pork, Processed Pork, Fresh Lamb/Mutton, Fresh Goat, Fresh Turkey, Fresh Chicken, Processed Chicken, Processed Turkey, Fresh Other Fowl, and Fresh Varied Combination, respectively	2,364
2	Chlorinated organophosphates (COPs) and organo phosphates (OPs) - those compounds not in FSIS COP and OP multi-residue method (MRM)[3]	16.0	Not in the 2009 NRP	Not in the 2009 NRP	0
3	Imazalil	16.0	Not in the 2009 NRP	Not in the 2009 NRP	0
4	Triazines – those compounds not in FSIS triazine multi-residue method (MRM)[4]	15.0	Not in the 2009 NRP	Not in the 2009 NRP	0
5	Carbamates – those compounds in the FSIS carbamate triazine multi-residue method (MRM)[5]	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0
6	Synthetic Pyrethroids – those compounds in the FSIS synthetic pyrethrin (pyrethroids) multi-residue method (MRM)[6]	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0
7	1-(2,4-Dichlorophenyl)-2-(1H-imidazole-1-yl)-1-ethanol[7]	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0

Summary Table III
Rank and Status for Pesticides *(continued)*
2009 FSIS NRP, Domestic and Import Scheduled Sampling Plan

Rank	*Compound /Compound Class*[1]	*Score*	*Status in the 2009 NRP*		
			Domestic	Import	Total
8	1,1-(2,2-Dichloroethylidene)bis(4-methoxybenzene)[8]	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0
9	1-Methoxy-4-(1,2,2,2-tetrachloroethyl)benzene)[9]	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0
10	3-(1-(2,4-Dichlorophenyl)-2-(1H-imidazole-1-yl) ethoxy)-1,2-propane diol[10]	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0
11	Cyhalothrin, lambda	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0
12	Fipronil[11]	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0
13	MB 45950	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0
14	MB 46513	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0
15	Methoxychlor olefin	14.0	Not in the 2009 NRP	Not in the 2009 NRP	0

Summary Table III
Rank and Status for Pesticides *(continued)*
2009 FSIS NRP, Domestic and Import Scheduled Sampling Plan

Rank	*Compound /Compound Class*[1]	*Score*	*Status in the 2009 NRP*		
			Domestic	Import	Total
16	Triazines – compounds in FSIS triazine multi-residue method (MRM)[12]	13.0	Not in the 2009 NRP	Not in the 2009 NRP	0
17	Arsanilic acid	13.0	Not in the 2009 NRP	Not in the 2009 NRP	0
18	Etoxazole	13.0	Not in the 2009 NRP	Not in the 2009 NRP	0
19	Indoxacarb	13.0	Not in the 2009 NRP	Not in the 2009 NRP	0
20	Metconazole	13.0	Not in the 2009 NRP	Not in the 2009 NRP	0
21	Prothioconazole	13.0	Not in the 2009 NRP	Not in the 2009 NRP	0
22	Tetraconazole	13.0	Not in the 2009 NRP	Not in the 2009 NRP	0
23	Triflumizole	13.0	Not in the 2009 NRP	Not in the 2009 NRP	0

Summary Table III
Rank and Status for Pesticides *(continued)*
2009 FSIS NRP, Domestic and Import Scheduled Sampling Plan

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[1] Only those pesticides that have been designated as representing a broad potential public health risk are included in this table. For a complete list of pesticides that were considered for the 2009 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)
[3]Regulatory method is needed: Azinphos-methyl, azinphos-methyl oxon, diazinon, diazinon oxon, diazinon met G-27550, dichlorvos, dimethoate, dimethoate oxon, dioxathion, ethion, ethion monooxon, fenthion, fenthion oxon, fenthion oxon sulfone, fenthion oxon sulfoxide, fenthion sulfone, fenthion sulfoxide, malathion, malathion oxon, naled, phosmet, phosmet oxon, pirimiphos-methyl, trichlorfon, tetrachlorvinphos-4 metabolites, acephate, methamidophos, fenamiphos, fenamiphos sulfoxide, fenamiphos sulfone, fenamiphos sulfoxide desisopropyl, fenamiphos sulfone desisopropyl, isofenphos, isofenphos oxon, isofenphos desisopropyl, isofenphos oxon desisopropyl, methidathion, ODM, parathion (ethyl), parathion oxon, parathion methyl, parathion methyl oxon, phorate, phorate oxon, phorate oxon sulfone, phorate oxon sulfoxide, phorate sulfone, phorate sulfoxide, profenofos, sulprofos, sulprofos oxon, sulprofos oxon sulfone, sulprofos oxon sulfoxide, sulprofos sulfone, sulprofos sulfoxide, tribufos (DEF).
[4] Regulatory method is needed: Atrazine chloro metabolites, metribuzin, metribuzin DADK, metribuzin DA, metribuzin DK, amitraz, amitraz 2,4-DMA metabs., desdiethyl simazine, desethyl simazine, simazine chloro metabolites.
[5] Regulatory method is needed: Aldicarb, aldicarb sulfoxide, aldicarb sulfone, carbaryl, carbofuran, carbofuran, 3-hydroxy.
[6] Cypermethrin, *cis*-permethrin, *trans*-permethrin, fenvalerate, *zeta*-cypermethrin.
[7] Regulatory method is needed.
[8] Regulatory method is needed.
[9] Regulatory method is needed.
[10] Regulatory method is needed.
[11] Regulatory method is needed.
[12] Atrazine, simazine, propazine, terbuthylazine

Summary Table IV
Rank and Status of Environmental Contaminants
2009 FSIS NRP, Domestic and Import Scheduled Sampling

Enviromental Contaminant[1]	*Scheduled Samples*		*Total*
	Domestic	*Import*	
Lead and cadmium	300 samples are scheduled for dairy cows	No samples are scheduled for the 2009 NRP	300

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

Overview of the National Residue Program Design

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

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

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

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

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

Design of the Domestic Scheduled Sampling Plan for Veterinary Drugs

I. Selecting, Scoring, and Ranking Candidate Veterinary Drugs

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

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

Other Veterinary Drugs:

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

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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 (High Performance Liquid Chromatography or mass spectrometry) to establish their identities, where such follow-up methodologies are available.

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

- 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)

Drugs Banned from Extralabel use under AMDUCA

FDA has advised FSIS that drugs banned from extralabel use under AMDUCA, called AMDUCA prohibited, are of high public health concern. Therefore, these AMDUCA prohibited drugs are not evaluated for inclusion using the ranking formula presented below. Instead, all AMDUCA drugs are automatically assigned a high sampling priority, and are included in the NRP if methodologies and resources are available. AMDUCA prohibited drugs are listed in Summary Table I, *Status of AMDUCA Prohibited Drugs (page 1).*

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

Compound Scoring

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

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

Definitions of each of these categories, and the criteria used for scoring, appear at the end of this section in the *Scoring Key for Veterinary Drugs, 2009 Domestic Residue Program*.

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

Compound Ranking

1. Background

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

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

Equation 1

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

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

The category (see *FSIS Historical Testing Information on Violations*, Table 1) is based on the percent of tested carcasses found to have residues in excess of the tolerance or action level. This percentage is determined from data obtained from the FSIS domestic scheduled sampling plan. Drug compounds were scored by two methods: (a) the maximum violation rate seen in any production class (averaged over 1998-2007); and (b) the maximum, for any production class, of the violation rate (again, averaged over 1998-2007), but weighted by the size of the production class. The final score for each drug was assigned based

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

2. Estimating the Violation Rate

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

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

Eight compounds or compound classes for which current, reliable data were available to score the category "FSIS Historical Testing Information on Violations" and 21 compounds or compound classes for which there were no data are listed in Table 1. A least squares linear regression model, using the value of the independent variable from the eight (8) scored compounds or compound classes, was then used to predict scores in the category "FSIS Historical Testing Information on Violations" for the 21 compounds for which this information is not available. The following equation was derived:

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

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

Equation 2

$$Vp = 0.8 + 0.2\ (W*N)$$

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

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

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

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

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

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

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

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

Equation 3

Relative Public Health Concern = *Predicted* or *Actual* score for "FSIS Historical Testing Information on Violations" (Estimate of Relative Hazard) multiplied by:

- a *modifier for* "Acute or Chronic Toxicity Concerns;" and
- a *modifier for* "Impact on New and Existing Human Disease."

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

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

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

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

Equation 4

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

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

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

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

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

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

II. Prioritizing Candidate Drugs

Once the ranking of the veterinary drugs was completed, the ranking scores for relative public health concern were used as criteria for selecting compounds and compound classes to include in the 2009 NRP and to determine which compounds and compound classes to include in the 2009 NRP based on the availability of laboratory resources.

- The consensus of FSIS and FDA was that those compounds and compound classes that have rankings of 1-10 (out of a total of 29) represent a potential public health concern sufficient to justify their inclusion in the 2009 NRP. In addition, FSIS is performing testing on *β*-Agonists (ranked 25th).

Once the high-priority compounds and compound classes had been identified, it was necessary for FSIS to apply practical considerations to determine the compounds for which the Agency would sample. The principal consideration was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Based on these considerations, FSIS plans to schedule the following veterinary drugs in the 2009 NRP for domestic sampling:

- Antibiotics (7-plate bioassay)
- Arsenicals
- Avermectins
- *ß*-Agonists
- Carbadox
- Chloramphenicol
- Florfenicol
- Flunixin
- Nitrofurans
- Nitroimidazoles
- *Phenylbutazone*, Note that phenylbutazone will not be scheduled in the 2009 NRP. However, FAST positive samples will be tested for phenylbutazone.
- Sulfonamides
- Thyreostats
- Xenobiotic hormones

In the 2009 NRP, FSIS will employ a number of analytical methodologies to characterize (identify and quantitate) veterinary drug residues. The methodologies are effective for the analysis of individual compounds and there are also multi-residue methods (MRMs) for antibiotics, avermectins, β-agonists, and sulfonamides that distinguish individual compounds in a compound class.

Summary Table II (see page 3) lists all of the original candidate veterinary drugs in rank order. This table specifies individual compounds and compound classes that will be scheduled for domestic sampling in the 2009 NRP. For each highly ranked compound or compound class that is not included for domestic sampling in the 2009 NRP, a brief explanation of the reason for its exclusion is provided. This table will be used to identify future method development needs for veterinary drugs for the FSIS NRP.

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

The SAT participants identify the production classes of concern for each of the drugs and drug classes to be included in the 2009 NRP. These determinations were based upon professional judgment of the likelihood of finding violations within each production class (information examined included use approvals, extent of use, evidence of misuse and, if available, past violation history), combined with the proportion of total domestic meat consumption each production class represented. The results are presented in Tables 2A-2B, *Production Classes Considered for Each Veterinary Drug/Drug Class* (see page 34,35). Compound/Production Class pairs included in the 2009 NRP are designated by a "●." Those C/PC pairs that are of regulatory concern, but that could not be included in the 2009 NRP because of laboratory resource constraints, are marked with a "○."

FSIS suspended scheduled testing for certain production classes in 2009; these are marked with a "■."

Production class nomenclature:

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

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

IV. Allocation of Sampling Resources

"Full-Resource" Sampling

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

Equation 5

Percent Estimated Relative Percent of Domestic Consumption (ERC)

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

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 4 and as presented in Table 3). The resulting priority score for compound-production class pairs is shown in tables 4 and 5 and is calculated as follows (Equation 6):

Equation 6

Priority Score (PS)

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

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

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

Beginning in the 2006 NRP, minor species, ratites, squab, and bison, have not been scheduled for the domestic sampling program. The reason is that minor species are low production animals. Not scheduling the minor species allows FSIS to focus those resources on the development of methodologies in areas that are of high public health concern.

Beginning in the 2008 NRP, rabbits and ducks have been rotated back in the NRP and will continue to be scheduled for the 2009 domestic sampling program. Beginning in 2009, geese have been rotated back in the NRP and are scheduled for the 2009 domestic sampling program. This is because based on field reports, FDA expressed an interest in performing limited testing for these production classes.

Adjusting Relative Sampling Numbers

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

As described above, FSIS uses "FSIS Historical Testing Information on Violations" as a critical factor in ranking the various veterinary drugs and drug classes according to their relative public health concern. Because this information is available for each production class individually, it can also be used to further refine the relative priority of sampling each C/PC pair. Table 5, *Number of Scheduled Samples for Veterinary Drug/Production Class Pairs, 2009 NRP Domestic Scheduled Sampling*, lists the number of analyses assigned to each C/PC pair in Table 4. Table 5 also reports the total number of samples analyzed in the FSIS scheduled sampling plan for the period 01/01/1998-12/31/2007, and the percent of samples found to be violative (i.e., present at a level in excess of the action level or regulatory tolerance; or, for those compounds that are prohibited, present at any detectable level) for each compound-production class pair. Using these data, the following rules were applied to adjust the sampling numbers:

- If less than 300 samples (i.e., 230 samples) were tested in the FSIS scheduled sampling plan for a compound-production class pair for the period of 01/01/1998-12/31/2007, maintain the sampling level (if 300 were assigned initially, maintain 300 samples).
- If the number of samples tested in the FSIS scheduled sampling plan for a compound-production class pair for the period 01/01/1998-12/31/2007 was 300 samples, and violations were found during CY 2008, or the violation rate greater than or equal to 0.70% ($\geq$ 0.70%) during 01/01/1998-12/31/2007, decrease the sampling level using Statistical Table in Appendix III.
- If 300 samples were tested in the FSIS scheduled sampling plan for a compound-production class pair for the period 01/01/1998-12/31/2007, and no violations were found during CY 2008, maintain the sampling level.
- If at least 300 samples tested in the FSIS scheduled sampling plan for a compound-production class pair (for the period 01/01/2005-12/31/2007), and a violation rate of 0.00% was found, rotate the C/PC pair out of the NRP.[6]
- The maximum number of samples to be scheduled for testing is 300.

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

Adjusting for Laboratory Capacity

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

Adjustment for the Number of Slaughter Facilities

An adjustment to the total number of scheduled samples was made based on the number of production facilities. For this adjustment, FSIS considered the total number of production facilities (USDA Inspected Establishments for 2007) for each production class. If the total number of production facilities for a production class was found to be low relative to other production classes, the total number of scheduled samples was reduced for that production class. The number of samples selected for the

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

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

Adjustment for a Zero Percent (0%) Violation Rate for the three ear Period, 2005 – 2007

FSIS historical violation data were examined for the 2005-2007 production years. For compound slaughter class pairs that had a zero percent violation rate for the three year period, the number of scheduled samples has been reduced to zero.

Final Adjustment

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

"Limited Resource" Sampling

The 2009 NRP includes a number of compounds for which FSIS does not have extensive sampling data. FSIS is concerned with obtaining information on their occurrence in production classes where it is suspected they might be of concern. To enable FSIS to sample this entire range of compounds, it is necessary to limit the number of samples taken per compound. In apportioning this "limited resource" sampling among the production classes of concern, it was particularly important to ensure that a sufficient number of samples be taken from each production class analyzed. If too few samples are taken from a production class, and no violations are detected, it would be difficult to interpret such a result. Where possible, 300 analyses are scheduled in each production class to be sampled. This yields a 95% confidence of detecting a violation, if the true violation rate is 1%.

For the 2009 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 and rabbits. FSIS has the analytical capacity to test 45, 45, 90, 90, 135, and 45 samples for domestic testing are scheduled for ducks, geese, goats, heavy calves, non-formula fed veal and rabbits. FSIS will also schedule 302 fresh beef and 90 fresh veal import samples.

- Avermectins are of concern in goats, heavy calves, non-formula-fed veal, and steers. FSIS has the analytical capacity to test 135 samples each for goats, heavy calves, and non-formula-fed veal, and 230 for steers for domestic testing. FSIS will also schedule 302 fresh beef, 75 processed beef , 90 fresh veal and 24 fresh goat import samples.

- β-Agonists are of concern for goats. The analytical capacity is 90 samples for goats. No import samples are scheduled for goats.

- 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 formula-fed veal and non-formula-fed veal. FSIS has the capacity to analyze 230 and 135 samples for formula-fed veal and non-formula-fed veal. FSIS will schedule 80 fresh beef import samples.

- Sulfonamides are of concern for bob veal, dairy cows, heavy calves, non-formula-fed veal, roaster pigs, steers, and young turkeys. FSIS has the capacity to analyze 135, 135, 90, 135, 135, 230, and 230 samples for bob veal, dairy cows, heavy calves, non-formula-fed veal, roaster pigs, steers, and young turkeys. FSIS will schedule 302, 75, 8, 231, 56, 8, 16, 8, 32, and 90 samples for fresh beef, processed beef, fresh horse, fresh pork, processed pork, fresh turkey, processed turkey, fresh varied combination, processed varied combination, and fresh veal, for import samples.

- Phenylbutazone is of concern for the 2009 domestic NRP; the analytical capacity for phenylbutazone is limited. FSIS will not schedule samples for the domestic 2009 domestic or import program. However, testing for phenylbutazone will be conducted for in-plant FAST positive samples.

- Zeranol is of concern in formula-fed veal and non-formula-fed veal for the 2009 NRP; the analytical capacity for zeranol is 180 samples in the domestic 2009 NRP. FSIS will schedule 90 samples each in formula-fed veal and non-formula-fed veal for domestic sampling. FSIS will also schedule 90 fresh veal import samples for a total of 270 samples.

The above information is presented in tabular format at the end of the section, "Summary of Domestic and Import Sampling," in Table 50, *Combined Summary, 2009 FSIS NRP, Domestic and Import Scheduled Sampling, and Exploratory Assessments*.

V. Scoring Key

FSIS Historical Testing Information on Violations (01/01/1998 - 12/31/2007)

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

Method A: Maximum Violation Rate. Identify the production class exhibiting the highest average violation rate (the number of violations over the period from 1998 - 2007, divided by the total number of samples analyzed). Score as follows:

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

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

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

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

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

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

Regulatory Concern

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

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

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

2 = Intelligence information rarely indicates misuse of this compound.

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

Withdrawal Time

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

- Score = 4, when the withdrawal time 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 drugs, scores in this category were assigned based on estimates of their half-lives.

Impact on New and Existing Human Disease

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

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

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

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

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

Relative Number of Animals Treated

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

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

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

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

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

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

Acute or Chronic Toxicity Concerns

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

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

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

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

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

Table 1
Scoring Table for Veterinary Drugs
2009 FSIS NRP, Domestic Scheduled Sampling

Compound / Compound Class	*Historical Testing for Violations[1] (V)*	*Regulatory Concern[2] (R)*	*Withdrawal Time[3] (W)*	*Relative Number Treated[4] (N)*	*Predicted V (V = 0.8 + 0.2 (W*N))[5]*	*Impact New & Existing Human Disease[6] (D)*	*Acute or Chronic Toxicity Concerns[7] (T)*	*Relative Public Health Concern Score (P = V[(D+3T)/4])*
Antibiotics[8]	4	4	4	4	4.0	4	4	**16.0**
Avermectins[9]	4	3	4	4	4.0	2	4	**14.0**
Sulfonamides[10]	4	4	3	4	4.0	3	3	**12.0**
Xenobiotic Hormones (zeranol, trenbolone)	4 , NA-2[11]	4	1	3	4.0	3	3	**12.0**
Florfenicol[12]	NT	3	4	4	4.0	3	3	**12.0**
Carbadox	3	4	4	3	3.0	3	4	**11.25**
Flunixin[13]	4	4	2	3	4	1	2	**7.0**
Thyreostats[14]	NT	4	3	1	1.4	2	4	**4.9**
Dipyrone	NT	4	3	1	1.4	1	4	**4.6**
Arsenic[15]	2	4	2	4	2	3	2	**4.5**
Berenil[16]	NT	4	4	1	1.6	2	3	**4.4**
Clorsulon[17]	NT	2	3	2	2	2	2	**4.0**
Methyl prednisone[18]	NT	4	2	2	1.6	1	3	**4.0**
Dexamethasone	NT	4	2	2	1.6	1	3	**4.0**
Eprinomectin	NT	2	2	3	2	2	2	**4.0**
Thiamphenicol	NT	3	2	1	1.2	3	3	**3.6**
Amprolium	NT	4	2	2	1.6	3	2	**3.6**
Benzimidazoles[19]	NT	1	3	2	2	1	2	**3.5**
Halofuginone[20]	NT	1	2	2	1.6	2	2	**3.2**
Hormones (naturally occurring)	NT	2	1	4	1.6	2	2	**3.2**

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

Compound / Compound Class	*Historical Testing for Violations[1] (V)*	*Regulatory Concern[2] (R)*	*Withdrawal Time[3] (W)*	*Relative Number Treated[4] (N)*	*Predicted V (V = 0.8 + 0.2 (W*N))[5]*	*Impact New & Existing Human Disease[6] (D)*	*Acute or Chronic Toxicity Concerns[7] (T)*	*Relative Public Health Concern Score (P = V[(D+3T)/4])*
Lasalocid[21]	NT	2	1	3	1.4	3	2	**3.2**
Etodolac[22]	NT	3	2	1	1.2	1	3	**3.0**
Prednisone	NT	3	2	1	1.2	1	3	**3.0**
Melengestrol acetate[23]	1	2	1	4	1	3	3	**3.0**
ß -Agonists[24]	1	4	2	3	1	2	3	**2.8**
Levamisole	NT	3	3	2	2	1	1	**2.0**
Veterinary tranquilizers[25]	NT	4	2	2	1.6	1	1	**1.6**
Nicarbizin[26]	NT	2	2	1	1.2	2	1	**1.5**
Morantel and pyrantel[27]	NT	1	1	2	1.2	2	1	**1.5**

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

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

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[16] Antiprotozoal, histomonas.
[17] Anthelmintic, Trematodes.
[18] Glucocorticoid
[19] Anthelmintic
[20]Antiprotazoal, coccidiostat.
[21] Coccidiostat.
[22] NSAID
[23] Xenobiotic hormone; FDA decreased the score for regulatory concern for melengestrol acetate (MGA) from 3 (2005 NRP) to 2 for the 2006 NRP.
[24] Includes ractopamine, clenbuterol, cimaterol, zilpaterol, and salbutamol. Historical testing data for Ractopamine violations is used to determine the Relative Public Concern score for β-Agonists.
[25] Veterinary Tranquilizers (compounds in FSIS MRM – azaperone and its metabolites azaperol and xyline, haloperidol, acetopromazine, proprionylpromazine, and chlorpromazine
[26] coccidiostat
[27] Anthelmintics.

Table 2A
Production Classes Considered for each Veterinary Drug and Drug Class
2009 FSIS NRP, Domestic Scheduled Sampling

ERC[i]	*Production Class*	Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) Prohibited *Drugs*[ii]					
		Clenbuterol[iii]	*Chloramphenicol*	*Fluoroquinolones*	*Nitrofurans*	*Nitroimidazoles*	*Phenylbutazone*[iv] *(ELISA method)*
1.792	Beef cows			●			○
0.103	Boars/Stags			●			
0.020	Bob veal		●	●			
0.465	Bulls			●			○
1.412	Dairy cows		●	●	●		○
0.167	Ducks			●			
3.243	Egg products						
0.079	Formula-fed veal			●			
0.001	Geese			●			
0.028	Goats	●		●			
0.012	Heavy calves			●			
7.108	Heifers		■	●			
0.151	Lambs			●			
18.676	Market hogs			●	●		
0.730	Mature chickens		■	●			
0.007	Mature sheep			●			
0.055	Mature turkeys		●	●			
0.003	Non-Formula-fed veal	●		●			
0.001	Rabbits			●			
0.047	Roaster pigs			●			
0.937	Sows			●	●		
13.069	Steers	●	●	●			
44.971	Young chickens		●	●		●	
6.879	Young turkeys			●		●	

● = Compound/Production Class Pairs included in the 2009 NRP.
○ = Compound/Production Class Pairs that are of regulatory concern, but are not included in the 2009 NRP because of laboratory resource constraints.
■ = Compound/Production Class Pairs that have been suspended from testing by FSIS in the 2009 NRP.

[i] ERC = Estimated relative percent of domestic consumption, calendar year 2007. 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 2009 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
2009 FSIS 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	11.25	12.0	7.0	3.0
1.792	Beef cows	●	●	●		○	●	
0.103	Boars/Stags	●		■				
0.020	Bob veal	●				○	○	
0.456	Bulls	●		●		○	■	
1.412	Dairy cows	●				●	●	
0.167	Ducks	●			○			
3.243	Egg products		●					
0.079	Formula-fed veal	●		●		●		
0.001	Geese	●						
0.028	Goats	●		●				
0.012	Heavy calves	●		●			●	
7.108	Heifers	●						■
0.151	Lambs	●						
18.676	Market hogs	●	●	●	●	○		
0.730	Mature chickens	●				■		
0.007	Mature sheep	●	●	●				
0.055	Mature turkeys	●	●			○		
0.003	Non-Formula-fed veal	●				●		
0.001	Rabbits	●		■				
0.047	Roaster pigs	●		■	●	○		
0.937	Sows	●				○		
13.069	Steers	●	●	●				
44.971	Young chickens	●	●			○		
6.879	Young turkeys	●	■			○		

Table 2B *(continued)*
Production Classes Considered for each Veterinary Drug and Drug Class
2009 FSIS NRP, Domestic Scheduled Sampling

ERC	*Production Class*	*Veterinary Drug and Priority Rating*				
		β-Agonists	*Sulfonamides*	*Thyreostats*	*Trenbolone*	*Zeranol*
		2.8	12.0	4.9	12.0	12.0
1.792	Beef cows		●	■		
0.103	Boars/Stags					
0.020	Bob veal		●			
0.456	Bulls		●			
1.412	Dairy cows		●	●		
0.167	Ducks		●			
3.243	Egg products		●			
0.079	Formula-fed veal		●		●	●
0.001	Geese					
0.028	Goats	●	■			
0.012	Heavy calves		●			
7.108	Heifers		●			
0.151	Lambs					
18.676	Market hogs	■	●			
0.730	Mature chickens		●			
0.007	Mature sheep					
0.055	Mature turkeys					
0.003	non-Formula-fed veal	●	●		●	●
0.001	Rabbits					
0.047	Roaster pigs		●			
0.937	Sows		■			
13.069	Steers	●	●			
44.971	Young chickens		●			
6.879	Young turkeys		●			

● = Compound/Production Class Pairs included in the 2009 NRP.
○ = Compound/Production Class Pairs that are of regulatory concern, but are not included in the 2009 NRP because of laboratory resource constraints.
■ = Compound/Production Class Pairs that have been suspended from testing by FSIS in the 2009 NRP.

[i] ERC = Estimated relative percent of domestic consumption, calendar year 2007. 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 2007 Animal and Egg Production Data[A]
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Production Class	Number of Head Slaughtered [B]	Pounds per Animal (dressed weight) [C]	Total Pounds (dressed weight)	Percent Estimated Relative Consumption
Bulls	571,082	893	509,976,226	0.465
Beef cows	3,185,248	617	1,965,298,016	1.792
Dairy cows	2,510,041	617	1,548,695,297	1.412
Heifers	10,204,375	764	7,796,142,500	7.108
Steers	17,268,882	830	14,333,172,060	13.069
Bob veal	295,968	75	22,197,600	0.020
Formula-fed veal	417,291	207	86,379,237	0.079
Non-formula-fed veal	9,253	350	3,238,550	0.003
Heavy calves	31,784	400	12,713,600	0.012
SUBTOTAL, CATTLE	**34,493,924**		**26,277,813,086**	**23.959**
Market hogs	103,451,250	198	20,483,347,500	18.676
Roaster pigs	740,936	70	51,865,520	0.047
Boars/Stags	529,778	213	112,842,714	0.103
Sows	3,337,425	308	1,027,926,900	0.937
SUBTOTAL, SWINE	**108,059,389**		**21,675,982,634**	**19.763**
Sheep	111,711	67	7,484,637	0.007
Lambs	2,404,775	69	165,929,475	0.151
Goats	624,226	50	31,211,300	0.028
SUBTOTAL, OVINE	**3,140,712**		**204,625,412**	0.187
Horses	29,707	500	14,853,500	0.014
Bison	49,992	610	30,495,120	0.028
TOTAL, ALL LIVESTOCK	**145,773,724**		**48,203,769,752**	**43.951**
Young chickens	8,932,372,638	Not reported	49,322,557,571	44.971
Mature chickens	133,329,516	Not reported	800,510,101	0.730
Young turkeys	263,948,249	Not reported	7,544,857,588	6.879
Mature turkeys	2,266,716	Not reported	60,041,812	0.055
Ducks	27,332,307	Not reported	183,080,513	0.167
Geese	107,796	Not reported	1,493,664	0.001
Other fowl (includes squab)	1,677,281	Not reported	2,343,490	0.002
SUBTOTAL, POULTRY	**9,361,034,503**		**57,914,884,739**	**52.805**
Rabbits	265,281	Not reported	1,350,580	0.001
Egg products[D]	Not applicable	Not applicable	3,557,179,000[C]	3.243
GRAND TOTAL in POUNDS, ALL PRODUCTION CLASSES			**109,677,184,071**	**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 2007 Summary," National Agricultural Statistics Service (NASS), March 2008. 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 2007

Table 4
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2007(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Antibiotics (7-Plate Bioassay)	16.0	Young chickens	44.971	719.536	300
Sulfonamides	12.0	Young chickens	44.971	539.652	300
Antibiotics (7-Plate Bioassay)	16.0	Market hogs	18.676	298.816	300
Avermectins	14.0	Market hogs	18.676	261.464	300
Sulfonamides	12.0	Market hogs	18.676	224.112	300
Carbadox	11.3	Market hogs	18.676	210.105	300
Antibiotics (7-Plate Bioassay)	16.0	Steers	13.069	209.104	300
Arsenic	4.5	Young chickens	44.971	202.370	300
Avermectins	14.0	Steers	13.069	182.966	300
Sulfonamides	12.0	Steers	13.069	156.828	300
Antibiotics (7-Plate Bioassay)	16.0	Heifers	7.108	113.728	300
Antibiotics (7-Plate Bioassay)	16.0	Young turkeys	6.879	110.064	300
Sulfonamides	12.0	Heifers	7.108	85.296	300

Table 4 (*continued*)
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2007(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Arsenicals	4.5	Market hogs	18.676	84.042	300
Sulfonamides	12.0	Young turkeys	6.879	82.548	300
Sulfonamides	12.0	Egg products	3.243	38.916	300
ß -Agonists	2.8	Steers	13.069	36.593	300
Antibiotics (7-Plate Bioassay)	16.0	Beef cows	1.792	28.672	300
Avermectins	14.0	Beef cows	1.792	25.088	300
Antibiotics (7-Plate Bioassay)	16.0	Beef cows	1.792	22.592	300
Sulfonamides	12.0	Beef cows	1.792	21.504	300
Florfenicol	12.0	Dairy cows	1.412	16.944	300
Sulfonamides	12.0	Dairy cows	1.412	16.944	300
Antibiotics (7-Plate Bioassay)	16.0	Sows	0.937	14.992	300
Arsenic	4.5	Egg products	3.243	14.593	300
Flunixin	7.0	Beef cows	1.792	12.544	300

Table 4 (*continued*)
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2007(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Antibiotics (7-Plate Bioassay)	16.0	Mature chickens	0.73	11.680	300
Flunixin	7.0	Dairy cows	1.412	9.884	300
Sulfonamides	12	Mature chickens	0.73	8.76	300
Arsenic	4.5	Beef cows	1.792	8.064	300
Antibiotics (7-Plate Bioassay)	16.0	Bulls	0.465	7.44	300
Thyreostats	4.9	Dairy cows	1.412	6.919	300
Avermectins	14.0	Bulls	0.465	6.51	300
Sulfonamides	12	Bulls	0.465	5.58	300
Antibiotics (7-Plate Bioassay)	16.0	Ducks	0.167	2.672	300
Antibiotics (7-Plate Bioassay)	16.0	Lambs	0.151	2.416	300
Avermectins	14.0	Lambs	0.151	2.114	300
Sulfonamides	12	Ducks	0.167	2.004	300
Antibiotics (7-Plate Bioassay)	16.0	Boars	0.103	1.648	300

Table 4 (*continued*)
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2007(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Antibiotics (7-Plate Bioassay)	16.0	Formula fed veal	0.079	1.264	300
Avermectins	14.0	Formula fed veal	0.079	1.106	300
Florfenicol	12.0	Formula fed veal	0.079	0.948	300
Sulfonamides	12.0	Formula fed veal	0.079	0.948	300
Trenbolone	12.0	Formula fed veal	0.079	.0.948	300
Zeranol	12.0	Formula fed veal	0.079	0.948	300
Antibiotics (7-Plate Bioassay)	16.0	Mature turkeys	0.055	0.88	300
Antibiotics (7-Plate Bioassay)	16.0	Roaster pigs	0.047	0.752	300
Sulfonamides	12.0	Roaster pigs	0.047	0.564	300
Carbadox	11.25	Roaster pigs	0.047	0.529	300
Antibiotics (7-Plate Bioassay)	16.0	Goats	0.028	0.448	300
Avermectins	14.0	Goats	0.028	0.392	300
Antibiotics (7-Plate Bioassay)	16.0	Bob veal	0.02	0.32	300

Table 4 (*continued*)
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2007(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Arsenic	4.5	Mature turkeys	0.055	0.248	300
Sulfonamides	12.0	Bob veal	0.02	0.24	300
Antibiotics (7-Plate Bioassay)	16.0	Heavy calves	0.012	0.192	300
Avermectins	14	Heavy calves	0.012	0.168	300
Sulfonamides	12.0	Heavy calves	0.012	0.144	300
Antibiotics (7-Plate Bioassay)	16.0	Mature sheep	0.007	0.112	300
Avermectins	14	Mature sheep	0.007	0.098	300
Flunixin	7	Heavy calves	0.012	0.084	300
ß -Agonists	2.8	Goats	0.028	0.078	300
Antibiotics (7-Plate Bioassay)	16.0	Non-formula-fed veal	0.003	0.048	300
Avermectins	14	Non-formula-fed veal	0.003	0.042	300
Florfenicol	12	Non-formula-fed veal	0.003	0.144	300
Sulfonamides	12.0	Non-formula-fed veal	0.003	0.036	300

Table 4 (*continued*)
Veterinary Drug/Production Class Pairs,
Sorted by Sampling Priority Score
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Veterinary Drug or Drug Class	*Compound Priority Rating (P)*	*Production Class*	*Relative Percent Consumption in 2007(C)*	*Sampling Priority Score (P * C)*	*Unadjusted Number of Samples*
Trenbolone	12.0	Non-formula-fed veal	0.003	0.036	300
Zeranol	12.0	Non-formula-fed veal	0.003	0.036	300
Antibiotics (7-Plate Bioassay)	16.0	Geese	0.001	0.016	300
Antibiotics (7-Plate Bioassay)	16.0	Rabbits	0.001	0.016	300
ß-Agonists	2.8	Non-formula-fed veal	0.003	0.009	300

Table 5
Number of Scheduled Samples for Veterinary Drug/Production Class Pairs
2009 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	28.672	3260	0.09	N/A	300	300	300	300	300	300
Antibiotics[11]	Boars/stags	1.648	2108	0.28	N/A	300	300	300	300	300	300
Antibiotics[11]	Bob veal	0.320	3199	3.22	N/A	300	300	300	300	300	300
Antibiotics[11]	Bulls	7.440	1428	0	N/A	300	300	300	300	300	300
Antibiotics[11]	Dairy cows	22.592	4367	0.66	N/A	300	300	300	300	300	300
Antibiotics[11]	Ducks	2.672	1886	0	N/A	300	300	45	45	45	45
Antibiotics[11]	Formula-fed veal	1.264	4176	0.62	N/A	300	300	300	300	300	300
Antibiotics[11]	Geese	0.016	15	0	N/A	300	300	45	45	45	45
Antibiotics[11]	Goats	0.448	1537	0.07	N/A	300	300	300	90	90	90
Antibiotics[11]	Heavy calves	0.192	2029	0.79	<1	300	300	300	90	90	90
Antibiotics[11]	Heifers	113.728	4106	0.07	N/A	300	300	300	300	300	300
Antibiotics[11]	Lambs	2.416	2190	0.05	N/A	300	300	300	300	300	300
Antibiotics[11]	Market hogs	298.816	4468	0.16	N/A	300	300	300	300	300	300
Antibiotics[11]	Mature chickens	11.680	1751	0.06	N/A	300	300	300	300	300	300
Antibiotics[11]	Mature turkeys	0.880	1063	0	N/A	300	300	300	300	300	300
Antibiotics[11]	Non-formula-fed veal	0.048	1593	2.13	>1	300	300	300	135	135	135
Antibiotics[11]	Rabbits	0.016	765	3.79	N/A	300	300	45	45	45	45
Antibiotics[11]	Roaster pigs	0.752	1116	0.63	N/A	300	300	300	300	300	300
Antibiotics[11]	Sheep	0.112	1089	0	N/A	300	300	300	300	300	300
Antibiotics[11]	Sows	14.992	3012	0.46	N/A	300	300	300	300	300	300
Antibiotics[11]	Steers	209.104	2666	0.04	N/A	300	300	300	300	300	300
Antibiotics[11]	Young chickens	719.536	3528	0.06	N/A	300	300	300	300	300	300
Antibiotics[11]	Young turkeys	110.064	3230	0.03	N/A	300	300	300	300	300	300
Totals						**6900**					**5,550**
Arsenicals	Beef cows	8.064	1330	0	N/A	300	300	300	300	300	300
Arsenicals	Egg products	14.594	1844	0	N/A	300	300	300	300	300	300
Arsenicals	Market hogs	84.042	2413	0	N/A	300	300	300	300	300	300
Arsenicals	Mature turkeys	0.2475	389	0	N/A	300	300	300	300	300	300
Arsenicals	Young chickens	202.370	6630	0.06	N/A	300	300	300	300	300	300
Totals						**1,500**					**1,500**
Avermectins	Beef cows	25.088	2060	0.10	N/A	300	300	300	300	300	300
Avermectins	Bulls	6.51	2966	0.34	<1	300	230	230	230	230	230
Avermectins	Formula fed veal	1.106	1299	0	N/A	300	300	300	300	300	300
Avermectins	Goats	0.392	2799	1.8	>1	300	300	300	135	135	135
Avermectins	Heavy calves	0.168	1756	0.51	<1	300	300	300	135	135	135

Table 5 *(continued)*
Number of Scheduled Samples for Veterinary Drug/Production Class Pairs
2009 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]
Avermectins	Lambs	2.114	2462	0.20	N/A	300	300	300	300	300	300
Avermectins	Market hogs	261.464	2144	0	N/A	300	300	300	300	300	300
Avermectins	Mature sheep	0.098	1130	0.35	N/A	300	300	300	300	300	300
Avermectins	Non-formula-fed veal	0.042	1184	0.42	<1	300	300	300	135	135	135
Avermectins	Steers	182.966	4191	0.05	<1	300	300	300	230	230	230
Totals						**3,000**					**2,365**
ß-Agonists	Goats	0.078	0	0	N/A	300	300	300	90	90	90
ß-Agonists	Non formula fed veal	0.008	762	0.1	N/A	300	300	300	300	300	300
ß-Agonists	Steers	36.593	2274	0	N/A	300	300	300	300	300	300
Totals						**900**					**690**
Carbadox	Market hogs	210.105	876	0	N/A	300	300	300	230	230	230
Carbadox	Roaster pigs	0.529	820	0.49	<1	300	300	300	230	230	230
Totals						**600**					**460**
Chloramphenicol	Bob veal	N/A	0	0	N/A	300	300	300	300	300	300
Chloramphenicol	Dairy cows	N/A	1647	0	N/A	300	300	300	300	300	300
Chloramphenicol	Mature turkeys	N/A	204	0	N/A	300	300	300	300	300	300
Chloramphenicol	Steers	N/A	0	0	N/A	300	300	300	300	300	300
Chloramphenicol	Young chickens	N/A	1067	0	N/A	300	300	300	300	300	300
Totals						**1,500**					**1,500**
Florfenicol	Dairy cows	16.944	850	0.118	N/A	300	300	300	300	300	300
Florfenicol	Formula fed veal	0.948	517	0.19	<1	300	300	300	230	230	230
Florfenicol	Non formula fed veal	0.036	454	2.42	>1	300	300	300	135	135	135
Totals						**900**					**665**
Flunixin	Beef cows	12.544	306	0	N/A	300	300	300	300	300	300
Flunixin	Dairy cows	9.884	1502	0.93	N/A	300	300	300	300	300	300
Flunixin	Heavy calves	0.084	214	0	N/A	300	300	300	300	300	300
Totals						**900**					**900**
Nitrofurans	Dairy cows	N/A	538	0.37	N/A	300	300	300	300	300	300
Nitrofurans	Market hogs	N/A	302	0	N/A	300	300	300	300	300	300
Nitrofurans	Sows	N/A	325	0	N/A	300	300	300	300	300	300
Totals						**900**					**900**

Table 5 *(continued)*
Number of Scheduled Samples for Veterinary Drug/Production Class Pairs
2009 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]
Nitroimidazoles	Young chickens	N/A	306	0	N/A	300	300	300	300	300	300
Nitroimidazoles	Young turkeys	N/A	588	0	N/A	300	300	300	300	300	300
Totals						**600**					**600**
Sulfonamides	Beef cows	21.504	2974	0.10	N/A	300	300	300	300	300	300
Sulfonamides	Bob veal	0.24	3355	0.72	<1	300	135	135	135	135	135
Sulfonamides	Bulls	5.580	2967	0.10	N/A	300	300	300	300	300	300
Sulfonamides	Dairy cows	16.944	2805	0.43	**<1**	300	300	300	135	135	135
Sulfonamides	Ducks	2.004	1331	0	N/A	300	300	300	300	300	300
Sulfonamides	Egg products	38.916	2000	0	N/A	300	300	300	300	300	300
Sulfonamides	Formula- fed veal	0.948	2291	0.31	N/A	300	300	300	300	300	300
Sulfonamides	Heavy calves	0.144	2112	0.24	**<1**	300	300	300	90	90	90
Sulfonamides	Heifers	85.296	1976	0	N/A	300	300	300	300	300	300
Sulfonamides	Market hogs	224.112	4306	0.51	<1	300	300	300	300	300	300
Sulfonamides	Mature chickens	8.760	1217	0	N/A	300	300	300	300	300	300
Sulfonamides	Non-formula-fed veal	0.036	1703	0.47	<1	300	300	300	135	135	135
Sulfonamides	Roaster pigs	0.564	1355	1.55	**>1**	300	300	300	135	135	135
Sulfonamides	Steers	156.828	3620	0.17	<1	300	300	300	230	230	230
Sulfonamides	Young chickens	539.652	2360	0.04	N/A	300	300	300	300	300	300
Sulfonamides	Young turkeys	82.548	2334	0.13	<1	300	300	300	230	230	230
Totals						**4,800**					**3,625**
Thyreostats	Dairy cows	6.919	0	0	N/A	300	300	300	300	300	300
Totals						**300**					**300**
Trenbolone	Formula- fed veal	0.948	1657	0	N/A	300	300	300	300	300	300
Trenbolone	Non-formula-fed veal	0.036	174	1.15	N/A	300	300	300	300	300	300
Totals						**600**					**600**
Zeranol	Formula- fed veal	0.948	2246	2	N/A	300	300	300	90	90	90
Zeranol	Non-formula-fed veal	0.036	0	0	N/A	300	300	300	90	90	90
Totals						**600**					**180**

Table 5 *(continued)*
Number of Scheduled Samples for Veterinary Drug/Production Class Pairs
2009 NRP, Domestic Scheduled Sampling

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[1] For an explanation of this score, see Table 4.
[2] Number of Samples (1997-2006) analyzed by the FSIS Scheduled Sampling Plan.
[3] The percent of samples with residue concentrations exceeding the tolerance or action level (or, for a drug whose use was not permitted in the production class in which it was detected, the percent of samples with any detectable residue), for the 10- year period, 1998-2007.
[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 2007 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.
[6] If the violation rate for a compound-production class pair was determined to be 0% for the 3- year period (2005-2007), 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

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

II. Prioritizing Candidate Drugs

FSIS selects compounds and compound classes from the list of ranked veterinary drugs. The selection is based purely on their relative public health concern. FSIS and SAT decided that those compounds and compound classes that are a potential public health concern justify their inclusion in the 2009 NRP.

Once the high-priority compounds and compound classes were identified, FSIS applied other practical considerations to determine the compounds FSIS should sample. The principal consideration was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Where the laboratory resources were limited, FSIS decided that more resources should be allocated to test domestic products because imported products have been inspected previously by the country of origination. Based on these considerations, the following compounds are included in the 2009 FSIS 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)

[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.

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)
- Hormones, xenobiotics (trenbolone, zeranol)
- Nitromidazoles (classification: antiprotozoals; compounds in FSIS MRM: dimetridazole, ipronidazole)
- 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)

Drugs Banned from Extralabel use under AMDUCA

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

- Chloramphenicol (classification: antibiotic; AMDUCA prohibited)

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

SAT participants from the FDA identified, for each of the drugs and drug classes to be included in the 2009 NRP, production classes in which they had a concern. The results are presented in Table 6, *Product Classes Considered for Each Drug/Drug Class.* Compound/product class pairs included in the 2009 NRP are designated by a "●." Those compound/product class pairs that are of potential public health concern, but that are not included in the 2009 NRP because of laboratory resource constraints, are marked with a "○."

IV. Allocation of Sampling Resources

Egg Products

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

selection of one reinspection out of eight product lots from each foreign establishment. This reinspection rate continues as long as the product is in compliance.

Animal Product Classes

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

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

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

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

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

FSIS, in its IRISP, will not test (1) processed products from eligible foreign countries that also ship fresh products to the United States, and (2) processed products from countries that source all their raw materials from other foreign countries that are eligible to ship fresh product and are actively exporting to the United States. Processed beef from Australia, Canada, Mexico, New Zealand, Uruguay, and Costa Rica; combination products (varied) and veal from Canada; lamb and mutton from Australia, Canada, and New Zealand; pork from Canada, Denmark, Mexico, and Netherlands; chicken processed from Canada and Mexico; turkey from Canada; and other fowl from Canada and France will not be sampled because the raw materials used are from countries that are eligible to ship raw products to the U.S.

If a product class represents less than one percent (by weight) of total combined U.S. imports of meat, poultry, and egg products, then the total number of samples analyzed for any compound or compound class is eight times the number of countries from which that product is imported. For example, if veal fresh is imported from only three countries and the amount imported is 0.50 % relative to the total U.S. import, 24 samples (3 countries X 8 samples) of veal fresh would be taken for each analysis, eight from each country.

The adjusted number of samples is listed in Table 10. The final number of samples for a compound/product class is obtained after the allocation of samples among different countries is

completed. The final number of samples is listed in Table 10. The numbers in the table may vary slightly because of the rounding upwards or downwards of the samples.

Allocation of Samples Among Different Countries

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

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

If the amount of an import product class is less than one percent, eight samples per compound/compound class are taken from each country. The relative amounts of horse, fresh, chicken, processed; goat, fresh and processed, turkey fresh and processed, other fowl fresh, varied combination fresh and processed, are less than one percent. In addition, if a country is exporting either fresh and processed products or sources all their raw materials from eligible sources then no residue samples are scheduled for processed products from that country. The unadjusted numbers of samples are listed in the columns labeled "Unadjusted Number of Samples" in Tables 11-25. The adjusted numbers of samples per country/per product class is listed in the column labeled "Final Number of Samples" in Tables 11-25.

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, *Estimated Annual Amount (in pounds) of Product Imported/Country*, lists the amount of product imported from each country. The percent of a product class imported from a country is calculated as follows and is in Table 9, *Relative Annual Amount (%) of Product Imported/Country.*

$$\text{Percent Product Class Imported per Country } (P_{C/C}) = \frac{\text{Amount of Product Class from Country}}{\text{Total Amount of Product Class}} \times 100 \qquad \text{Equation 9}$$

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

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

This is indicated in the column labeled "Unadjusted Number of Samples ($U_{C/S}$)" in Tables 11-25.

After determining the number of samples required from each country, each country with less than eight samples is assigned a minimum of eight samples. This is indicated in the column labeled "Adjustment #1" in Tables 11-25. The results of this adjustment are in the column labeled "Initial Adj #." If the total number of samples for a compound/product class resulted in more than the total number of samples allocated to that compound/product class pair, then a second adjustment had to be made, so that the total number of samples would be within an allocated number. This adjustment is made only to those countries from which greater than eight samples are to be taken. This adjustment is accomplished using the following equation:

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

where,

$N = (N_1) - (N_T)$
N_1 = Total Number of Samples after Adjustment #1
N_T = Total Number of Samples Allocated
$P_{T/C}$ = Total Percent of Product Class from the Countries That Had Greater Than Eight Samples
$P_{C/C}$ = Percent Product Class Imported Per Country
$U_{C/S}$ = Unadjusted Number of Samples

If a country is exporting both fresh and processed products or sources all their raw materials from eligible sources, then no residue samples will be processed from that country. The final numbers of products sampled are indicated in Tables 11-26 in the column labeled "Final Adj.#."

Notes:

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

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

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

DRUG→	AB	AVM	AS	ß-A	CHMP	FLNX	FLF	NTM	SLF	THY	ZRL
Beef, fresh	●	●			●	●	●		●		
Beef, processed	○	●			○	○			●		
Horse, fresh	●								●		
Chicken, fresh	●		●		●			●	○		
Chicken, processed	○	○	●		○			○	○		
Goat, fresh	○	●									
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 2009 FSIS IRSP
○ = Compound/product class pair of regulatory concern but not included in the plan because of resources
AB=Antibiotics; AVM=Avermectins, AS=Arsenicals; ß-A= beta agonist; CHMP=Chloramphenicol; RCT=Ractopamine; THY=Thyreostats; NTF= Nitrofurans; NTM=Nitroimidazoles; SLF=Sulfonamides; ZRL=Zeralenol

Table 7
Estimated Annual Amount of Product Imported
2009 FSIS NRP, Import Reinspection Sampling Plan

PRODUCT	PRODUCT IMPORTED IN POUNDS	% PRODUCT IMPORTED
Beef, fresh	2,059,003,355	54.266%
Beef, processed	233,257,410	6.148%
Horse, fresh	623,773	0.016%
Pork fresh	821,951,938	21.663%
Pork, processed	177,833,013	4.687%
Veal, fresh	60,179,533	1.586%
Veal, processed	19,219	0.001%
Lamb/Mutton, fresh	182,963,617	4.822%
Lamb/Mutton, processed	523,626	0.014%
Goat, fresh	24,434,764	0.644%
Goat, processed	-	0.000%
Turkey, fresh	16,731,818	0.441%
Ratite, fresh	314,138	0.008%
Chicken, fresh	87,911,248	2.317%
Chicken, processed	93,658,586	2.468%
Turkey, processed	14,225,708	0.375%
Other Fowl, fresh	4,972,580	0.131%
Other Fowl, processed	113,757	0.003%
Varied combination, fresh	31,856	0.001%
Varied combination, processed	15,535,214	0.409%
Guineas/squabs,fresh	5,858	0.000%
Total lbs/country	3,794,291,011	100.000%

Table 8
Estimated (lbs) Annual Amount of Product Imported/Country
2009 FSIS NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Argentina	Australia	Brazil	Canada	Chile	Costa Rica
Beef, fresh		661,925,554		628,240,652	2,505,723	13,800,322
Beef, processed	38,261,167	2,618,120	153,274,745	22,418,491		29
Horse, fresh				623,773		
Pork, fresh		320,042		712,956,623	3,707,802	
Pork, processed				118,471,638		
Veal, fresh		11,937,093		27,382,705		
Veal, processed				19,219		
Lamb/Mutton, fresh		135,483,107		427,748		
Lamb/Mutton, processed		207,735		123,108		
Goat, fresh		23,985,200				
Turkey, fresh				16,731,818		
Ratite, fresh		281,073				
Chicken, fresh				87,667,200		
Chicken, processed				76,592,394		
Turkey, processed				3,390,327		
Other Fowl, fresh				4,775,315		
Other Fowl, processed				63,002		
Varied combination, fresh				31,856		
Varied combination, processed		56,981		8,697,954		
Guineas/squabs, fresh				5,858		
Total lbs/country	38,261,167	836,814,905	153,274,745	1,708,619,681	6,213,525	13,800,351

Table 8 (*continued)*
Estimated (lbs) Annual Amount of Product Imported/Country
2009 FSIS NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Croatia	Denmark	Finland	France	Germany
Beef, fresh					
Beef, processed					
Horse, fresh					
Pork, fresh		87,377,718	2,425,940		
Pork, processed	405,087	11,356,392			726,591
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				197,265	
Other Fowl, processed				50,755	
Varied combination, fresh					
Varied combination, processed				1,461	
Guineas/squabs, fresh					
Total lbs/country	405,087	98,734,110	2,425,940	249,481	726,591

Table 8 (*continued)*
Estimated (lbs) Annual Amount of Product Imported/Country
2009 FSIS NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Honduras	Hungary	Iceland	Ireland	Israel	Italy
Beef, fresh	294,000					
Beef, processed						
Horse, fresh						
Pork, fresh				4,711,048		
Pork, processed		835,159				8,876,342
Veal, fresh						
Veal, processed						
Lamb/Mutton, fresh			93,697			
Lamb/Mutton, processed						
Goat, fresh						
Turkey, fresh						
Ratite, fresh						
Chicken, fresh						
Chicken, processed					833,221	
Turkey, processed					1,381,182	
Other Fowl, fresh						
Other Fowl, processed						
Varied combination, fresh						
Varied combination, processed						
Guineas/squabs, fresh						
Total lbs/country	294,000	835,159	93,697	4,711,048	2,214,403	8,876,342

Table 8 (*continued)*
Estimated (lbs) Annual Amount of Product Imported/Country
2009 FSIS NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Japan	Mexico	Netherlands	New Zealand	Nicaragua	North Ireland
Beef, fresh	285,901	36,090,428		354,877,895	70,796,160	
Beef, processed		3,644,635		2,661,839		
Horse, fresh						
Pork, fresh		4,162,465	1,454,654	66,028		2,500,612
Pork, processed		14,710,334	400,087			
Veal, fresh				20,859,735		
Veal, processed						
Lamb/Mutton, fresh		87,629		46,871,436		
Lamb/Mutton, processed				192,783		
Goat, fresh		14,419		435,145		
Turkey, fresh						
Ratite, fresh				33,065		
Chicken, fresh		244,048				
Chicken, processed		16,232,971				
Turkey, processed		9,454,199				
Other Fowl, fresh						
Other Fowl, processed						
Varied combination, fresh						
Varied combination, processed		6,775,368		3,450		
Guineas/squabs, fresh						
Total lbs/country	285,901	91,416,496	1,854,741	426,001,376	70,796,160	2,500,612

Table 8 (*continued)*
Estimated (lbs) Annual Amount of Product Imported/Country
2009 FSIS NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Poland	San Marino	Spain	Sweden	UK	Uruguay
Beef, fresh						290,186,720
Beef, processed						10,378,384
Horse, fresh						
Pork, fresh				1,299,530	969,476	
Pork, processed	20,475,259	1,918	1,574,206			
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	20,475,259	1,918	1,574,206	1,299,530	969,476	300,565,104

Table 9
Relative Annual Amount (%) of Product Imported/Country
2009 FSIS NRP, Import Reinspection Sampling Plan

PRODUCTION CLASS	Argentina	Australia	Brazil	Canada	Chile	Costa Rica
Beef, fresh	-	32.15	-	30.51	0.12	0.67
Beef, processed	16.40	1.12	65.71	9.61	-	0.00
Horse, fresh	-	-		100.00	-	-
Pork, fresh	-	0.04	-	86.74	0.45	-
Pork, processed	-	-	-	66.62	-	-
Veal, fresh	-	19.84	-	45.50	-	-
Veal, processed	-	-	-	100.00	-	-
Lamb/Mutton, fresh	-	74.05	-	0.23	-	-
Lamb/Mutton, processed	-	39.67	-	23.51	-	-
Goat, fresh	-	98.16	-	-	-	-
Goat, processed	-	-		-	-	-
Turkey, fresh	-	-	-	100.00	-	-
Ratite, fresh	-	89.47	-	-	-	-
Chicken, fresh	-	-	-	99.72	-	-
Chicken, processed	-	-	-	81.78	-	-
Turkey, processed	-	-	-	23.83	-	-
Other Fowl, fresh	-	-	-	96.03	-	-
Other Fowl, processed	-	-	-	55.38	-	-
Varied combination, fresh	-	-	-	100.00	-	-
Varied combination, processed	-	0.37	-	55.99	-	-
Guineas/squabs, fresh	-	-	-	100.00	-	-

Table 9 *(continued)*
Relative Annual Amount (%) of Product Imported/Country
2009 FSIS NRP, Import Reinspection Sampling Plan

Production Class	Croatia	Denmark	Finland	France	Germany	Honduras
Beef, fresh	-	-	-	-	-	0.01
Beef, processed	-	-	-	-	-	-
Horse, fresh	-	-	-	-	-	-
Pork, fresh	-	10.63	0.30	-	-	-
Pork, processed	0.23	6.39	-	-	0.41	-
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	-	-	-	3.97	-	-
Other Fowl, processed	-	-	-	44.62	-	-
Varied combination, fresh	-	-	-	-	-	-
Varied combination, processed	-	-	-	0.01	-	-
Guineas/squabs, fresh	-	-	-	-	-	-

Table 9 *(continued)*
Relative Annual Amount (%) of Product Imported/Country
2009 FSIS NRP, Import Reinspection Sampling Plan

Production Class	Hungary	Iceland	Ireland	Israel	Italy	Japan	Mexico
Beef, fresh	-	-	-	-	-	0.01	1.75
Beef, processed	-	-	-	-	-	-	1.56
Horse, fresh	-	-	-	-	-	-	-
Pork, fresh	-	-	0.57	-	-	-	0.51
Pork, processed	0.47	-	-	-	4.99	-	8.27
Veal, fresh	-	-	-	-	-	-	-
Veal, processed	-	-	-	-	-	-	-
Lamb/Mutton, fresh	-	0.05	-	-	-	-	0.05
Lamb/Mutton, processed	-	-	-	-	-	-	-
Goat, fresh	-	-	-	-	-	-	0.06
Goat, processed	-	-	-	-	-	-	-
Turkey, fresh	-	-	-	-	-	-	-
Ratite, fresh	-	-	-	-	-	-	-
Chicken, fresh	-	-	-	-	-	-	0.28
Chicken, processed	-	-	-	0.89	-	-	17.33
Turkey, processed	-	-	-	9.71	-	-	66.46
Other Fowl, fresh	-	-	-	-	-	-	-
Other Fowl, processed	-	-	-	-	-	-	-
Varied combination, fresh	-	-	-	-	-	-	-
Varied combination, processed	-	-	-	-	-	-	43.61
Guineas/squabs, fresh	-	-	-	-	-	-	-

Table 9 *(continued)*
Relative Annual Amount (%) of Product Imported/Country
2009 FSIS NRP, Import Reinspection Sampling Plan

Production Class	Netherlands	New Zealand	Nicaragua	North Ireland	Poland
Beef, fresh	-	17.24	3.44	-	-
Beef, processed	-	1.14	-	-	-
Horse, fresh	-	-	-	-	-
Pork, fresh	0.18	0.01	-	0.30	-
Pork, processed	0.22	-	-	-	11.51
Veal, fresh	-	34.66	-	-	-
Veal, processed	-	-	-	-	-
Lamb/Mutton, fresh	-	25.62	-	-	-
Lamb/Mutton, processed	-	36.82	-	-	-
Goat, fresh	-	1.78	-	-	-
Goat, processed	-	-	-	-	-
Turkey, fresh	-	-	-	-	-
Ratite, fresh	-	10.53	-	-	-
Chicken, fresh	-	-	-	-	-
Chicken, processed	-	-	-	-	-
Turkey, processed	-	-	-	-	-
Other Fowl, fresh	-	-	-	-	-
Other Fowl, processed	-	-	-	-	-
Varied combination, fresh	-	-	-	-	-
Varied combination, processed	-	0.02	-	-	-
Guineas/squabs, fresh	-	-	-	-	-

Table 9 *(continued)*
Relative Annual Amount (%) of Product Imported/Country
2009 FSIS NRP, Import Reinspection Sampling Plan

Production Class	San Marino	Spain	Sweden	UK	Uruguay
Beef, fresh	-	-	-	-	14.09
Beef, processed	-	-	-	-	4.45
Horse, fresh	-	-	-	-	-
Pork, fresh	-	-	0.16	0.12	-
Pork, processed	0.00	0.89	-	-	-
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/Product Class
2009 FSIS NRP, Import Reinspection Sampling Plan

Number Countries	Product Class	Drug	Product	Drug Score	RSP*	Number samples	Unadjusted	Final Adjustment
10	Beef, fresh	Antibiotics	54.266%	16	868	302	300	302
2	Chicken, fresh	Antibiotics	2.317%	16	37	90	90	90
1	Horse, fresh	Antibiotics	0.016%	16	0	8	8	8
2	Other fowl, fresh	Antibiotics	0.131%	16	2.097	16	16	16
12	Pork, fresh	Antibiotics	21.663%	16	347	231	231	231
1	Turkey, fresh	Antibiotics	0.441%	16	7	8	8	8
1	Varied combination, fresh	Antibiotics	2.317%	16	37	8	8	8
3	Veal, fresh	Antibiotics	1.586%	16	25	90	90	90
2	Chicken, fresh	Arsenic	2.317%	4.5	10	90	90	90
3	Chicken, processed	Arsenic	2.468%	4.5	11	8	8	8
12	Pork, fresh	Arsenic	21.663%	4.5	97	103	103	103
1	Turkey, fresh	Arsenic	54.266%	4.5	244	8	8	8
3	Turkey, processed	Arsenic	0.375%	4.5	2	16	24	16
10	Beef, fresh	Avermectins	54.266%	14	760	302	302	302
7	Beef, processed	Avermectins	6.148%	14	86	75	75	75
3	Goat, fresh	Avermectins	0.644%	14	9	24	24	24
5	Lamb/Mutton, fresh	Avermectins	4.822%	14	68	82	82	82
3	Veal, fresh	Avermectins	1.586%	14	22	90	90	90
12	Pork, fresh	β-agonist	21.663%	2.8	61	96	96	96
3	Veal, fresh	β-agonist	1.586%	2.8	4	90	90	90
10	Beef, fresh	Chloramphenicol	54.266%	0	0	96	96	96
2	Chicken, fresh	Chloramphenicol	2.317%	0	0	90	90	90
1	Turkey, fresh	Chloramphenicol	0.441%	0	0	8	8	8
3	Veal, fresh	Chloramphenicol	1.586%	0	0	90	90	90
10	Beef, fresh	Florfenicol	54.266%	12	0	80	80	80
10	Beef, fresh	Flunixin	54.266%	7	380	96	96	96
2	Chicken, fresh	Nitroimidazole	2.317%	0	0	90	98	90
10	Beef, fresh	Sulfonamides	54.266%	12	651	302	302	302
7	Beef, processed	Sulfonamides	6.148%	12	74	75	75	75
1	Horse, fresh	Sulfonamides	0.016%	12	0	8	8	8
12	Pork, fresh	Sulfonamides	21.663%	12	260	231	230	231
11	Pork, processed	Sulfonamides	4.687%	12	56	56	56	56
1	Turkey, fresh	Sulfonamides	0.001%	12	0	8	8	8
3	Turkey, processed	Sulfonamides	0.375%	12	5	16	24	16
1	Varied combination, fresh	Sulfonamides	1.586%	12	0	8	8	8
5	Varied combination, processed	Sulfonamides	0.001%	12	0	32	40	32
3	Veal, fresh	Sulfonamides	1.586%	12	19	90	90	90
3	Veal, fresh	Thyreostats	1.586%	4.9	8	90	90	90
3	Veal, fresh	Zeranol	1.586%	12	19	90	90	90
Total								**3293**

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/Product Class-Pork, Processed
2009 FSIS NRP, Import Reinspection Sampling Plan

Pork Processed Sulfonamides	% Product Class Imported per Country (Pc/c)	Unadjusted № of Samples per Country=56*(Pc/c)/100	Adjust #1	Initial Adjustment	Final Adjustment
Canada	66.620	37.307	*	*	*
Croatia	0.228	0.128	1	8	8
Denmark	6.386	3.576	*	*	*
Germany	0.409	0.229	1	8	8
Hungary	0.470	0.263	1	8	8
Italy	4.991	2.795	3	8	8
Mexico	8.272	4.632	*	*	*
Netherlands	0.225	0.126	*	*	*
Poland	11.514	6.448	6	8	8
San Marino	0.001	0.001	1	8	8
Spain	0.885	0.496	1	8	8
Total	**100.00**	**56**	**14**	**56**	**56**

***Country is exporting fresh pork**

Table 12
Number of Samples/Product Class-Goat, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Goat Fresh/Avermectins	% Product Class Imported per Country (Pc/c)	Unadjusted Number	Final Adjustment
Australia	98.2	8.00	8
Mexico	0.06	8.00	8
New Zealand	1.78	8.00	8
Total	**100.04**	**24**	**24**

Table 13
Number of Samples/Product Class-Turkey, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

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

Table 14
Number of Samples/Product Class-Turkey, Processed
2009 FSIS NRP, Import Reinspection Sampling Plan

Turkey Processed/Arsenicals	% Product Class Imported per Country (Pc/c)	Unadjusted Number	Final Adjustment
Canada	23.8	8	0*
Israel	9.7	8	8
Mexico	66.5	8	8
Total	**100**	**24**	**16**
Turkey Processed/Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted Number**	**Final Adjustment**
Canada	23.8	8	0*
Israel	9.7	8	8
Mexico	66.5	8	8
Total	**100**	**24**	**16**

Table 15
Number of Samples/Product Class-Chicken, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Chicken Fresh Antibiotics	% Product Class Imported per Country (Pc/c)	Unadjusted № of Samples per Country=90*(Pc/c)/100	Adjust #1	Initial Adjustment	Final Adjustment
Canada	99.7	89.73	90	90	82
Mexico	0.3	0.27	1	8	8
Total	**100**	**90**	**91**	**98**	**90**
Chicken Fresh Arsenicals	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Final Adjustment**
Canada	99.7	89.73	90	90	82
Mexico	0.3	0.27	8	8	8
Total	**100**	**90**	**98**	**98**	**90**
Chicken Fresh Chloramphenicol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Final Adjustment**
Canada	99.7	89.73	90	90	82
Mexico	0.3	0.27	8	8	8
Total	**100**	**90**	**98**	**98**	**90**
Chicken Fresh Nitroimidazole	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=90*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Final Adjustment**
Canada	99.7	89.73	90	90	82
Mexico	0.3	0.27	8	8	8
Total	**100**	**90**	**98**	**98**	**90**

Table 16
Number of Samples/Product Class-Varied Combination, Fresh
2009 FSIS 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/Product Class-Varied Combination, Processed
2009 FSIS NRP, Import Reinspection Sampling Plan

Varied combination, Processed Sulfonamides	% Product Class Imported per Country (Pc/c)	Unadjusted Number	Adjust # 1	Final Adjustment
Australia	0.37	8	8	8
Canada	55.99	8	0	0*
France	0.009	8	8	8
Mexico	43.61	8	8	8
New Zealand	0.022	8	8	8
Total	**100.001**	**40**	**32**	**32**

***Country is exporting fresh pork**

Table 18
Number of Samples/Product Class-Beef, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Beef Fresh Antibiotics	% Product Class Imported per Country (Pc/c)	Unadjusted № of Samples per Country=302*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Australia	32.15	97.09	97	97	87	87
Canada	30.51	92.15	92	92	82	82
Chile	0.12	0.37	1	8	0	8
Costa Rica	0.67	2.02	2	8	2	8
Honduras	0.01	0.04	1	8	0	8
Japan	0.01	0.04	1	8	0	8
Mexico	1.75	5.29	5	8	5	8
New Zealand	17.24	52.05	52	52	47	47
Nicaragua	3.44	10.38	10	10	9	8
Uruguay	14.09	42.56	43	43	38	38
Total	**100**	**302.00**	**304**	**334**	**270**	**302**
Beef Fresh Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=302*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	32.15	97.09	97	97	87	87
Canada	30.51	92.15	92	92	82	82
Chile	0.12	0.37	1	8	0	8
Costa Rica	0.67	2.02	2	8	2	8
Honduras	0.01	0.04	1	8	0	8
Japan	0.01	0.04	1	8	0	8
Mexico	1.75	5.29	5	8	5	8
New Zealand	17.24	52.05	52	52	47	47
Nicaragua	3.44	10.38	10	10	9	8
Uruguay	14.09	42.56	43	43	38	38
Total	**100**	**302.00**	**304**	**334**	**270**	**302**

Table 18 (*Continued*)
Number of Samples/Product Class-Beef, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Beef Fresh Avermectins	% Product Class Imported per Country (Pc/c)	Unadjusted № of Samples per Country=302*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Australia	32.15	97.09	97	97	87	87
Canada	30.51	92.15	92	92	82	82
Chile	0.12	0.37	1	8	0	8
Costa Rica	0.67	2.02	2	8	2	8
Honduras	0.01	0.04	1	8	0	8
Japan	0.01	0.04	1	8	0	8
Mexico	1.75	5.29	5	8	5	8
New Zealand	17.24	52.05	52	52	47	47
Nicaragua	3.44	10.38	10	10	9	8
Uruguay	14.09	42.56	43	43	38	38
Total	**100**	**302.00**	**304**	**334**	**270**	**302**
Beef Fresh Chloramphenicol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=96*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	32.15	30.86	31	31	18	16
Canada	30.51	29.29	29	29	17	16
Chile	0.12	0.12	1	8	0	8
Costa Rica	0.67	0.64	1	8	0	8
Honduras	0.01	0.01	1	8	0	8
Japan	0.01	0.01	1	8	0	8
Mexico	1.75	1.68	2	8	1	8
New Zealand	17.24	16.55	17	17	9	8
Nicaragua	3.44	3.30	3	8	2	8
Uruguay	14.09	13.53	14	14	8	8
Total	**100**	**96.00**	**100**	**139**	**55**	**96**
Beef Fresh Florofenicol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=80*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	32.15	25.72	26	26	12	8
Canada	30.51	24.41	24	24	11	8
Chile	0.12	0.10	1	8	0	8
Costa Rica	0.67	0.54	1	8	0	8
Honduras	0.01	0.01	1	8	0	8
Japan	0.01	0.01	1	8	0	8
Mexico	1.75	1.40	1	8	1	8
New Zealand	17.24	13.79	14	14	6	8
Nicaragua	3.44	2.75	3	8	1	8
Uruguay	14.09	11.27	11	11	5	8
Total	**100**	**80.00**	**83**	**123**	**37**	**80**
Beef Fresh/Flunixin	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=96*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	32.15	30.86	31	31	18	16
Canada	30.51	29.29	29	29	17	16
Chile	0.12	0.12	1	8	0	8
Costa Rica	0.67	0.64	1	8	0	8
Honduras	0.01	0.01	1	8	0	8
Japan	0.01	0.01	1	8	0	8
Mexico	1.75	1.68	2	8	1	8
New Zealand	17.24	16.55	17	17	9	8
Nicaragua	3.44	3.30	3	8	2	8
Uruguay	14.09	13.53	14	14	8	8
Total	**100**	**96.00**	**100**	**139**	**55**	**96**

Table 19
Number of Samples/Product Class-Beef Processed
2009 FSIS NRP, Import Reinspection Sampling Plan

Beef Processed Sulfonamides	% Product Class Imported per Country (Pc/c)	Unadjusted № of Samples per Country=75*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Argentina	16.40	12.30	12	12	7	15
Australia	1.12	0.84	1	8	0	0*
Brazil	65.71	49.28	49	49	28	60
Canada	9.61	7.21	7	8	4	0*
Mexico	1.56	1.17	1	8	1	0*
New Zealand	1.14	0.86	1	8	0	0*
Uruguay	4.45	3.34	3	8	2	0*
Total	**99.99**	**74.99**	**74**	**101**	**42**	**75**
Beef Processed Avermectins	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=75*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Argentina	16.40	12.30	12	12	7	15
Australia	1.12	0.84	1	8	0	0*
Brazil	65.71	49.28	49	49	28	60
Canada	9.61	7.21	7	9	4	0*
Mexico	1.56	1.17	1	8	1	0*
New Zealand	1.14	0.86	1	8	0	0*
Uruguay	4.45	3.34	3	8	2	0*
Total	**99.99**	**74.99**	**74**	**102**	**42**	**75**

* Country is exporting fresh beef

Table 20
Number of Samples/Product Class-Pork, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Pork Fresh Antibiotics	% Product Class Imported per Country (Pc/c)	Unadjusted № of Samples per Country=231*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Australia	0.04	0.09	1	8	0.06	8
Canada	86.74	200.37	200	200	138	136
Chile	0.45	1.04	1	8	0.72	8
Denmark	10.63	24.56	25	25	17	15
Finland	0.30	0.68	1	8	0.47	8
Ireland	0.57	1.32	1	8	0.91	8
Mexico	0.51	1.17	1	8	0.80	8
Netherlands	0.18	0.41	1	8	0.28	8
New Zealand	0.01	0.02	1	8	0.01	8
N.Ireland	0.30	0.70	1	8	0.48	8
Sweden	0.16	0.37	1	8	0.25	8
United Kingdom	0.12	0.27	1	8	0.19	8
Total	**100.00**	**231**	**235**	**305**	**159**	**231**
Pork Fresh Arsenicals	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=103*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	0.04	0.04	1	8	0.01	8
Canada	86.74	89.34	89	89	26.75	15
Chile	0.45	0.46	1	8	0.14	8
Denmark	10.63	10.95	11	11	3.28	8
Finland	0.30	0.30	1	8	0.09	8
Ireland	0.57	0.59	1	8	0.18	8
Mexico	0.51	0.52	1	8	0.16	8
Netherlands	0.18	0.18	1	8	0.05	8
New Zealand	0.01	0.01	1	8	0.00	8
N.Ireland	0.30	0.31	1	8	0.09	8
Sweden	0.16	0.16	1	8	0.05	8
United Kingdom	0.12	0.12	1	8	0.04	8
Total	**100**	**103**	**110**	**180**	**31**	**103**

Table 20(*continued)*
Number of Samples/Product Class-Pork, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Pork Fresh β-agonist	% Product Class Imported per Country (Pc/c)	Unadjusted № of Samples per Country=96*(Pc/c)/100	Adjust #1	Initial Adjustment	Final Adjustment	
Australia	0.04	0.04	1	8	8	
Canada	86.74	83.27	83	83	8	
Chile	0.45	0.43	1	8	8	
Denmark	10.63	10.21	10	10	8	
Finland	0.30	0.28	1	8	8	
Ireland	0.57	0.55	1	8	8	
Mexico	0.51	0.49	1	8	8	
Netherlands	0.18	0.17	1	8	8	
N. Ireland	0.01	0.01	1	8	8	
New Zealand	0.30	0.29	1	8	8	
Sweden	0.16	0.15	1	8	8	
United Kingdom	0.12	0.11	1	8	8	
Total	**100**	**96.0**	**103**	**173**	**96**	
Pork Fresh Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=231*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	0.04	0.09	1	8	0.08	8
Canada	86.74	200.37	200	200	173.54	141
Chile	0.45	1.04	1	8	0.90	8
Denmark	10.63	24.56	25	25	21.27	10
Finland	0.30	0.68	1	8	0.59	8
Ireland	0.57	1.32	1	8	1.15	8
Mexico	0.51	1.17	1	8	1.01	8
Netherlands	0.18	0.41	1	8	0.35	8
N. Ireland	0.01	0.02	1	8	0.02	8
New Zealand	0.30	0.70	1	8	0.61	8
Sweden	0.16	0.37	1	8	0.32	8
United Kingdom	0.12	0.27	1	8	0.24	8
Total	**100**	**230**	**235**	**305**	**200.07**	**231**

Table 21
Number of Samples/Product Class-Veal, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Veal Fresh Antibiotics	% Product Class Imported per Country (Pc/c)	Unadjusted № of Samples per Country=90*(Pc/c)/100	Final Adjustment
Australia	19.84	17.86	18
Canada	45.5	40.95	41
New Zealand	34.66	31.19	31
Total	**100**	**90**	**90**
Veal Fresh Avermectins	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	19.84	17.86	18
Canada	45.5	40.95	41
New Zealand	34.66	31.19	31
Total	**100**	**90**	**90**

Table 21 (*Continued*)
Number of Samples/Product Class-Veal, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Veal Fresh/β-agonist	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	19.84	17.86	18
Canada	45.5	40.95	41
New Zealand	34.66	31.19	31
Total	**100**	**90**	**90**
Veal Fresh/Sulfonamides	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	19.84	17.86	18
Canada	45.5	40.95	41
New Zealand	34.66	31.19	31
Total	**100**	**90**	**90**
Veal Fresh/Thyreostats	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	19.84	17.86	18
Canada	45.5	40.95	41
New Zealand	34.66	31.19	31
Total	**100**	**90**	**90**
Veal Fresh/Zeranol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	19.84	17.86	18
Canada	45.5	40.95	41
New Zealand	34.66	31.19	31
Total	**100**	**90**	**90**
Veal Fresh/Chloramphenicol	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=90*(Pc/c)/100**	**Final Adjustment**
Australia	19.84	17.86	18
Canada	45.5	40.95	41
New Zealand	34.66	31.19	31
Total	**100**	**90**	**90**

Table 22
Number of Samples/Product Class-Mutton/Lamb, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Mutton/Lamb Fresh Avermectins	**% Product Class Imported per Country (Pc/c)**	**Unadjusted № of Samples per Country=82*(Pc/c)/100**	**Adjust #1**	**Initial Adjustment**	**Adjust # 2**	**Final Adjustment**
Australia	74.05	60.72	61	61	45	44
Canada	0.23	0.19	1	8	0	8
Iceland	0.05	0.04	1	8	0	8
Mexico	0.05	0.04	1	8	0	8
New Zealand	25.62	21.01	21	21	16	14
Total	**100**	**82**	**85**	**106**	**61**	**82**

Table 23
Number of Samples/Product Class-Chicken Processed
2009 FSIS NRP, Import Reinspection Sampling Plan

Chicken Processed Arsenicals	% Product Class Imported per Country (Pc/c)	Unadjusted № of Samples per Country=8*(Pc/c)/100	Adjust #1	Final Adjustment
Canada	81.78	6.54	7	0*
Israel	0.89	0.07	1	8
Mexico	17.33	1.39	1	0*
Total	**100**	**8**	**9**	**8**

***Country exports fresh chicken**

Table 24
Number of Samples/Product Class-other Fowl, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Othe Fowl Fresh Antibiotics	% Product Class Imported per Country (Pc/c)	Unadjusted № of Samples per Country=16*(Pc/c)/100	Final Adjustment
Canada	96.03	8	8
France	3.97	8	8
Total	**100**	**16**	**16**

Table 25
Number of Samples/Product Class-Horse, Fresh
2009 FSIS 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

The candidate pesticides of concern were selected by members of the Surveillance Advisory Team (SAT) from the Environmental Protection Agency (EPA). The candidates selected for the 2009 NRP are presented in Table 27, *Scoring Table for Pesticides*. Because the Food Safety and Inspection Service (FSIS) prioritizes which *analyses* should be conducted, compounds that are, or are likely to be, detected by the same analytical methodology have been grouped together.

Compound Scoring

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

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

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

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

Compound Ranking

1. Background

   Using *Equation 1*[1]:

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

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

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

2. Rating the Pesticides According to Relative Public Health Concern

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

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

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

Equation 12

Relative Public Health Concern

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

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

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

Equation 13

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

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

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

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

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

II. Prioritizing Candidate Pesticides

Once the SAT completed ranking the pesticides according to their relative public health concern, the ranking scores were used to select compounds for the 2009 NRP. Using professional judgment, SAT participants decided that the pesticide compounds and compound classes that received a ranking of 23 or greater, as shown in Summary Table III, represent a potential public health concern that is sufficient to justify their inclusion in the 2009 NRP.

Once these high-priority compounds and compound classes had been identified, it was necessary for FSIS to apply considerations beyond those related to public health to determine the compounds that would be sampled. The principal consideration that was not related to public health was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Based on this constraint, only the chlorinated hydrocarbon/chlorinated organophosphate (CHC/COP) compound class (some environmental contaminants are included) can currently be included in the NRP. There are 31compounds in this compound class that FSIS will analyze for quantity and chemical identity. There are 13 additional compounds that will only be identified. The compounds are:

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 *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) (*identification only; not quantitated)

The sampling status of each compound or compound class in the 2009 scheduled sampling plan is provided in Summary Table III. For each highly ranked compound or compound class that was not scheduled for inclusion in the 2009 NRP, a brief explanation of the reason for its exclusion is provided. This table will be used to identify future method development needs for pesticides for the FSIS NRP.

It can be seen that a number of highly ranked pesticides could not be included in the 2009 NRP due to methodological limitations. FSIS will apply methodology capable of capturing chlorinated hydrocarbons and chlorinated and non-chlorinated organophosphates when such methodology can be implemented.

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

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

Since the 2006 NRP, FSIS has suspended scheduled sampling testing for CHCs and COPs for the following production classes: minor species (ducks, geese, ratites, rabbits, squab, and bison); young chickens; young turkeys; mature chickens; bulls; formula-fed veal; 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 as a means of scheduled sampling for the occurrence of accidental contamination incidents.

IV. Allocation of Sampling Resources

Since only the CHC/COP compound class will be included in the 2009 NRP, this phase is relatively straightforward. FSIS has sufficient analytical capability to implement CHC/COP analysis in all production classes. To establish a relative sampling priority for each C/PC pair, the ranking score for the CHC/COPs were calculated (Table 27) and multiplied by the estimated relative percent of domestic consumption for each production class (presented in Table 3) and shown in *Equation 14*. This is identical to *Equation 6*, which was used to calculate the relative sampling priorities for the veterinary drugs:

Equation 14

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

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

upon average consumption across the entire U.S. population, rather than upon maximally exposed individuals.

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

Adjusting Relative Sampling Numbers

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

Extensive FSIS historical testing information on violations, subdivided by production class, is available for the CHC/COP compound class. This information has been used to further refine the relative priority of sampling each C/PC pair. Table 28 lists the priority score calculated by multiplying the total number of samples analyzed by FSIS in each production class under its scheduled sampling plan (i.e., random sampling only)for the period 01/01/1998 -12/31/2007 and the percent of samples found to be violative (i.e., present at a level in excess of the action level or regulatory tolerance; or, for those compounds that are prohibited, present at any detectable level). Using these data, the following rules were applied to adjust the sampling numbers:

1. Less than 300 samples from the C/PC pair tested over the 10-year period: +1 level (i.e., increase by one sampling level, e.g., from 230 samples to 300 samples).
2. At least 300 samples tested over the 10-year period, violation rate and violations were found during CY 2007, or the violation rate is greater than or equal to 0.25% ($\geq$ 0.25%) during 01/01/1998-12/31/2007, 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 2009 NRP, FSIS has continued to suspended scheduled sampling testing for CHCs and COPs for the following production classes: minor species (ducks, geese, ratites, rabbits, squab, and bison); young chickens; young turkeys; mature chickens; bulls; formula-fed veal; mature turkeys; and bob veal.

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

Adjusting for Laboratory Capacity

For the 2009 NRP sampling levels for boars, goats, lambs, and sheep were adjusted to 135 samples each for laboratory capacity.

Adjustment for the Number of Slaughter Facilities

No adjustment was necessary for number of slaughter facilities for 2009 NRP.

V. Scoring Key for Pesticides

FSIS Historical Testing Information on Violations (01/01/1998 -12/31/2007)

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

Method A: Maximum Violation Rate. Identify the production class exhibiting the highest average violation rate (the number of violations over the period from 1998-2007, divided by the total number of samples analyzed). Score as follows:

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

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

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

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

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

Regulatory Concern

These scores represent EPA's professional assessment of the extent to which the acute or chronic dietary exposure to this compound may exceed EPA's level of concern. For compounds other than carcinogens, this was determined by comparing a compound's Acute or Chronic Population Adjusted Dose (PAD) (whichever was lower) to the estimated level of exposure. The Acute and Chronic 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 (NOAEL) (i.e., the highest dose that gave no observable adverse effect) or the Lowest Observed Adverse Effect Level (LOAEL) (i.e., the lowest dose at which an adverse effect was seen) by Uncertainty Factors (UF). UFs are used to account for differences between different humans (intraspecies variability) and for differences between the test animals and humans (interspecies extrapolation). If the LOAEL is used, an additional UF is required.

RfD = (NOAEL or LOAEL)/Total UF

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

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

The acute and chronic dietary risks are expressed as a percentage of the Acute or Chronic PAD. A dietary risk of 100% of the Acute or Chronic PAD (*whichever is lower*) is the target level of exposure that should not be exceeded (i.e., the estimated risk associated with any exposure that is less than 100% of the PAD has been judged not to be of concern). In the following, PAD is the lower of the Acute and Chronic 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 EPA to pesticides for the category "Pre-Slaughter Interval" (Table 27). Pesticides in this category have been accepted for direct dermal application and

have a minimum pre-slaughter interval, which is the interval between the last dermal application and the time of slaughter. FSIS determines a value for a pesticide in this category as follows:

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

Bioconcentration Factor

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

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

Endocrine Disruption

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

- A value of 4 is assigned if endocrine disruption is likely.
- A value of 3 is assigned if endocrine disruption is suspected.
- NT is reported if the compound has not been tested.

Toxicity

A numerical value of 1, 2, 3 or 4 is assigned by EPA to pesticides for the category "Toxicity" (Table 27). The toxicity value represents EPA's professional judgment of the toxicity of the compound, including both the dose required to achieve a toxic effect and the severity of the toxic effect. In the following,

"RfD" is the lower of the Acute and Chronic RfDs. [An explanation of Acute and Chronic RfD is provided in the description of Regulatory Concern, above.] A value for toxicity is determined as follows:

- A value of 4 is assigned if the pesticide compound is a cholinesterase inhibitor, carcinogen, or has a low RfD.
- A value of 3 is assigned if the pesticide compound has a low RfD.
- A value of 2 is assigned if the pesticide compound has a medium RfD.
- A value of 1 is assigned if the pesticide compound has a high RfD.

Table 26
Scoring Table for Pesticides
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Compound/Compound Class	*Historical Testing for Violations (V)*	*Regulatory Concern[1] (R)*	*Pre-Slaughter Interval[2] (P)*	*Bioconcen-tration[3] (B)*	*Endocrine Disruption[4]*	*Toxicity[5] (T)*	*Relative public health concern rating= (((2*R)+P+B)/4)*T*
Phosalone oxon	Not Tested	4	1	3	Not Available	4	12.0
Picloram	Not Tested	1	2	1	Not Available	2	2.5
Piperonyl butoxide	Not Tested	3	4	2	Not Available	3	9.0
PP 890	Not Tested	3	4	2	Not Available	4	12.0
Primisulfuron-methyl	Not Tested	2	1	1	Not Available	4	6.0
Prohexadione-ca1cium	Not Tested	1	1	1	Not Available	1	1.0
Propachlor	Not Tested	3	1	3	3	4	10.0
Propanil	Not Tested	1	1	3	Not Available	4	6.0
Propargite	Not Tested	3	1	2	Not Available	3	6.8
Propargite	Not Tested	3	1	2	Not Available	3	6.8

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Compound/Compound Class	*Historical Testing for Violations (V)*	*Regulatory Concern[1] (R)*	*Pre-Slaughter Interval[2] (P)*	*Bioconcen-tration[3] (B)*	*Endocrine Disruption[4]*	*Toxicity[5] (T)*	*Relative public health concern rating= (((2*R)+P+B)/4)*T*
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
Propoxycarbazone	Not Tested	1	1	1	Not Available	1	1.0
Propyzamide	Not Tested	3	1	4	Not Available	3	8.3
Prosulfuron	Not Tested	1	1	3	Not Available	3	4.5
Prothioconazole	Not Tested	4	1	4	Not Available	4	13.0
Pymetrozine	Not Tested	1	1	1	Not Available	1	1.0
Pyraclostrobin	Not Tested	3	1	4	Not Available	3	8.3
Pyrasulfatole	Not Tested	1	1	1	Not Available	1	1.0
Pyrazon	Not Tested	3	1	1	Not Available	4	8.0

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Compound/Compound Class	*Historical Testing for Violations (V)*	*Regulatory Concern[1] (R)*	*Pre-Slaughter Interval[2] (P)*	*Bioconcen-tration[3] (B)*	*Endocrine Disruption[4]*	*Toxicity[5] (T)*	*Relative public health concern rating= (((2*R)+P+B)/4)*T*
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
Pyridaben	Not Tested	2	1	2	Not Available	4	7.0
Pyrimethanil	Not Tested	2	1	3	Not Available	2	4.0
Pyriproxifen	Not Tested	1	1	4	Not Available	1	1.8
Pyrithiobac-Sodium	Not Tested	2	1	4	Not Available	2	4.5
Quinclorac	Not Tested	2	1	2	Not Available	2	3.5
Resmethrin	Not Tested	3	1	3	Not Available	4	10.0
Quizalofop-ethyl	Not Tested	1	1	1	Not Available	1	1.0

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Compound/Compound Class	*Historical Testing for Violations (V)*	*Regulatory Concern[1] (R)*	*Pre-Slaughter Interval[2] (P)*	*Bioconcen-tration[3] (B)*	*Endocrine Disruption[4]*	*Toxicity[5] (T)*	*Relative public health concern rating= (((2*R)+P+B)/4)*T*
SD 31723	Not Tested	2	1	4	Not Available	3	6.8
SD 33608	Not Tested	2	1	4	Not Available	3	6.8
SD 54597	Not Tested	3	4	3	Not Available	3	9.8
Sethoxydim	Not Tested	2	1	2	Not Available	2	3.5
Sethoxydim hydroxylate sulfone	Not Tested	2	1	2	Not Available	2	3.5
Sethoxydim sulfoxide	Not Tested	2	1	2	Not Available	2	3.5
Sodium acifluorfen	Not Tested	3	1	2	Not Available	3	6.8
Spinoteram	Not Tested	3	1	4	Not Available	1	2.8
Spinosad	Not Tested	3	1	4	Not Available	1	2.8
Spirodiclofen	Not Tested	2	1	4	Not Available	2	4.5

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Compound/Compound Class	*Historical Testing for Violations (V)*	*Regulatory Concern[1] (R)*	*Pre-Slaughter Interval[2] (P)*	*Bioconcen-tration[3] (B)*	*Endocrine Disruption[4]*	*Toxicity[5] (T)*	*Relative public health concern rating= (((2*R)+P+B)/4)*T*
Spiromesifen	Not Tested	2	1	4	Not Available	2	4.5
Sulfosulfuron	Not Tested	2	1	1	Not Available	2	3.0
Sulfuryl Fluoride	Not Tested	3	1	1	Not Available	4	8.0
TCP=3,5,6-trichloro-2-pyridinol	Not Tested	3	2	1	Not Available	4	9.0
Tebuconazole	Not Tested	4	1	2	Not Available	3	8.3
Tebufenozide	Not Tested	3	1	4	Not Available	3	8.3
Tebuthiuron	Not Tested	2	1	2	Not Available	3	5.3
Teflubenzuron	Not Tested	Not Available	1	Not Available	Not Available	Not Available	0.0
Tepraloxydim	Not Tested	2	1	2	Not Available	2	3.5
Terbacil	Not Tested	1	1	1	Not Available	3	3.0

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Compound/Compound Class	*Historical Testing for Violations (V)*	*Regulatory Concern[1] (R)*	*Pre-Slaughter Interval[2] (P)*	*Bioconcen-tration[3] (B)*	*Endocrine Disruption[4]*	*Toxicity[5] (T)*	*Relative public health concern rating= (((2*R)+P+B)/4)*T*
Tetraconazole	Not Tested	4	1	4	Not Available	4	13.0
Tetradifon	Not Tested	1	1	2	Not Available	4	5.0
Thiacloprid	Not Tested	3	1	2	Not Available	3	6.8
Thiamethoxam	Not Tested	4	2	1	Not Available	4	11.0
Thidiazuron	Not Tested	2	1	2	Not Available	4	7.0
Thiophanate methyl	Not Tested	3	1	2	Not Available	4	9.0
THPI	Not Tested	3	1	4	Not Available	4	11.0
Topramezone	Not Tested	1	1	1	Not Available	1	1.0
Tralkoxydim	Not Tested	2	1	2	Not Available	2	3.5
Triadimefon	Not Tested	3	1	4	Not Available	4	11.0

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Compound/Compound Class	*Historical Testing for Violations (V)*	*Regulatory Concern[1] (R)*	*Pre-Slaughter Interval[2] (P)*	*Bioconcen-tration[3] (B)*	*Endocrine Disruption[4]*	*Toxicity[5] (T)*	*Relative public health concern rating= (((2*R)+P+B)/4)*T*
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
Triasulfuron	Not Tested	1	1	1	Not Available	3	3.0
Triazole alanine	Not Tested	4	1	3	Not Available	4	12.0
Triazole acetic acid	Not Tested	4	1	3	Not Available	4	12.0
Triclopyr	Not Tested	3	2	1	Not Available	4	9.0
Trifloxystrobin	Not Tested	2	1	3	Not Available	2	4.0
Triflumazole	Not Tested	4	1	4	Not Available	3	9.8

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Compound/Compound Class	*Historical Testing for Violations (V)*	*Regulatory Concern[1] (R)*	*Pre-Slaughter[2] (P)*	*Bioconcen-tration[3] (B)*	*Endocrine Disruption[4]*	*Toxicity[5] (T)*	*Relative public health concern rating= (((2*R)+P+B)/4)*T*
Triflumizole	Not Tested	4	1	4	Not Available	4	13.0
Triphenyltin hydroxide	Not Tested	1	1	4	Not Available	4	7.0
WAK4103	Not Tested	3	1	1	Not Available	3	6.0

[1] Scores for regulatory concern, *R*, are provided by EPA.
[2] Scores for withdrawal time *P*, are provided by EPA.
[3] Scores for bioconcentration factor are provided by EPA.
[4] Scores for endocrine disruption are provided by EPA.
[5] Scores for toxicity are provided by EPA.
[6] 5-Hydroxythiabendazole, benomyl (as carbendazim), thiabendazole
[7] Not Tested = not scheduled for sampling by FSIS during the 10 year period, 01/01/1998 - 12/31/2007.
[8] Aldicarb, aldicarb sulfoxide, aldicarb sulfone, carbaryl, carbofuran, carbofuran 3-hydroxy
[9] Carbaryl 5,6-dihydroxy, chlorpropham, propham, thiobencarb, 4-chlorobenzylmethylsulfone,4-chlorobenzylmethylsulfone sulfoxide
[10] *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)
[11] Azinphos-methyl, azinphos-methyl oxon, chlorpyrifos, diazinon, diazinon oxon, diazinon met G-27550, dichlorvos, dimethoate, dimethoate oxon, dioxathion, ethion, ethion monooxon, fenthion, fenthion oxon, fenthion oxon sulfone, fenthion oxon sulfoxide, fenthion sulfone, fenthion sulfoxide, malathion, malathion oxon, naled, phosmet, phosmet oxon, pirimiphos-methyl, trichlorfon, tetrachlorvinphos, tetrachlorvinphos-4 metabolites, acephate, methamidophos, chlorpyrifos-methyl, fenamiphos, fenamiphos sulfoxide,fenamiphos sulfone, fenamiphos sulfoxide desisopropyl, fenamiphos sulfone desisopropyl, isofenphos, isofenphos oxon, isofenphos desisopropyl, isofenphos oxon desisopropyl, methidathion, ODM, parathion (ethyl), parathion oxon, parathion methyl, parathion methyl oxon, phorate, phorate oxon, phorate oxon sulfone, phorate oxon sulfoxide, phorate sulfone, phorate sulfoxide, profenofos, sulprofos, sulprofos oxon, sulprofos oxon sulfone, sulprofos oxon sulfoxide, sulprofos sulfone, sulprofos sulfoxide, tribufos (DEF).

Table 26
Scoring Table for Pesticides *(continued)*
2009 FSIS NRP, Domestic Scheduled Sampling Plan

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[12] Cypermethrin, cis-permethrin, trans-permethrin, fenvalerate, zeta-cypermethrin.
[13] Atrazine, simazine, propazine, terbuthylazine
[14] Atrazine, chloro metabolites, metribuzin, metribuzin DADK, metribuzin DA, metribuzin DK, amitraz, amitraz 2,4-DMA metabs., desdiethyl simazine, desethyl simazine, simazine chloro metabs.

Table 27
Pesticide Compound/Production Class Pairs, Sorted by Sampling Priority Score, with Adjusted Number of Analyses
2009 FSIS NRP, Domestic Scheduled Sampling Plan

Compound Class	*Production Class*	*Priority Score*	*Unadjusted Number of Samples*	*First Adjustment*[1]	*Second Adjustment*[2]	*Third Adjustment*[3]	*Final*[4]
CHCs/COPs	Market hogs	298.816	300	300	300	300	300
CHCs/COPs	Steers	209.104	300	300	300	300	300
CHCs/COPs	Lambs	2.416	300	300	135	135	135
CHCs/COPs	Boars	1.648	300	300	135	135	135
CHCs/COPs	Roaster pigs	0.752	300	300	300	300	300
CHCs/COPs	Goats	0.448	300	300	135	135	135
CHCs/COPs	Sheep	0.112	300	300	135	135	135
Totals			**2,100**				**1,440**

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

Design of the Import Reinspection Sampling Plan for Pesticides

I. Selecting and Ranking Candidate Pesticides

The list of compounds of concern for the import reinspection sampling plan (IRSP) is identical to that for the Domestic Scheduled Sampling Plan (Summary Table III)**.** In ranking pesticides for inclusion in the IRSP, FSIS chose to employ the ranking scores generated for the domestic scheduled sampling plan because FSIS does not have sufficient historical data on pesticides in imported products to predict their violation rates. However, if FSIS has reason to believe that a compound is being misused in a foreign country, then it would add that compound/country pair to the IRSP.

II. Prioritizing Candidate Pesticides

The list of high priority compounds chosen for the IRSP by the SAT is the same as that for the domestic plan. Once the high-priority compounds and compound classes are identified, FSIS applies other considerations to determine which compounds FSIS should sample. The principal factor was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Only the chlorinated hydrocarbon/chlorinated organophosphate (CHCs/COPs) compound class is included in the 2009 NRP. The compounds that can be identified by this multiresidue method (MRM) are listed in the section, *Design of the Domestic Scheduled Sampling Plan for Pesticides*.

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

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

IV. Allocation of Sampling Resources

Egg Products

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

Animal Product Classes

Table 7, *Estimated Annual Amount of Product Imported*, lists the estimated amounts of all product classes imported into the U.S. and the percentage of each of the product classes. The percentage of each product class imported annually is calculated using the following equation:

Equation 15

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

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

Equation 16

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

Based on the scores, one of the following sampling options is chosen: (1) high regulatory concern (300 analyses/year); (2) moderate regulatory concern (230 samples/year); or (3) low regulatory concern (90

samples/year). This is indicated in Table 29, *Number of Pesticide Samples/Product Class*, in the column "Number of Samples."

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

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

The adjusted number of samples is listed in Table 28, *Number of Pesticide Samples/Product Class*, in the column labeled "Adjusted Number of Samples." The final number of samples for a compound/product class is obtained after the allocation of samples among different countries is completed. The final number of samples is listed in Table 29, in the column labeled "Final Number of Samples." The numbers in columns labeled "Adjusted Number of Samples" and "Final Number of Samples" may vary slightly because of the rounding upwards or downwards of the samples.

Allocation of Samples Among Different Countries

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

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

If the amount of an import product class is less than one percent in a specific country, eight samples per compound/compound class are taken from that country. The relative amounts of horse fresh; chicken processed; goat, fresh and processed; turkey fresh and processed; other fowl, fresh, varied combination fresh and processed; are less than one percent. Also, as stated above, if a country is exporting both fresh and processed products or sources all its raw materials from eligible sources, then no residue samples will be scheduled for the processed products from that country. The numbers of samples per country per product class for each compound/compound class are listed in Tables 30-42.

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

For major product classes, the number of samples was allocated to each country depending upon the relative amount of product imported from that country. Table 8, *Estimated Annual Amount of Product Imported/Country*, lists the amount of product imported from each country. The percent of a product class imported from a country was calculated as follows and is in Table 9, *Relative Annual Amount of Product Imported/Country*.

Equation 17

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

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

Equation 18

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

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

After determining the number of samples required from each country, each country with less than eight samples was assigned a minimum of eight samples. This is indicated in the column labeled "Adjustment # 1" in Tables 30-43. The results of this adjustment are in the column labeled "Initial Adj." If the total number of samples for a compound/product class resulted in more than the total number of samples allocated to that compound/product class pair, then a second adjustment had to be made so that the total number of samples would be within an allocated number. This adjustment was made only to those countries from which greater than eight samples were to be taken. This adjustment is accomplished using the following equation:

Equation 19

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

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/Product Class 2009
FSIS NRP, Import Reinspection Sampling g Plan

Number Countries	Product Class	Pesticide	Product	Drug Score	Relative Sample Priority	Number samples	Unadjusted	Final Adjustment
10	Beef, fresh	CHC's/COPs	54.266%	16	868	300	300	302
7	Beef, processed	CHC's/COPs	6.148%	14	86	90	83	75
1	Horse, fresh	CHC's/COPs	0.016%	16	0	8	8	8
2	Other fowl, fresh	CHC's/COPs	0.131%	16	2	16	16	16
2	Other fowl, processed	CHC's/COPs	0.003%	16	0	16	16	0
12	Pork, fresh	CHC's/COPs	21.66%	16	347	300	230	231
2	Chicken, fresh	CHC's/COPs	2.317%	16	37	90	90	90
3	Chicken, processed	CHC's/COPs	2.468%	16	39	90	8	8
1	Turkey , fresh	CHC's/COPs	0.4410%	16	7	8	8	8
3	Turkey, processed	CHC's/COPs	0.375%	16	6	24	16	16
3	Goat, fresh	CHC's/COPs	0.644%	16	10	24	24	24
5	Lamb/Mutton, fresh	CHC's/COPs	4.822%	16	77	90	80	82
3	Lamb/Mutton, processed	CHC's/COPs	0.01%	16	0	90	24	0
11	Pork, processed	CHC's/COPs	4.69%	16	75	56	61	56
1	Varied combination, fresh	CHC's/COPs	0.001%	16	0	8	8	8
5	Varied combination, processed	CHC's/COPs	0.409%	16	7	40	32	32

Due to lack of fat, veal fresh and processed products are not be subjected to Chlorinated Hydrocarbons and Chlorinated Organophosphates (CHC/COP)analysis

Table 29
Number of Samples/Product Class-Pork Processed
2009 FSIS NRP, Import Reinspection Sampling Plan

Pork Processed CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country= 56*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Canada	66.62	37.307	37	0	0	0*
Croatia	0.228	0.128	1	8	8	8
Denmark	6.386	3.576	4	0	0	0*
Germany	0.409	0.229	1	8	8	8
Hungary	0.470	0.263	1	8	8	8
Italy	4.991	2.795	3	8	8	8
Mexico	8.272	4.632	5	0	0	0*
Netherlands	0.225	0.126	1	0	0	0*
Poland	11.514	6.448	6	8	8	8
San Marino	0.001	0.001	1	8	8	8
Spain	0.885	0.496	1	8	8	8
Total	**100.00**	**56**	**61**	**56**	**56**	**56**

***Country exports fresh pork**

Table 30
Number of Samples/Product Class-Goat, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Goat Fresh CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country= 24*(Pc/c)/100	Adjust #1	Final Adjustment
Australia	98.16	23.6	8	8
Mexico	0.06	0.01	1	8
New Zealand	1.78	0.43	1	8
Total	**100**	**24**	**24**	**24**

Table 31
Number of Samples/Product Class-Turkey, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Turkey 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**

Table 32
Number of Samples/Product Class-Turkey, Processed
2009 FSIS NRP, Import Reinspection Sampling Plan

Turkey Processed/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country= 16*(Pc/c)/100	Final Adjustment
Canada	23.83	0	0*
Israel	9.71	8	8
Mexico	66.46	8	8
Total	**100**	**16**	**16**

*Country exports fresh turkey

Table 33
Number of Samples/Product Class-Chicken, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Chicken Fresh/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country= 90*(Pc/c)/100	Adjust #1	Initial Adjustment	Final Adjustment
Canada	99.72	89.748	90	90	82
Mexico	0.28	0.252	1	8	8
Total	**100**	**90**	**98**	**98**	**90**

Table 34
Number of Samples/Product Class-Varied Combination, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Varied combination 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**

Table 35
Number of Samples/Product Class-Varied Combination, Processed
2009 FSIS NRP, Import Reinspection Sampling Plan

Varied combination Processed/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country= 32*(Pc/c)/100	Adjust # 1	Final Adjustment
Australia	0.37	0.12	8	8
Canada	55.99	17.92	0	0*
France	0.01	0.003	8	8
Mexico	43.61	13.96	8	8
New Zealand	0.02	0.01	8	8
Total	**100**	**32**	**32**	**32**

Table 36
Number of Samples/Product Class-Beef, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Beef Fresh/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country= 302*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Australia	32.15	97.09	97	97	87	87
Canada	30.51	92.15	92	92	83	83
Chile	0.12	0.37	1	8	0	8
Costa Rica	0.67	2.02	2	8	2	8
Honduras	0.01	0.04	1	8	0	8
Japan	0.01	0.04	1	8	0	8
Mexico	1.75	5.29	5	8	5	8
New Zealand	17.24	52.05	52	52	47	47
Nicaragua	3.44	10.38	10	10	9	8
Uruguay	14.09	42.56	43	43	38	37
Total	**100**	**302.00**	**304**	**334**	**271**	**302**

Table 37
Number of Samples/Product Class- -Beef, Processed
2009 FSIS NRP, Import Reinspection Sampling Plan

Beef Processed CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country=75*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Argentina	16.59	12.44	12	12	15	15
Australia	1.14	0.85	1	8	8	0*
Brazil	66.47	49.85	50	50	60	60
Canada	9.72	7.29	7	7	0	0*
Costa Rica	0.00001	0.00001	1	8	0	0*
Mexico	1.58	1.19	1	8	0	0*
New Zealand	4.50	3.38	3	8	0	0*
Total	**100**	**75.00**	**75**	**101**	**83**	**75**

*Country exports fresh beef

Table 38
Number of Samples/Product Class-Pork, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Pork Fresh CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country= 231*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Australia	0.04	0.09	1	8	0.06	8
Canada	86.74	200.37	200	200	138.67	134
Chile	0.45	1.04	1	8	0.72	8
Denmark	10.63	24.56	25	24	16.99	17
Finland	0.30	0.68	1	8	0.47	8
Ireland	0.57	1.32	1	8	0.92	8
Mexico	0.51	1.17	1	8	0.81	8
Netherlands	0.18	0.41	1	8	0.28	8
New Zealand	0.01	0.02	1	8	0.01	8
North Ireland	0.30	0.70	1	8	0.49	8
Sweden	0.16	0.37	1	8	0.25	8
UK	0.12	0.27	1	8	8.00	8
Total	**100**	**230**	**235**	**304**	**168**	**231**

Table 39
Number of Samples/Product Class-Mutton/Lamb, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Mutton/Lamb Fresh/CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country= 82*(Pc/c)/100	Adjust #1	Initial Adjustment	Adjust # 2	Final Adjustment
Australia	74.05	60.721	61	61	41	43
Canada	0.23	0.1886	1	8	0	8
Iceland	0.05	0.041	1	8	0	8
Mexico	0.05	0.041	1	8	0	8
New Zealand	25.62	21.0084	21	21	14	15
Total	**100**	**82**	**85**	**106**	**55**	**82**

Table 40
Number of Samples/Product Class- Chicken, Processed
2009 FSIS NRP, Import Reinspection Sampling Plan

Chicken Processed CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country= 8*(Pc/c)/100	Final Adjustment
Canada	81.78	6.5424	0*
Israel	0.89	0.0712	8
Mexico	17.33	1.3864	0*
Total	**100**	**8**	**8**

*Country exports fresh chicken

Table 41
Number of Samples/Product Class- Other Fowl, Fresh
2009 FSIS NRP, Import Reinspection Sampling Plan

Othe Fowl Fresh CHC/COP	% Product Class Imported per Country (Pc/c)	Unadusted № Samples per Country=16*(Pc/c)/100	Final Adjustment
Canada	96	8	8
France	4	8	8
Total	**100**	**16**	**16**

Table 42
Number of Samples/Product Class-Horse, Fresh
2009 FSIS 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 were as follows:

A. Environmental Contaminants

- Heavy metals
- Mycotoxins

B. Processing Contaminants

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

Heavy metals were identified by the SAT as meriting inclusion in the NRP. FSIS will conduct an exploratory assessment of the heavy metals, lead, and cadmium in the production class "dairy cows." An exploratory assessment sampling for lead and cadmium began in 2003 (October through December; heifers and dairy cows) and continued through 2004 (boars and stags, dairy cows, heifers, and mature chickens), 2005 for steers, 2006 for mature chickens, 2007 for mature chickens, and 2008 for beef cows. Sampling for 2009 is summarized in Table 45.

No processing contaminants have been designated for analysis in year 2009.

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

Table 43
Number of Scheduled Samples/Product Class for Lead and Cadmium
2009 FSIS NRP Domestic Specifically Designed Survey

Production Class	Compound	Number of Samples
Dairy cows	Lead	300
Dairy cows	Cadmium	300
Total		**600**

Sampling Plan for Exploratory Assessments

MELAMINE

Melamine and its three analogues, cyanuric acid, ammelide, and ammeline, referred to as melamine compounds (MC), are found in foods because of (1) industrial-environmental contamination, (2) alleged fraudulent addition of industrial MC to foods, and (3) its production as a metabolite of cyromazine, which is an insect growth regulator. MC may be ubiquitous in nature at low levels because of its wide use.

In light of recent disclosures of melamine being found in certain imported food products, FSIS has determined that it is prudent to conduct sampling to assess for the prevalence of melamine in meat and poultry products that contain milk and milk-derived ingredients, such as non-fat dried milk, casein, whey, evaporated milk, and milk powder. Thus, the Agency has chosen the following five types of retail products for testing:

1. Baby food (containing a significant amount of meat or poultry products);
2. Cooked sausages (including hot dogs or frankfurters with and without cheese products);
3. Breaded chicken (bite-sized morsels or nuggets with and without cheese products);
4. Meatballs; and
5. Meat and poultry wrapped in dough and pizza (including calzones).

Table 44
2009 FSIS NRP Domestic Exploratory Assessment for Melamine

Compound or Compound Class	*Production Class*	*Number of Samples*
Melamine	Retail products with milk-derived ingredients	540
Total	**Total Samples**	**540**

Summary of the Domestic and Import Sampling Plans

Domestic Sampling Plan

The number of scheduled samples for veterinary drugs, environmental contaminants, and pesticides in all production classes is listed in Table 45, *Domestic Sampling Plan: Summary I, 2009 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments*. The table also specifies, for each combination of compound and production class, which FSIS laboratory will be conducting the analyses and the sampling plan type. For the convenience of the reader, this information is also presented in summary form (including all sampling numbers, but not including the laboratory and sampling plan designation), in Table 46, *Domestic Sampling Plan: Summary II, 2009 FSIS NRP, Domestic Sampling and Exploratory Assessments*.

Import Sampling Plan

The final detailed import plan sample numbers for all compounds (veterinary drugs, pesticides and unavoidable environmental contaminants), in all production classes and all countries, are listed in Table 47, *Summary, 2009 FSIS NRP, Import Reinspection Sampling Plan*. A summary of the total number of samples per compound per production class is presented in Table 48, *Number of Compounds/Product Class, 2009 FSIS NRP, Import Reinspection Sampling Plan*. In Table 49, *Number of Samples/Country/Product Class, 2009 FSIS NRP, Import Reinspection Sampling Plan*, the number of samples per country per production class is listed. A summary of all sampling plans (domestic and import) is provided in Table 50, *Combined Summary, 2009 FSIS NRP, Domestic and Import Scheduled Sampling and Exploratory Assessments.*

Table 45
Domestic Sampling Plan: Summary I
2009 FSIS 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	300	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	135	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
Antibiotics by Bioassay	ML	Young turkeys	300	Scheduled Sampling
Total Antibiotics by Bioassay			**5,550**	
Arsenicals	EL	Beef cows	300	Scheduled Sampling
Arsenicals	EL	Egg products	300	Scheduled Sampling
Arsenicals	EL	Mature turkeys	300	Scheduled Sampling
Arsenicals	EL	Market hogs	300	Scheduled Sampling
Arsenicals	EL	Young chickens	300	Scheduled Sampling
Total Arsenicals			**1,500**	
Avermectins	EL	Beef cows	300	Scheduled Sampling
Avermectins	EL	Bulls	230	Scheduled Sampling
Avermectins	EL	Formula–fed veal	300	Scheduled Sampling
Avermectins	EL	Goats	135	Scheduled Sampling
Avermectins	EL	Heavy calves	135	Scheduled Sampling
Avermectins	EL	Lambs	300	Scheduled Sampling
Avermectins	EL	Non-Formula-fed veal	135	Scheduled Sampling
Avermectins	EL	Market hogs	300	Scheduled Sampling
Avermectins	EL	Mature sheep	300	Scheduled Sampling
Avermectins	EL	Steers	230	Scheduled Sampling
Total Avermectins			**2,365**	

Table 45 - *continued*
Domestic Sampling Plan: Summary I
2009 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments

Analysis	Lab	Production Class	Number of Samples	Plan Type
β-Agonists	WL	Goats	90	Scheduled Sampling
β-Agonists	WL	Non-formula-fed veal	300	Scheduled Sampling
β-Agonists	WL	Steers	300	Scheduled Sampling
Total β-Agonists[1]			**690**	
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	Mature turkeys	300	Scheduled Sampling
Chloramphenicol	EL	Steers	300	Scheduled Sampling
Chloramphenicol	EL	Young chickens	300	Scheduled Sampling
Total Chloramphenicol			**1,500**	
CHCs/COPs, Pesticides	WL	Boars/stags	135	Scheduled Sampling
CHCs/COPs	WL	Goats	135	Scheduled Sampling
CHCs/COPs	WL	Lambs	135	Scheduled Sampling
CHCs/COPs	WL	Market hogs	300	Scheduled Sampling
CHCs/COPs	WL	Mature Sheep	135	Scheduled Sampling
CHCs/COPs	WL	Roaster pigs	300	Scheduled Sampling
CHCs/COPs	WL	Steers	300	Scheduled Sampling
Total CHCs/COPs			**1,440**	
Florfenicol	EL	Dairy cows	300	Scheduled Sampling
Florfenicol	EL	Formula-fed veal	230	Scheduled Sampling
Florfenicol	EL	Non-formula-fed veal	135	Scheduled Sampling
Total Florfenicol			**665**	

Table 45
Domestic Sampling Plan: Summary I
2009 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments

Analysis	Lab	Production Class	Number of Samples	Plan Type
Flunixin	ML	Beef cows	300	Scheduled Sampling
Flunixin	ML	Dairy cows	300	Scheduled Sampling
Flunixin	ML	Heavy calves	300	Scheduled Sampling
Total Flunixin			**900**	
Lead and Cadmium	EL	Dairy cows	300	Exploratory Assessment
Total Lead and Cadmium			**300**	
Melamine	FSIS FERN Lab	Various meat and poultry retail products with milk-derived ingredients	540	Exploratory Assessment
Total Melamine			**540**	
Nitrofurans	WL	Dairy cows	300	Scheduled Sampling
Nitrofurans	WL	Market hogs	300	Scheduled Sampling
Nitrofurans	WL	Sows	300	Scheduled Sampling
Total Nitrofurans			**900**	
Nitroimidazoles	EL	Young chickens	300	Scheduled Sampling
Nitroimidazoles	EL	Young turkeys	300	Scheduled Sampling
Total Nitroimidazoles			**600**	
Sulfonamides	EL	Beef cows	300	Scheduled Sampling
Sulfonamides	EL	Bob veal	135	Scheduled Sampling
Sulfonamides	EL	Bulls	300	Scheduled Sampling
Sulfonamides	EL	Dairy cows	135	Scheduled Sampling
Sulfonamides	EL	Ducks	300	Scheduled Sampling
Sulfonamides	EL	Egg products	300	Scheduled Sampling
Sulfonamides	EL	Formula-fed veal	300	Scheduled Sampling
Sulfonamides	EL	Heavy calves	90	Scheduled Sampling
Sulfonamides	EL	Heifers	300	Scheduled Sampling
Sulfonamides	EL	Market hogs	135	Scheduled Sampling
Sulfonamides	EL	Mature chickens	300	Scheduled Sampling
Sulfonamides	EL	Non-formula-fed veal	135	Scheduled Sampling
Sulfonamides	EL	Roaster pigs	135	Scheduled Sampling
Sulfonamides	EL	Steers	230	Scheduled Sampling
Sulfonamides	EL	Young chickens	300	Scheduled Sampling
Sulfonamides	EL	Young turkeys	230	Scheduled Sampling
Total Sulfonamides			**3,625**	
Thyreostats	EL	Dairy cows	300	Scheduled Sampling
Total Thyreostats			**300**	
Xenobiotic hormones	ML	Formula-fed veal	390	Scheduled Sampling
Xenobiotic hormones	ML	Non-formula-fed veal	390	Scheduled Sampling
Total Xenobiotic hormones[2]			**780**	

Table 45
Domestic Sampling Plan: Summary I
2009 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments

[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 samples will be screened for Phenylbutazone and Flunixin as part of inspector generated sampling plan.

Table 46
Domestic Sampling Plan: Summary II
2009 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments

Production Class	Antibiotics	Arsenicals	Avermectins	ß-Agonists	Carbadox	CHC/COP
Beef cows	300	300	300	0	0	0
Bob veal	300	0	0	0	0	0
Bulls	300	0	230	0	0	0
Dairy cows	300	0	0	0	0	0
Formula-fed veal	300	0	300	0	0	0
Heavy calves	90	0	135	0	0	0
Heifers	300	0	0	0	0	0
Non-Formula-fed veal	135	0	135	300	0	0
Steers	300	0	230	300	0	300
Subtotal, Cattle	**2,325**	**300**	**1,330**	**600**	**0**	**300**
Boars/Stags	300	0	0	0	230	135
Market hogs	300	300	300	0	230	300
Roaster pigs	300	0	0	0	0	300
Sows	300	0	0	0	0	0
Subtotal, Swine	**1,200**	**300**	**300**	**0**	**460**	**735**
Goats	90	0	135	90	0	135
Lambs	300	0	300	0	0	135
Mature sheep	300	0	300	0	0	135
Subtotal, Ovine	**690**	**0**	**735**	**90**	**0**	**405**
Total, All Livestock	**7,740**	**600**	**2,365**	**690**	**460**	**1,440**
Ducks	45	0	0	0	0	0
Geese	45	0	0	0	0	0
Mature chickens	300	0	0	0	0	0
Mature turkeys	300	300	0	0	0	0
Young chickens	300	300	0	0	0	0
Young turkeys	300	0	0	0	0	0
Subtotal, Poultry	**1,290**	**600**	**0**	**0**	**0**	**0**
Rabbits	45	0	0	0	0	0
Egg products	0	300	0	0	0	0
Meat and poultry retail products with milk-derived ingredients	0	0	0	0	0	0
Total, All Production Classes	**12,555**	**1,500**	**2,365**	**690**	**460**	**1,440**

Table 46-*continued*
Domestic Sampling Plan: Summary II
2009 FSIS 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	0	0
Bulls	0	0	0	0
Dairy cows	300	300	300	300
Formula-fed veal	0	230	0	0
Heavy calves	0	0	300	0
Heifers	0	0	0	0
non-Formula-fed veal	0	135	0	0
Steers	300	0	0	0
Subtotal, Cattle	**900**	**665**	**900**	**300**
Boars/Stags	0	0	0	0
Market hogs	0	0	0	0
Roaster pigs	0	0	0	0
Sows	0	0	0	0
Subtotal, Swine	**0**	**0**	**0**	**0**
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	**900**	**665**	**900**	**300**
Ducks	0	0	0	0
Geese	0	0	0	0
Mature chickens	0	0	0	0
Mature turkeys	300	0	0	0
Young chickens	300	0	0	0
Young turkeys	0	0	0	0
Subtotal, Poultry	**600**	**0**	**0**	**0**
Rabbits	0	0	0	0
Egg products	0	0	0	0
Meat and poultry retail products with milk-derived ingredients	0	0	0	0
Total, All Production Classes	**2,400**	**665**	**900**	**300**

Table 46-*continued*
Domestic Sampling Plan: Summary II
2009 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments

Production Class	Melamine	Nitrofurans	Nitroimidazoles	Sulfonamides
Beef cows	0	0	0	300
Bob veal	0	0	0	135
Bulls	0	0	0	300
Dairy cows	0	300	0	135
Formula-fed veal	0	0	0	300
Heavy calves	0	0	0	90
Heifers	0	0	0	300
non-Formula-fed veal	0	0	0	135
Steers	0	0	0	230
Subtotal, Cattle	**0**	**300**	**0**	**1,925**
Boars/stags	0	0	0	0
Market hogs	0	300	0	135
Roaster pigs	0	0	0	135
Sows	0	300	0	0
Subtotal, Swine	**0**	**600**	**0**	**270**
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	**0**	**900**	**0**	**2,195**
Ducks	0	0	0	300
Geese	0	0	0	0
Mature chickens	0	0	0	300
Mature turkeys	0	0	0	0
Young chickens	0	0	300	300
Young turkeys	0	0	300	230
Subtotal, Poultry	**0**	**0**	**600**	**1,130**
Rabbits	0	0	0	0
Egg products	0	0	0	300
Meat and poultry retail products with milk-derived ingredients	540	0	0	0
Total, All Production Classes	**540**	**900**	**600**	**3,625**

Table 46-*continued*
Domestic Sampling Plan: Summary II
2009 FSIS 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	300	0	0
Formula-fed veal	0	300	90
Heavy calves	0	0	0
Heifers	0	0	0
non-Formula-fed veal	0	300	90
Steers	0	0	0
Subtotal, Cattle	**300**	**600**	**180**
Boars/stags	0	0	0
Market hogs	0	0	0
Roaster pigs	0	0	0
Sows	0	0	0
Subtotal, Swine	**0**	**0**	**0**
Goats	0	0	0
Lambs	0	0	0
Mature sheep	0	0	0
Subtotal, Ovine	**0**	**0**	**0**
Total, All Livestock	**300**	**600**	**180**
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
Meat and poultry retail products with milk-derived ingredients	**0**	0	0
Total, All Production Classes	**300**	**600**	**180**

Table 47
Number of Samples/Product Class
2009 FSIS NRP, Import Reinspection Sampling Plan

Country	Product	Compound	Number of Samples
Canada	Pork Processed	CHC/COP	0
Croatia	Pork Processed	CHC/COP	8
Denmark	Pork Processed	CHC/COP	0
Germany	Pork Processed	CHC/COP	8
Hungary	Pork Processed	CHC/COP	8
Italy	Pork Processed	CHC/COP	8
Mexico	Pork Processed	CHC/COP	0
Netherlands	Pork Processed	CHC/COP	0
Poland	Pork Processed	CHC/COP	8
San Marino	Pork Processed	CHC/COP	8
Spain	Pork Processed	CHC/COP	8
Australia	Mutton/Lamb Processed	CHC/COP	0
Canada	Mutton/Lamb Processed	CHC/COP	0
New Zealand	Mutton/Lamb Processed	CHC/COP	0
Australia	Veal Fresh	CHC/COP	0
Canada	Veal Fresh	CHC/COP	0
New Zealand	Veal Fresh	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
Canada	Turkey Processed	CHC/COP	0
Israel	Turkey Processed	CHC/COP	8
Mexico	Turkey Processed	CHC/COP	8
Canada	Chicken Fresh	CHC/COP	82
Mexico	Chicken Fresh	CHC/COP	8
Canada	Varied combination Fresh	CHC/COP	8
Australia	Beef Fresh	CHC/COP	87
Canada	Beef Fresh	CHC/COP	82
Chile	Beef Fresh	CHC/COP	8
Costa Rica	Beef Fresh	CHC/COP	8
Honduras	Beef Fresh	CHC/COP	8
Japan	Beef Fresh	CHC/COP	8
Mexico	Beef Fresh	CHC/COP	8
New Zealand	Beef Fresh	CHC/COP	46
Nicaragua	Beef Fresh	CHC/COP	9
Uruguay	Beef Fresh	CHC/COP	38
Argentina	Beef Processed	CHC/COP	15
Australia	Beef Processed	CHC/COP	0
Brazil	Beef Processed	CHC/COP	60
Canada	Beef Processed	CHC/COP	0
Costa Rica	Beef Processed	CHC/COP	0
Mexico	Beef Processed	CHC/COP	0
Uruguay	Beef Processed	CHC/COP	0

Table 47
Number of Samples/Product Class
2009 FSIS NRP, Import Reinspection Sampling Plan

Country	Product	Compound	Number of Samples
Australia	Pork Fresh	CHC/COP	8
Canada	Pork Fresh	CHC/COP	134
Chile	Pork Fresh	CHC/COP	8
Denmark	Pork Fresh	CHC/COP	17
Finland	Pork Fresh	CHC/COP	8
Ireland	Pork Fresh	CHC/COP	8
Mexico	Pork Fresh	CHC/COP	8
Netherlands	Pork Fresh	CHC/COP	8
New Zealand	Pork Fresh	CHC/COP	8
N. Ireland	Pork Fresh	CHC/COP	8
Sweden	Pork Fresh	CHC/COP	8
UK	Pork Fresh	CHC/COP	8
Australia	Mutton/Lamb Fresh	CHC/COP	50
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	8
Canada	Chicken Processed	CHC/COP	0
Israel	Chicken Processed	CHC/COP	8
Mexico	Chicken Processed	CHC/COP	0
Canada	Othe Fowl Fresh	CHC/COP	8
France	Othe Fowl Fresh	CHC/COP	8
Canada	Horse Fresh	CHC/COP	8
Chile	Beef Fresh	Antibiotics	8
Costa Rica	Beef Fresh	Antibiotics	8
Honduras	Beef Fresh	Antibiotics	8
Japan	Beef Fresh	Antibiotics	8
Mexico	Beef Fresh	Antibiotics	8
Nicaragua	Beef Fresh	Antibiotics	9
Uruguay	Beef Fresh	Antibiotics	38
New Zealand	Beef Fresh	Antibiotics	46
Canada	Beef Fresh	Antibiotics	82
Australia	Beef Fresh	Antibiotics	87
Mexico	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
Sweden	Pork Fresh	Antibiotics	8

Table 47
Number of Samples/Product Class
2009 FSIS NRP, Import Reinspection Sampling Plan

Country	Product	Compound	Number of Samples
UK	Pork Fresh	Antibiotics	8
Denmark	Pork Fresh	Antibiotics	17
Canada	Pork Fresh	Antibiotics	134
Canada	Turkey Fresh	Antibiotics	8
Canada	Varied combination Fresh	Antibiotics	8
Australia	Veal Fresh	Antibiotics	18
Canada	Veal Fresh	Antibiotics	41
New Zealand	Veal Fresh	Antibiotics	31
Mexico	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
Mexico	Pork Fresh	Arsenicals	8
Netherlands	Pork Fresh	Arsenicals	8
New Zealand	Pork Fresh	Arsenicals	8
N. Ireland	Pork Fresh	Arsenicals	8
Sweden	Pork Fresh	Arsenicals	8
UK	Pork Fresh	Arsenicals	8
Canada	Pork Fresh	Arsenicals	15
Canada	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	9
Uruguay	Beef Fresh	Avermectins	38
New Zealand	Beef Fresh	Avermectins	46
Canada	Beef Fresh	Avermectins	82
Australia	Beef Fresh	Avermectins	87
Australia	Beef Processed	Avermectins	0
Canada	Beef Processed	Avermectins	0
Costa Rica	Beef Processed	Avermectins	0
Mexico	Beef Processed	Avermectins	0
Uruguay	Beef Processed	Avermectins	0
Argentina	Beef Processed	Avermectins	15
Brazil	Beef Processed	Avermectins	60

Table 47
Number of Samples/Product Class
2009 FSIS NRP, Import Reinspection Sampling Plan

Country	Product	Compound	Number of Samples
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	8
Australia	Mutton/Lamb Fresh	Avermectins	50
Australia	Mutton/Lamb Processed	Avermectins	0
Canada	Mutton/Lamb Processed	Avermectins	0
New Zealand	Mutton/Lamb Processed	Avermectins	0
Australia	Veal Fresh	Avermectins	18
New Zealand	Veal Fresh	Avermectins	31
Canada	Veal Fresh	Avermectins	41
Australia	Pork Fresh	β-agonist	8
Canada	Pork Fresh	β-agonist	8
Chile	Pork Fresh	β-agonist	8
Denmark	Pork Fresh	β-agonist	8
Finland	Pork Fresh	β-agonist	8
Ireland	Pork Fresh	β-agonist	8
Mexico	Pork Fresh	β-agonist	8
Netherlands	Pork Fresh	β-agonist	8
N. Ireland	Pork Fresh	β-agonist	8
New Zealand	Pork Fresh	β-agonist	8
Sweden	Pork Fresh	β-agonist	8
United Kingdom	Pork Fresh	β-agonist	8
Australia	Veal Fresh	β-agonist	18
New Zealand	Veal Fresh	β-agonist	31
Canada	Veal Fresh	β-agonist	41
Mexico	Chicken Fresh	Chloramphenicals	8
Canada	Chicken Fresh	Chloramphenicals	82
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	15
Australia	Beef Fresh	Chloramphenicol	16
Australia	Veal Fresh	Chloramphenicol	18
New Zealand	Veal Fresh	Chloramphenicol	31
Canada	Veal Fresh	Chloramphenicol	41
Australia	Beef Fresh	Florfenicol	8
Canada	Beef Fresh	Florfenicol	8

Table 47
Number of Samples/Product Class
2009 FSIS NRP, Import Reinspection Sampling Plan

Country	Product	Compound	Number of Samples
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	8
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	15
Australia	Beef Fresh	Flunixin	16
Mexico	Chicken Fresh	Nitroimidazole	8
Canada	Chicken Fresh	Nitroimidazole	82
Chile	Beef Fresh	Sulfonamides	8
Costa Rica	Beef Fresh	Sulfonamides	8
Honduras	Beef Fresh	Sulfonamides	8
Japan	Beef Fresh	Sulfonamides	8
Mexico	Beef Fresh	Sulfonamides	8
Nicaragua	Beef Fresh	Sulfonamides	9
Uruguay	Beef Fresh	Sulfonamides	38
New Zealand	Beef Fresh	Sulfonamides	46
Canada	Beef Fresh	Sulfonamides	82
Australia	Beef Fresh	Sulfonamides	87
Australia	Beef Processed	Sulfonamides	0
Canada	Beef Processed	Sulfonamides	0
Costa Rica	Beef Processed	Sulfonamides	0
Mexico	Beef Processed	Sulfonamides	0
Uruguay	Beef Processed	Sulfonamides	0
Argentina	Beef Processed	Sulfonamides	15
Brazil	Beef Processed	Sulfonamides	60
Canada	Horse Fresh	Sulfonamides	8
Australia	Pork Fresh	Sulfonamides	8
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
Sweden	Pork Fresh	Sulfonamides	8

Table 47
Number of Samples/Product Class
2009 FSIS NRP, Import Reinspection Sampling Plan

Country	Product	Compound	Number of Samples
United Kingdom	Pork Fresh	Sulfonamides	8
Denmark	Pork Fresh	Sulfonamides	17
Canada	Pork Fresh	Sulfonamides	134
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	8
San Marino	Pork Processed	Sulfonamides	8
Spain	Pork Processed	Sulfonamides	8
Canada	Turkey Fresh	Sulfonamides	8
Canada	Turkey Processed	Sulfonamides	0
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
New Zealand	Varied combination, Processed	Sulfonamides	8
Australia	Veal Fresh	Sulfonamides	18
New Zealand	Veal Fresh	Sulfonamides	31
Canada	Veal Fresh	Sulfonamides	41
Canada	Veal Processed	Sulfonamides	0
Australia	Veal Fresh	Thyreostats	18
New Zealand	Veal Fresh	Thyreostats	31
Canada	Veal Fresh	Thyreostats	41
Australia	Veal Fresh	Zeranol	18
New Zealand	Veal Fresh	Zeranol	31
Canada	Veal Fresh	Zeranol	41
Total			**4217**

Table 48

Number of Compounds/Production Class

2009 FSIS NRP, Import Reinspection Sampling Plan

Compound	AB	AVM	AS	CHMP	FLORF	FLNX	β-agonist	THY	NTM	SLF	ZRNL	CHC/COP	Total
Beef, fresh	302	302		96	80	96				302		302	1480
Beef, processed		75								75		75	225
Horse, fresh	8									8		8	24
Pork, fresh	231		103				96			231		231	892
Pork, processed										56		56	112
Veal, fresh	90	90		90			90	90		90	90		630
Veal, processed													0
Lamb/Mutton, fresh		82										82	164
Lamb/Mutton, processed													0
Goat, fresh		24										24	48
Turkey , fresh	8		8	8						8		8	40
Chicken, fresh	90		90	90					90			90	450
Chicken, processed			8									8	16
Other fowl, fresh	16											16	32
Turkey, processed			16							16		16	48
Varied combination, fresh	8									8		8	24
Varied combination, processed										32		0	32
Eggs, processed													0
Total/country	**753**	**573**	**225**	**284**	**80**	**96**	**186**	**90**	**90**	**826**	**90**	**924**	**4,217**

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

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

CHC/COP =Chlorinated hydrocarbons/Organophosphates

Table 49
Number of Samples/Country Product Class
2009 FSIS 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		45																**45**
Australia	388			40		126	100		16								8	**678**
Brazil		180																**180**
Canada	366		24	425		287	16			40	410		16			24		**1608**
Chile	56			40														**96**
Costa Rica	56																	**56**
Croatia					16													**16**
Denmark				67														**67**
Finland				40														**40**
France													16				8	**24**
Germany					16													**16**
Honduras	56																	**56**
Hungary					16													**16**
Iceland							16											**16**
Ireland				40														**40**
Israel												16			24			**40**
Italy					16													**16**
Japan	56																	**56**
Mexico	56			40			16		16		40				24		8	**200**
Netherlands				40														**40**
New Zealand	210			40		217	16		16								8	**507**
Nicaragua	60																	**60**
N. Ireland				40														**40**
Poland					16													**16**
San Marino					16													**16**
Spain					16													**16**
Sweden				40														**40**
United Kingdom				40														**40**
Uruguay	176																	**176**
Total	**1480**	**225**	**24**	**892**	**112**	**630**	**164**	**0**	**48**	**40**	**450**	**16**	**32**	**0**	**48**	**24**	**32**	**4217**

Table 50
Combined Summary
2009 FSIS NRP, Domestic and Import Scheduled Sampling and Exploratory Assessments

Lab	*Analysis*	*Number of Scheduled Domestic Samples*	*Number of Scheduled Imported Samples*	*Number of Scheduled Samples for Exploratory Assessments*	*Total Number of Samples*	*Notes*
ML	Antibiotics[1]	5,550	753		6,303	*Domestic Scheduled Sampling*: 300, 300, 300, 300, 300, 45, 300, 45, 90, 90, 300, 300, 300, 300, 300, 135, 45, 300, 300, 300, 300, 300, and 300 samples are scheduled for beef cows, boars/stags, bob veal, bulls, dairy cows, ducks, formula-fed veal, geese, goats, heavy calves, heifers, lambs, market hogs, mature chickens, mature turkeys, non-formula-fed veal, rabbits, roaster pigs, sheep, sows, steers, young chickens, and young turkeys, respectively.
						Import Reinspection Sampling: 302, 90, 8, 231, 16, 8, 8, and 90 samples are scheduled for fresh beef, fresh chicken, fresh horse, fresh pork, fresh other fowl, fresh turkey, fresh varied combination, and fresh veal, respectively.
EL	Arsenicals	1,500	225		1,725	*Domestic Scheduled Sampling*: 300, 300, 300, 300, and 300 samples are scheduled for beef cows, egg products, market hogs, mature turkeys, and young chickens, respectively.
						ImportReinspection Sampling: 90, 8, 103, 8, and 16 samples are scheduled for fresh chicken, processed chicken, fresh pork, fresh turkey, and processed turkey, respectively.
EL	Avermectins	2,365	573		2,938	*Domestic Scheduled Sampling*: 300, 230, 300, 135, 135, 300, 300, 300, 135, and 230 samples are scheduled for beef cows, bulls, formula-fed veal, goats, heavy calves, lambs, market hogs, mature sheep, non-formula-fed veal, and steers, respectively.
						Import Reinspection Sampling: 302, 75, 24, 82, and 90 samples are scheduled for fresh beef, processed beef, fresh goat, fresh lamb/mutton, and fresh veal, respectively

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

Table 50 - *Continued*
Combined Summary
2009 FSIS NRP, Domestic and Import Scheduled Sampling and Exploratory Assessments

Lab	*Analysis*	*Number of Scheduled Domestic Samples*	*Number of Scheduled Imported Samples*	*Number of Scheduled Samples for Exploratory Assessments*	*Total Number of Samples*	*Notes*
WL	ß -Agonists[2]	690	186		876	*Domestic Scheduled Sampling*: 90, 300, and 300 samples are scheduled for goats, non- formula- fed veal and steers, respectively. *Import Reinspection Sampling*: 96 and 90 samples are scheduled for fresh pork, and fresh veal, respectively.
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 NRP
EL	Chloramphe-nicol	1,500	284		1,784	*Domestic Scheduled Sampling*: 300, 300, 300, 300, and 300 samples are scheduled for bob veal, dairy cows, young chickens, mature turkeys, and steers, respectively. *Import Reinspection Sampling*: 96, 90, 8, and 90 samples are scheduled for fresh beef, fresh chicken, fresh turkey, and fresh veal, respectively.
WL	CHCs/COPs	1,440	924		2,364	*Domestic Scheduled Sampling*: 135,135,135, 300, 300, 300, and 135 samples are scheduled for boars/stags, goats, lambs, market hogs, roaster pigs, steers, and mature sheep, respectively. *Import Reinspection Sampling*: 303, 75, 8, 230, 56, 82, 24, 8, 90, 8 16, 16, and 8 samples are scheduled for fresh beef, processed beef, fresh horse, fresh pork, processed pork, fresh lamb/mutton, fresh goat, fresh turkey, fresh chicken, processed chicken, processed turkey, fresh other owl, and fresh varied combination, respectively.
EL	Florfenicol	665	80		745	*Domestic Scheduled Sampling*: 300, 230, and 135 samples are scheduled for dairy cows, formula-fed veal, and non-formula-fed veal, respectively. *Import Reinspection Sampling*: 80 samples are scheduled for fresh beef.
ML (dom.) WL (import)	Flunixin	900	96		996	*Domestic Scheduled Sampling*: 300, 300, and 300 samples are scheduled for beef cows, dairy cows, and heavy calves, respectively. *Import Reinspection Sampling*: 96 samples are scheduled for fresh beef.
EL	Lead and Cadmium			300	300	*Exploratory Assessment*: 300 dairy cow samples are scheduled. *Import Reinspection Sampling*: No samples are scheduled for 2009 NRP.

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

Table 50 - *Continued*
Combined Summary
2009 FSIS NRP, Domestic and Import Scheduled Sampling and Exploratory Assessments

Lab	*Analysis*	*Number of Scheduled Domestic Samples*	*Number of Scheduled Imported Samples*	*Number of Scheduled Samples for Exploratory Assessments*	*Total Number of Samples*	*Notes*
FSIS FERN Lab	Melamine			540	540	*Exploratory Assessment*: 540 meat and poultry retail samples with milk derived ingredients are scheduled.
WL	Nitrofurans	900			900	*Domestic Scheduled Sampling*: 300, 300, and 300 samples are scheduled for dairy cows, market hogs, and sows, respectively. *Import Reinspection Sampling*: No samples are scheduled for the 2009 NRP.
EL	Nitroimida-zoles	600	90		690	*Domestic Scheduled Sampling*: 300 samples each are scheduled for young chickens and young turkeys, respectively. *Import Reinspection Sampling*: 90 samples are scheduled for fresh chicken.
EL	Sulfonamides	3,625	826		4,451	*Domestic Scheduled Sampling*: 300, 135, 300, 135, 300, 300, 300, 90, 300, 135, 300, 135, 135, 230, 300, and 230 samples are scheduled for beef cows, bob veal, bulls, dairy cows, ducks, egg products, formula-fed veal, heavy calves, heifers, market hogs, mature chickens, non- formula fed veal, roaster pigs, steers, young chickens, and young turkeys, respectively. *Import Reinspection Sampling*: 302, 75, 8, 231, 56, 8, 16, 8, 32, and 90 samples are scheduled for fresh beef, processed beef, fresh horse, fresh pork, processed pork, fresh turkey, processed turkey, fresh varied combination, processed varied combination, and fresh veal, respectively.
EL	Thyreostats	300	90		390	*Domestic Scheduled Sampling*: 300 samples are scheduled for dairy cows. *Import Reinspection Sampling*: 90 samples are scheduled for fresh veal
ML	Xenobiotic hormones (Zeranol and Trenbolone)	780	90		870	*Domestic Scheduled Sampling*: 390 samples are scheduled for formula-fed veal (300 trenbolone and 90 zeranol) 390 samples are scheduled for non- formula-fed veal (300 trenbolone and 90 zeranol) *Import Reinspection Sampling*: 90 samples are scheduled for fresh veal (zeranol only).
Total		**21,275**	**4,217**	**840**	**26,332**	

Key:

Table 50 - *Continued*
Combined Summary
2009 FSIS NRP, Domestic and Import Scheduled Sampling and Exploratory Assessments

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
FSIS FERN Lab = Athena, GA

2008 NRP Sampling Plan

Adjustments

The following are the major adjustments made to the 2008 FSIS NRP:

- Geese are scheduled for antibiotic testing.
- Market hogs and young chickens are scheduled for arsenic testing.
- More production classes are scheduled for antibiotics in the Domestic Scheduled Sampling Plan. Nineteen production classes were scheduled in 2008 while 23 production classes are scheduled in the 2009 NRP.
- Melengestrol acetate has been rotated out for the 2009 – 2011 National Residue Programs.
- Melamine is scheduled to be tested in meat and poultry retail products containing milk-derived ingredients.
- Trenbolone and zeranol were ranked as the class xenobiotic hormones.
- The Kidney Inhibition Swab (KIS™) test has been implemented as an in-plant screen test according to FSIS Notice 50-09, ”Using the Kidney Inhibition Swab (KIS™) Test to Detect Antimicrobial Drug Residues in Cattle in Selected Establishments.” Starting July 20, 2009, the Agency will begin to replace the Fast Antimicrobial Screen Test (FAST) with the Kidney Inhibition Swab (KIS™) Test in phases. The first phase will involve 101 designated cattle slaughter establishments.

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
Melamine	Meat and poultry retail products containing milk-derived ingredients	At least one (1) pound in its retail package	FSIS FERN Lab[4]
Nitrofurans	Liver	1	WL
Nitroimidazoles	Muscle	1	EL
Sulfonamides	Liver, muscle	1	EL
Thyreostats	Muscle	1	EL
Trenbolone	Liver, muscle	1	ML

[1] FSIS Midwestern Laboratory
[2] FSIS Eastern Laboratory
[3] FSIS Western Laboratory
[4] FSIS FERN Lab-Athens, GA

Table A-I			
Residue Tissue	**Analyzed**	**Quantity (lb)**	**Lab**
Zeranol	Liver, muscle	1	ML

Appendix II

FSIS Laboratory Analytical Methods

FSIS Laboratory Analytical Methods

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

Table AII
Analytical Methods
2009 National Residue Program

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

Table AII *(continued)*
Analytical Methods
2009 National Residue Program

Compound Class	*Compound*	*Analytical Method*			*Minimum Proficiency Level* [a]		
		Screen	*Determinative (quantitative)*	*Confirmatory (identification)*	*Screen*	*Determinative (quantitative)*	*Confirmatory (identification)*
Antibiotics: Macrolides	Clindamycin	7-Plate Bioassay		HPLC/MS-MS			0.1 ppm
	Erythromycin		Bioassay			0.25 ppm	0.1 ppm
	Lincomycin						0.1 ppm
	Pirlimycin						0.1 ppm
	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 *(continued)*
Analytical Methods
2009 National Residue Program

Compound Class	***Compound***	***Analytical Method***			***Minimum Proficiency Level*** [a]		
		Screen	***Determinative (quantitative)***	***Confirmatory (identification)***	***Screen***	***Determinative (quantitative)***	***Confirmatory (identification)***
Antibiotics: Fluoroquinolones	Ciprofloxacin	7-Plate Bioassay		HPLC/MS-MS			25 ppb
	Danofloxacin						
	Desethylene diprofloxacin						
	Desmethyl danofloxacin						
	Difloxacin						
	Enrofloxacin						
	Norfloxacin						
	Sarafloxacin						
Arsenicals	Arsenicals		AAS	AAS		0.2 ppm	0.2 ppm
Avermectins	Ivermectin		HPLC	HPLC/APCI-MS		7.5 ppb	25 ppb
	Doramectin						
	Moxidectin						
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
Heavy metals	Cadmium			ICP/MS			10 ppb
	Lead						25 ppb

Table AII *(continued)*
Analytical Methods
2009 National Residue Program

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

Table AII *(continued)*
Analytical Methods
2009 National Residue Program

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

Table AII *(continued)*
Analytical Methods
2009 National Residue Program

Compound Class	Compound	Analytical Method			Minimum Proficiency Level [a]		
		Screen	Determinative (quantitative)	Confirmatory (identification)	Screen	Determinative (quantitative)	Confirmatory (identification)
CHCs/COPs/PCBs (continued)	Hexachlorobenzene (HCB)	GC-ECD	GC-ECD		0.10 ppm	0.10 ppm	
	Heptachlor epoxides				0.10 ppm	0.10 ppm	
	Heptachlor				0.03 ppm	0.10 ppm	
	Kepone				0.06 ppm		
	Lindane				0.10 ppm	0.10 ppm	
	Linuron				0.50 ppm		
	Methoxychlor				0.50 ppm	0.50 ppm	
	Mirex				0.10 ppm	0.10 ppm	
	Trans-Nonachlor				0.15 ppm	0.15 ppm	
	o,p'-TDE				0.15 ppm		
	o,p'-DDT				0.15 ppm		
	o,p'-DDE				0.10 ppm		
	Oxychlordane				0.04 ppm	0.04 ppm	
	p,p'-DDE				0.10 ppm	0.10 ppm	
	p,p'-DDT				0.10 ppm	0.15 ppm	
	p,p'-TDE				0.10ppm	0.15 ppm	
	PCB 1260				0.50 ppm	0.50 ppm	
	PCB 1254				0.50 ppm	0.50 ppm	
	Phosalone				0.02 ppm		
	Poly brominated biphenyls				0.10 ppm		
	Ronnel				0.03 ppm	0.03 ppm	
	Stirofos				0.04 ppm	0.06 ppm	
	Toxaphene				1.00 ppm	1.00 ppm	
	trans-chlordane				0.0.4 ppm	0.30 ppm	
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 *(continued)*
Analytical Methods
2009 National Residue Program

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

Key:

AA = Atomic Absorption Spectroscopy
APCI = Atmospheric Pressure Chemical Ionization
B = Bovine
CHCs = Chlorinated hydrocarbons
COPs = Chlorinated organophosphates
ECD = Electron Capture Detection
ELISA = Enzyme Linked Immunosorbent Assay
GC = Gas Chromatoraphy
GPC = Gel Permeation Chromatography
HPLC = high performance liquid chromatography
K = Kidney
L = Liver
M = Muscle
Method detection limit = The lowest quantity of residue (or sample component) that can be reliably observed or found in the sample matrix by the analytical methodology used.
MS = Mass Spectroscopy
NA = not applicable
PCBs = Polychlorinated biphenyls
ppb = parts per billion
ppm = parts per million
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
2009 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*).