

**2007 FSIS National  
Residue Program  
Scheduled Sampling Plans**

# **2007 FSIS National Residue Program Scheduled Sampling Plans**

*Dedicated to the memory of William Randall Sutton, PhD  
(June 22, 1954 -- September 25, 2007)  
Esteemed co-worker and friend*

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

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## **Preface**

The Food Safety and Inspection Service (FSIS) National Residue Program (NRP), *Blue Book* is a summary of the scheduled domestic and import sampling plans and includes a summary of adjustments to the 2006 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 Zoonotic Diseases and Residue Surveillance Division, Residue Branch, 344 Aerospace Center, 1400 Independence Avenue, SW, Washington, DC 20250-3700, telephone (202) 690-6566, 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.

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

Since 1967, FSIS has administered the NRP to collect data on chemical residues in domestic and imported meat, poultry, and egg products. The NRP is designed to provide: (1) a structured process for identifying and evaluating compounds of concern by production class; (2) statistical analyses of compounds of concern; (3) appropriate regulatory follow-up of reports of violative tissue residues; and (4) collection, analyses, 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 40 CFR.

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

The NRP includes a variety of sampling plans to identify violative levels of chemical residues and to reduce the consumers' exposure to chemical contaminants. The range of chemical compounds evaluated for inclusion in the various NRP sampling plans is comprehensive. It includes approved (legal) and unapproved (illegal) veterinary drugs, pesticides that may appear in meat, poultry and egg products, and other xenobiotic and endogenous 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. 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 retained and condemned 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 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 the agency 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, serve as a deterrent for violators, and enables FSIS to make better use of resources.

Data gathered in the NRP is 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.

# Components of the National Residue Program

The NRP is comprised of sampling plans to address chemical and drug residues in domestic and imported food animal and egg products. All products, whether domestic or imported, must fall within the tolerance levels set by Food and Drug Administration (FDA) and Environmental Protection Agency (EPA).

## I. Domestic Sampling Plan

- *Scheduled sampling* is a process for the determination of compounds of concern, pairing compounds of concern with production classes, and sample numbers for compound-production class pairs. Compound-production class pairs are determined at Surveillance Advisory Team (SAT) and FSIS Residue Branch determines sample numbers. Residue Branch staff employ statistical analysis techniques to calculate sample numbers. Beginning with the 2006 NRP, FSIS uses sample sizes of either 230 or 300 for each compound-production class pair. Statistically, applying sampling rates of 230 and 300 assures a probability of detecting a residue violation (if the true violation rate among healthy appearing animals is 1 percent) of 90 and 95%, respectively. Residue Branch has adopted a sample size of 300 as a public health standard for determining if HACCP is effective. FSIS Senior Management, FSIS Laboratories, the FDA, and the EPA review and make a final determination of sample numbers. Scheduled sampling<sup>1</sup> is applied to healthy appearing food animals and egg products for the following types of assessments:
  - *Exposure Assessments* are designed to determine the prevalence of residues in the nation's food supply. Residue samples collected for exposure assessments are subject to voluntary retention by industry, condemnation by FSIS, and voluntary recall by industry, and by FDA for regulatory action when a sample contains violative levels of residues.
  - *Exploratory Assessments* are designed by Residue Branch to investigate violations identified in exposure assessments, compounds that have no established tolerances, and when suggested by intelligence from the field. Exploratory assessments could be subjected to mandatory retention by FSIS, condemnation by FSIS, and voluntary recalls by FSIS.
- *Inspector generated sampling* is not scheduled and is not directed by FSIS Headquarters. Inspector generated sampling is conducted by in-plant public health veterinarians, using FSIS Form 10,000-2, when there is reason to believe that an animal may have violative levels of residues. Currently, inspector generated sampling targets *individual suspect animals* and *suspect populations of animals*. In inspector generated sampling, the carcass is retained pending the results of laboratory testing and a carcass that is found to contain violative levels of residues is condemned.
  - *Sampling for individual suspect animals* is performed in-plant using one of the available residue screening tests: Fast antimicrobial screening test (FAST) and swab test on premises (STOP). FAST and STOP are used only for the detection of antimicrobial and sulfonamide residues. If the result of a screening test is positive, the sample is sent to an FSIS laboratory for confirmation. The in-plant inspector selects a carcass for sampling based on professional judgment, and public health criteria developed by FSIS. These criteria include animal disease signs and symptoms, producer history, and results from random scheduled

sampling. In 2007, STOP will be phased out and FAST will become the only screening test for in-plant use.

- *Sampling for suspect animal populations* is generally directed by regulation, directive, or a notice (e.g. show animals and bob veal).

## **II. Import Sampling Plan**

Animal and egg products imported to the US have passed inspection in their country; therefore, import sampling is reinspection. The levels of reinspection are:

- *Normal sampling*, which is defined as random sampling from a lot;
- *Increased sampling (random sampling)*, which is defined as above the normal sampling as the result of an Agency management decision; and
- *Intensified sampling (biased sampling)*, which is defined as occurring when a previous sample for a type of inspection 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 retain the lot pending the laboratory results. For intensified sampling, the lot must be held pending laboratory results. The level of reinspection that is applied depends on the country's performance history. The data obtained from laboratory analysis are entered into an FSIS Data Base System, the Automated Import Information System (AIIS). Import sampling is designed to verify that the chemical residue programs in countries exporting meat, poultry, or egg products to the U.S. are equivalent to those in the U.S.

<sup>1</sup>*Domestic samples are scheduled by FSIS on FSIS Form 10,201-3. This form directs public health veterinarians to collect tissue samples for laboratory analysis for a determination of residue levels.*

**Summary Table I**  
**Status of the Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) Prohibited Drugs**  
**2007 FSIS NRP – Domestic and Import Sampling**

<i>AMDUCA</i> <sup>1</sup> Prohibited Drug	<i>Scheduled Samples</i>		<i>Total</i>
	<i>Domestic</i>	<i>Import</i>	
Avoparcin (glycopeptide)	Not in the 2007 NRP.	Not in the 2007 NRP.	
Chloramphenicol	300 samples each are scheduled for dairy cows, formula-fed veal, young chickens, and young turkeys.	78, 90, 16, and 8 samples are scheduled for fresh beef, veal, turkey, and chicken, respectively.	1,392
<i>beta</i> -Agonists <sup>2</sup>	300 samples each are scheduled for heifers, formula-fed veal, non-formula-fed veal, and market hogs. Confirmation performed by FDA.	90 and 30 samples are scheduled for veal and pork fresh, respectively.	1,320
Diethylstilbestrol <sup>3</sup>	Not in the 2007 NRP.	Not in the 2007 NRP.	
Fluoroquinolones <sup>4</sup>	Not in the 2007 NRP.	Not in the 2007 NRP.	
Nitrofurans <sup>5</sup>	300 samples each are scheduled for market hogs, sows, and roaster pigs.	No samples are scheduled for the 2007 NRP.	900
Nitroimidazoles <sup>6</sup>	300 samples are scheduled for young chickens.	8 samples are scheduled for fresh chicken	308
Phenylbutazone <sup>7</sup>	No samples are scheduled for the 2007 NRP.	No samples are scheduled for the 2007 NRP.	

**Summary Table I**  
**Status of the Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) Prohibited Drugs**  
**2007 FSIS NRP – Domestic and Import Sampling**

<i>AMDUCA<sup>1</sup> Prohibited Drug</i>	<i>Scheduled Samples</i>		<i>Total</i>
	<i>Domestic</i>	<i>Import</i>	
Ronidazole	Not in the 2007 NRP.	Not in the 2007 NRP.	
Vancomycin	Not in the 2007 NRP.	Not in the 2007 NRP.	

<sup>1</sup> 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.

<sup>2</sup> 1200 animals will be sampled in the FSIS domestic program. A pound of liver will be collected and sent to WL for screening and confirmation by HPLC/MS/MS. This method detects beta-agonists, clenbuterol, salbutamol, cimaterol, and ractopamine, in bovine, porcine, ovine, and caprine liver and bovine retina. Note that although the method is validated for retina, eye balls are not being collected for the 2007 NRP. FSIS has completed validation work to extend the method to muscle and plans to add zilpaterol.

<sup>3</sup> Xenobiotic hormone.

<sup>4</sup> The fluoroquinolones, enrofloxacin and danofloxacin, are approved for use steers and heifers.

<sup>5</sup> Furazolidone and nitrofurazone; antimicrobials.

<sup>6</sup> Nitroimidazoles in the FSIS multi residue method (MRM) are dimetridazole and ipronidazole; antiprotozoal

<sup>7</sup> Although not in the FSIS Scheduled sampling plan for 2007, testing for phenylbutazone will be conducted for inspector generated samples found FAST positive.

**Summary Table II  
Rank and Status of Veterinary Drugs  
2007 FSIS NRP – Domestic and Import Scheduled Sampling**

Rank	Veterinary Drug	Score	Scheduled Samples		Total
			Domestic	Import	
1	Antibiotics <sup>1</sup>	15.0	300, 300, 300, 300, 230, 230, 230, 300, 300, 90, 300, 300 samples are scheduled for beef cows, dairy cows, heifers, formula-fed veal, non-formula-fed veal, heavy calves, roaster pigs, boars and stags, sows, equine, young chickens, and young turkeys <sup>2</sup> , respectively.	657 samples are scheduled for fresh beef, fresh pork, fresh veal, fresh turkey, fresh chicken, and fresh varied combo.	3,769
2	Carbadox <sup>3</sup>	15.0	300 samples each are scheduled for market hogs and roaster pigs.	No samples are scheduled for the 2007 NRP.	600
3	Avermectins <sup>4</sup>	14.0	300, 300, 300, 300, 300, 230, 230, 230, 230, and 90 samples are scheduled for steers, heifers, dairy cows, bulls, heavy calves, non-formula-fed veal, sheep, lambs, goats, and equine, respectively.	583 samples are scheduled for fresh beef, processed beef, fresh veal, fresh lamb and mutton, and fresh goat.	3,093
4	Thyreostats <sup>5</sup>	12.3	300 samples are scheduled for formula-fed veal.	90 samples are scheduled for fresh veal.	390
5	Sulfonamides <sup>6</sup>	12.0	300 samples each are scheduled for market hogs, steers, dairy cows, beef cows, bulls, mature turkeys, bob veal, roaster pigs, non-formula-fed veal, young chickens, young turkeys, sheep, lambs, goats and heavy calves, respectively.	836 samples are scheduled for fresh beef, processed beef, fresh pork, processed pork, fresh veal, fresh turkey, processed turkey, fresh varied combo, and processed varied combo.	5,536
6	Zeranol <sup>7</sup>	12.0	230 samples are scheduled for formula-fed veal.	90 samples each are scheduled for fresh veal.	320
7	Berenil <sup>8</sup>	11.4	No samples are scheduled for the 2007 NRP.	No samples are scheduled for the 2007 NRP.	



**Summary Table II (continued)**  
**Rank and Status of Veterinary Drugs**  
**2007 FSIS NRP – Domestic and Import Sampling**

<i>Rank</i>	<i>Veterinary Drug</i>	<i>Score</i>	<i>Scheduled Samples</i>		<i>Total</i>
			<i>Domestic</i>	<i>Import</i>	
8	Dipyron <sup>9</sup>	11.4	Not in the 2007 NRP	Not in the 2007 NRP	
9	Florfenicol <sup>10</sup>	10.5	300, 300, and 230 samples are scheduled for dairy cows, formula-fed veal, and non-formula-fed veal, respectively.	45 samples are scheduled for fresh beef.	875
10	Thiamphenicol <sup>11</sup>	7.6	Not in the 2007 NRP	Not in the 2007 NRP	
11	Methyl prednisone <sup>12</sup>	7.2	Not in the 2007 NRP	Not in the 2007 NRP	
12	Dexamethasone <sup>13</sup>	7.2	No samples are scheduled for the 2007 NRP.	No samples are scheduled for the 2007 NRP.	
13	Flunixin <sup>14</sup>	7.0	No samples are scheduled for the 2007 NRP	78 samples are scheduled for fresh beef.	78
14	Trenbolone	6.7	230 samples are scheduled for formula-fed veal.	No samples are scheduled for the 2007 NRP.	230
15	Amprolium <sup>15</sup>	6.4	Not in the 2007 NRP	Not in the 2007 NRP	

**Summary Table II (continued)**  
**Rank and Status of Veterinary Drugs**  
**2007 FSIS NRP – Domestic and Import Sampling**

<i>Rank</i>	<i>Veterinary Drug</i>	<i>Score</i>	<i>Scheduled Samples</i>		<i>Total</i>
			<i>Domestic</i>	<i>Import</i>	
16	Prednisone <sup>16</sup>	6.4	Not in the 2007 NRP	Not in the 2007 NRP	
17	Etodolac <sup>17</sup>	6.4	Not in the 2007 NRP	Not in the 2007 NRP	
18	Clorsulon <sup>18</sup>	5.1	Not in the 2007 NRP	Not in the 2007 NRP	
19	Arsenicals <sup>19</sup>	4.5	300 samples each are scheduled for market hogs and young chickens. <sup>20</sup>	145 samples each are scheduled for fresh pork, fresh turkey, fresh chicken, processed chicken, and processed turkey.	445
20	Eprinomectin	4.4	Not in the 2007 NRP	Not in the 2007 NRP	
21	Hormones (naturally-occurring) <sup>21</sup>	4.4	Not in the 2007 NRP	Not in the 2007 NRP	
22	Lasalocid <sup>22</sup>	4.3	Not in the 2007 NRP.	Not in the 2007 NRP	
23	Halofuginone <sup>23</sup>	3.8	Not in the 2007 NRP	Not in the 2007 NRP	

**Summary Table II (continued)**  
**Rank and Status of Veterinary Drugs**  
**2007 FSIS NRP – Domestic and Import Sampling**

Rank	Veterinary Drug	Score	Scheduled Samples		Total
			Domestic	Import	
24	Benzimidazoles <sup>24</sup>	3.6	Not in the 2007 NRP	Not in the 2007 NRP	
25	Levamisole <sup>25</sup>	3.5	Not in the 2007 NRP	Not in the 2007 NRP	
26	Melengesterol acetate <sup>26</sup> (MGA)	3.0	300 samples are scheduled for heifers.	No samples are scheduled for the 2007 NRP.	300
27	Veterinary tranquilizers <sup>27</sup>	2.9	Not in the 2007 NRP	Not in the 2007 NRP	
28	Nicarbazin <sup>28</sup>	2.9	Not in the 2007 NRP	Not in the 2007 NRP	
29	β-Agonists	2.8	300 samples each are scheduled for heifers, formula-fed veal and non-formula-fed veal, and market hogs.	90 and 30 samples are scheduled for fresh veal and fresh pork, respectively.	1,320
30	Morantel and pyrantel	2.2	Not in the 2007 NRP	Not in the 2007 NRP	

<sup>1</sup> At present, the following antibiotics are quantitated using the 7-plate bioassay after a specific identification is made using mass spectroscopy (MS) or using high performance liquid chromatography (HPLC): tetracycline, oxytetracycline, chlortetracycline, gentamicin, streptomycin, dihydrostreptomycin, erythromycin, tylosin, neomycin, beta-lactams (quantitated as penicillin-G; penicillins and cephalosporins are not differentiated within this category), and tilmicosin (quantitated by HPLC). The following antimicrobials can be identified by MS; however, no quantitative methods are available: spectinomycin, hygromycin, amikacin, kanamycin, apramycin, tobramycin, lincomycin, pirlimycin, clindamycin, and oleandomycin.

**Summary Table II (continued)**  
**Rank and Status of Veterinary Drugs**  
**2007 FSIS NRP – Domestic and Import Sampling**

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<sup>2</sup> Young chickens and young turkeys have a 0% violation rate for antibiotics for the 3 year period (2001-2003). These production classes were rotated back into the scheduled sampling program for 2007 based on the expert opinion of the Surveillance Advisory Team (SAT).

<sup>3</sup> Antimicrobial.

<sup>4</sup> Doramectin, ivermectin, and moxidectin; Antiparasitic.

<sup>5</sup> Includes thiouracil.

<sup>6</sup> Sulfonamides in the FSIS multi-residue method (MRM): Sulfapyridine, sulfadiazine, sulfathiazole, sulfamerazine, sulfamethazine, sulfachloropyridazine, sulfadoxine, sulfamethoxyypyridazine, sulfaquinoxaline, sulfadimethoxine, sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfabromomethazine, sulfasalazine, sulfaethoxyypyridazine, sulfaphenazole, and sulfatroxazole; Antimicrobials, some are coccidiostats; FDA has not set a tolerance for the following sulfonamides: sulfapyridine, sulfadiazine, sulfadoxine, sulfamethoxyypyridazine, sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfasalazine, sulfaphenazole, and sulfatroxazole.

<sup>7</sup> Xenobiotic hormone

<sup>8</sup> Antiprotozoal.

<sup>9</sup> Non-Steroidal Anti-Inflammatory Drug (NSAID).

<sup>10</sup> Chloramphenicol derivative.

<sup>11</sup> Chloramphenicol derivative

<sup>12</sup> Glucocorticoid.

<sup>13</sup> Glucocorticoid.

<sup>14</sup> Non-Steroidal Anti-Inflammatory Drug (NSAID).

<sup>15</sup> Coccidiostat

<sup>16</sup> Glucocorticoid

<sup>17</sup> Non-Steroidal Anti-Inflammatory Drug (NSAID).

<sup>18</sup> Anthelmintic, Trematodes

<sup>19</sup> Detected as As

<sup>20</sup> Beef cows, market hogs, roaster pigs, boars and stags, sows, mature chickens, and mature turkeys have a 0% violation rate for arsenic for the 3 year period (2001-2003). These production classes were rotated back into the scheduled sampling program for 2006 based on the expert opinion of the Surveillance Advisory Team (SAT).

<sup>21</sup> 17-Estradiol, testosterone, and progesterone

<sup>22</sup> Coccidiostat

<sup>23</sup> Antiprotozoal, coccidiostat

<sup>24</sup> 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

<sup>25</sup> Anthelmintic

<sup>26</sup> Xenobiotic hormone

<sup>27</sup> Azaperone and its metabolite azaperol, xylazine, haloperidol, acetopromazine, propionylpromazine, and chlorpromazine

<sup>28</sup> Coccidiostat

**Summary Table III  
Rank and Status for Pesticides  
2006 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Rank</i>	<i>Compound / Compound Class<sup>1</sup></i>	<i>Score</i>	<i>Status in the 2007 NRP</i>		<i>Total</i>
			<i>Domestic</i>	<i>Import</i>	
1	Benzimidazole Pesticides – those compounds in the FSIS multi-residue method (MRM) <sup>2</sup>	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
2	Imazalil	16.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
3	Arsanilic acid	13.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
4	1,2,4-Triazole	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
5	Propiconazole metabolite 1,2,4-triazole	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
6	Triazole analine	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
7	Triazole lactic acid	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

*Based on Surveillance Advisory Team (SAT) expert opinion, compounds above this point represent more of a potential public health risk than is indicated by their priority scores.*

**Summary Table III (continued)**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic	Import	
8	Chlorinated hydrocarbons (CHCs) and chlorinated organophosphates (COPs) – those compounds in the FSIS multi-residue method (MRM) <sup>3</sup>	16.0	90, 300, 300, 300, 300, 300, 230, 230, and 230 samples are scheduled for equine, heifers, dairy cows, beef cows, sows, boars and stags, goats, sheep, and lambs, respectively.	908 samples are scheduled for fresh and processed beef, fresh and processed pork, fresh and processed lamb mutton, fresh goat, fresh turkey, fresh and processed chicken, processed turkey, and fresh and processed varied combo	3,188
9	Chlorinated organophosphates (COPs) and organo phosphates (OPs) - those compounds not in FSIS COP and OP multi-residue method (MRM) <sup>4</sup>	16.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
10	Triazines – those compounds not in FSIS triazine multi-residue method (MRM) <sup>5</sup>	15.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
11	Carbamates – those compounds in the FSIS carbamate triazine multi-residue method (MRM) <sup>6</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
12	Synthetic Pyrethrins – those compounds in the FSIS synthetic pyrethrin multi-residue method (MRM) <sup>7</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
13	1-(2,4-Dichlorophenyl)-2-(1H-imidazole-1-yl)-1-ethanol <sup>8</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
14	1,1-(2,2-Dichloroethylidene)bis(4-methoxybenzene) <sup>9</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Summary Table III (continued)**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Rank</i>	<i>Compound / Compound Class<sup>1</sup></i>	<i>Score</i>	<i>Status in the 2007 NRP</i>		<i>Total</i>
			<i>Domestic</i>	<i>Import</i>	
15	1-Methoxy-4-(1,2,2,2-tetrachloroethyl)benzene) <sup>10</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
16	3-(1-(2,4-Dichlorophenyl)-2-(1H-imidazole-1-yl)ethoxy)-1,2-propane diol <sup>11</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
17	Cyhalothrin, lambda	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
18	Fipronil <sup>12</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
19	MB45950	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
20	MB46513	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
21	Methoxychlor olefin	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Summary Table III (continued)**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

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<sup>1</sup> Only those pesticides that have been designated as representing a broad potential public health risk are included in this summary table. For a complete list of pesticides that were considered for the 2007 NRP, see Table 30.

<sup>2</sup> 5-Hydroxythiabendazole, benomyl (as carbendazim), and thiabendazole.

<sup>3</sup> HCB, alpha-BHC, lindane, heptachlor, dieldrin, aldrin, endrin, ronnel, linuron, oxychlorane, chlorpyrifos, nonachlor, heptachlor epoxide A, heptachlor epoxide B, endosulfan I, endosulfan I sulfate, endosulfan II, trans-chlordane, cis-chlordane, chlorfenvinphos, p,p'-DDE, p, p'-TDE, o,p'-DDT, p,p'-DDT, carbophenothion, captan, tetrachlorvinphos [stirofos], kepone, mirex, methoxychlor, phosalone, coumaphos-O, coumaphos-S, toxaphene, famphur, PCB 1242, PCB 1248, PCB 1254, PCB 1260, dicofol\*, PBBs\*, polybrominated diphenyl ethers\*, deltamethrin\* (\*identification only).

<sup>4</sup> Regulatory method is needed: Azinphos-methyl, azinphos-methyl oxon, chlorpyrifos, coumaphos, coumaphos oxon, diazinon, diazinon oxon, diazinon met G-27550, dichlorvos, dimethoate, dimethoate oxon, dioxathion, ethion, ethion monoaxon, 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).

<sup>5</sup> Regulatory method is needed: Atrazine chloro metabolites, metribuzin, metribuzin DADK, metribuzin DA, metribuzin DK, amitraz, amitraz 2,4-DMA metab., desdiethyl simazine, desethyl simazine, simazine chloro metabolites.

<sup>6</sup> Regulatory method is needed: Aldicarb, aldicarb sulfoxide, aldicarb sulfone, carbaryl, carbofuran, carbofuran, 3-hydroxy.

<sup>7</sup> Cypermethrin, *cis*-permethrin, *trans*-permethrin, fenvalerate, *zeta*-cypermethrin.

<sup>8</sup> Regulatory method is needed.

<sup>9</sup> Regulatory method is needed.

<sup>10</sup> Regulatory method is needed.

<sup>11</sup> Regulatory method is needed.

<sup>12</sup> Regulatory method is needed.



**Summary Table IV**  
**Rank and Status of Veterinary Drugs**  
**2007 FSIS NRP, Domestic and Import Scheduled Sampling**

<i>Unavoidable Contaminant<sup>1</sup></i>	<i>Scheduled Samples</i>		<i>Total</i>
	<i>Domestic</i>	<i>Import</i>	
Lead and cadmium	300 samples for lead and 300 samples for cadmium are scheduled for mature turkeys.	No samples are scheduled for the 2007 NRP.	600

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<sup>1</sup> Environmental contaminants are not assigned a ranking score in the NRP.

# Overview of the National Residue Program Design

The USDA's Food Safety and Inspection Service (FSIS) obtains information on the occurrence of residues in meat, poultry, and egg products from two principal sources: the domestic and import scheduled sampling plans. The design of these sampling plans is detailed in this document, the FSIS National Residue Program Scheduled Sampling Plan (NRP), *Blue Book*.

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

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

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

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

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

# **Design of the Domestic Scheduled Sampling Plan for Veterinary Drugs**

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

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

### *Antibiotics: (7-plate bioassay<sup>1</sup> only)*

- At present, the following antibiotics are quantitated using the 7-plate bioassay after a specific identification is made using mass spectroscopy (MS) or using high performance liquid chromatography (HPLC): tetracycline, oxytetracycline, chlortetracycline, gentamicin, streptomycin, dihydrostreptomycin, erythromycin, tylosin, neomycin,  $\beta$ -lactams (quantitated as penicillin-G; penicillins and cephalosporins are not differentiated within this category), and tilmicosin (quantitated by HPLC). The following antimicrobials can be identified by MS; however, no quantitative methods are available: spectinomycin, hygromycin, amikacin, kanamycin, apramycin, tobramycin, lincomycin, pirlimycin, clindamycin, and oleandomycin
- Avoparcin (classification: glycopeptide; AMDUCA prohibited)
- Chloramphenicol (classification: antibiotic; AMDUCA prohibited)
- Florfenicol (classification: antibiotic; chloramphenicol derivative)
- Fluoroquinolones in FSIS MRM (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)
- $\beta$ -Agonists (ractopamine, clenbuterol, cimaterol, and salbutamol; growth promotants<sup>2</sup>)

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<sup>1</sup> 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, HPLC, or mass spectrometry) to establish their identities, where such follow-up methodologies are available. Tetracycline, oxytetracycline, and chlortetracycline share patterns of inhibition and are individually identified by follow-up with the HPLC method for tetracyclines; tilmicosin, tylosin, lincomycin, clindamycin, erythromycin, and pirlimycin, which are individually identified by ion-trap LC/MS/MS. Tissues found to be positive for tilmicosin are quantitated by a NADA method using HPLC. Amikacin, apramycin, dihydrostreptomycin, gentamicin, hygromycin, kanamycin, neomycin, spectinomycin, streptomycin, and tobramycin are individually identified by ion-trap LC/MS/MS. Confirmation for sulfanamides and flunixin are also provided by the residue chemistry section at the FSIS, Midwestern Laboratory.

<sup>2</sup> This method detects  $\beta$ -agonists, clenbuterol, salbutamol, cimaterol, and ractopamine, in bovine, porcine, ovine, and caprine liver and bovine retina. Note that although the method is validated for retina, eye balls are not being collected for the 2007 NRP. FSIS has completed validation work to extend the method to muscle and plans to add zilpaterol.

- Clorsulon (classification: anthelmintic)
- Dexamethasone (classification: glucocorticoid)
- Diethylstilbestrol (DES; AMDUCA prohibited synthetic hormone)
- Dipyron (classification: NSAID<sup>3</sup>)
- Eprinomectin (classification: antiparasitic; avermectin)
- Etodolac (classification: NSAID)
- Flunixin (classification: NSAID)
- Halofuginone (classification: antiprotozoal, coccidiostat)
- Hormones, endogenous production (17- $\beta$  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, sulfamethoxyypyridazine, sulfaquinoxaline, sulfadimethoxine, sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfabromomethazine, sulfasalazine, sulfaethoxyypyridazine, sulfaphenazole, and sulfatroxazole)
- Sulfanitran (classification: antibacterial, coccidiostat)<sup>4</sup>
- Thyreostats (compound: thiouracil)
- 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 *Table 2A, Drugs Banned from Extralabel use under AMDUCA prohibited*.

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<sup>3</sup> NSAID = non-steroidal anti-inflammatory drug

<sup>4</sup> 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, 2007 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 techniques and principles from the field of risk assessment 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 of each of the candidate compounds or compound classes in meat, poultry, and egg products, then that information could be combined with consumption data to estimate exposure. By combining these exposure data with toxicity information, risk is estimated for each compound or compound class from the following:

Equation 1	
Risk	= Exposure x Toxicity
	= Consumption x Residue Levels x Toxicity
	= Consumption x Risk per Unit of Consumption

Given the limited resources available for this priority-setting effort, 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, *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 program. Drug compounds were scored by two methods: (a) the maximum violation rate seen in any production class (averaged over 1996-2005); and (b) the maximum, for any class, of the violation rate (again, averaged over 1996-2005),

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.<sup>5</sup> 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*.<sup>6</sup> 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 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*, 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, since 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" simply 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 "Regulatory Concern" and "Withdrawal Time." A scatter plot for the dependent and independent variables is shown in Graph III, *Scatter plot for Violation Rate vs. the Product of Regulatory Concern times Withdrawal Time*.

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

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<sup>5</sup> For a more detailed explanation, refer the *Scoring Key for Veterinary Drugs*.

<sup>6</sup> 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

$$V_p = 1.5818 + 0.16 * (R * W)$$

- $V_p$  = Predicted score for "FSIS Historical Testing Information on Violations"  
 $W$  = score for "Withdrawal Time"  
 $R$  = Score for "Regulatory Concern"  
 $R * W$  = Product of R and W.

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 "Number of Animals Treated" were included in the final equation since none were found to be significant factors in the regression model.

The model represented by Equation 2 was found to be insignificant at the probability value of 0.05. The overall model p-value is 0.1075 and the regression value ( $R^2$ ) is 0.32, which explains a 32% variability in the data. In statistics, regression analysis examines the relation of a dependent variable (response variable) to specified independent variables.

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 purely 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.



### 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. 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:

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

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 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 Table 2B, *Rank and Status for Veterinary Drugs*, the drugs are ranked by their rating scores, as generated using the above weighting formula. The scores presented in Table 2B 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.<sup>7</sup> 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 2007 NRP and to determine which compounds and compound classes to include in the 2007 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 1-6, 9, 14, and 19 (out of a total of 30) represent a potential public health concern sufficient to justify their inclusion in the 2007 NRP. In addition, based on intelligence from the field, FDA expressed an interest in having FSIS perform limited testing on three additional compounds: ractopamine (ranked 29<sup>th</sup>) and MGA (ranked 24<sup>th</sup>).

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 2007 NRP for domestic sampling:

- Antibiotics
- Arsenicals
- Avermectins
- *beta*-Agonists<sup>8</sup> (Ractopamine)
- Chloramphenicol
- Florfenicol
- Melengestrol acetate (MGA)
- Nitrofurans

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<sup>7</sup> See footnote 4.

<sup>8</sup> See footnote 2.

- Nitroimidazoles
- *Phenylbutazone (ELISA)* Note that phenylbutazone will not be scheduled in the 2007 NRP. However, FAST positive samples will be tested for phenylbutazone.
- Sulfonamides
- Thyreostats
- Trenbolone
- Zeranol

In the 2007 NRP, FSIS will employ a number of analytical methodologies to characterize (identify and quantitate) veterinary drug residues. The methodologies are effective for the analysis of individual compounds and there are also multi residue methods (MRMs) for antibiotics, avermectins, *beta*-agonists, and sulfonamides that distinguish individual compounds in a compound class.

Table 2B 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 2007 NRP. For each highly ranked compound or compound class that is not included for domestic sampling in the 2007 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

The SAT participants identify the production classes of concern for each of the drugs and drug classes to be included in the 2007 NRP. These determinations were based upon professional judgment of the likelihood of finding violations within each production class (information examined included use approvals, extent of use, evidence of misuse and, if available, past violation history), combined with the proportion of total domestic meat consumption each production class represented. The results are presented in Table 3, *Production Classes Considered for Each Veterinary Drug/Drug Class*.

Compound/Production Class pairs included in the 2007 NRP are designated by a "●." Those C/PC pairs that are of regulatory concern, but that could not be included in the 2007 NRP because of laboratory resource constraints, are marked with a "○."

**A number of production classes will be sampled by the chlorinated hydrocarbon/chlorinated organophosphate (CHC/COP) method (see Pesticides). The CHC/COP method also detects phenylbutazone. However, phenylbutazone will not be scheduled in the 2007 NRP. Although phenylbutazone will not be scheduled, FAST positive samples will be tested for phenylbutazone.**

FSIS suspended scheduled testing for certain production classes in 2005; these are marked with a "■."

Production class nomenclature:

- Bulls are mature, intact male cattle;
- Beef cows are sexually mature female cattle of beef type, ordinarily having given birth to one or more calves;
- Dairy cows are sexually mature female cattle of dairy type, ordinarily having given birth to one or more calves;
- Heifers are young, female cattle that have not yet given birth to a calf;
- Steers are male cattle castrated before sexual maturity;
- Calves/veal definitions are under FSIS review;

- Market hogs are swine usually marketed near six months of age and 200 to 300 pounds live weight;
- Boars are mature swine showing male sexual characteristics;
- Stags are male swine castrated after they have reached sexual maturity;
- Sows are mature female swine ordinarily having given birth to one or more litters;
- Sheep include mature sheep with no distinction by gender;
- Lambs are generally defined as sheep younger than 14 months and having a break joint in at least one leg;
- Goats are of both sex and any age;
- Horses are of either sex or any age;
- Other livestock include bison, deer, elk, etc.;
- Young chickens include: broilers/fryers that are usually less than 10 weeks of age, roasting chickens are young chickens of either sex usually less than 12 weeks of age, and capons that are surgically neutered male chickens usually less than 8 months of age;
- Mature chickens are adult female chickens usually more than 10 months of age;
- Young turkeys include fryer/roaster turkeys that are either male or female and usually less than 12; weeks of age, and turkeys that are either male or female usually less than 6 months of age;
- Mature turkeys are of both sex and usually more than 15 months of age;
- Ducks are of both sex and any age;
- Geese are of both sex and any age;
- 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;
- Roaster Pigs are animals of both sexes and any age that are marketed with the carcass unsplit and with head on;
- Egg products are yolks, whites, or whole eggs after breaking and can be dried, frozen, or liquid.

#### IV. Allocation of Sampling Resources

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

Table 4 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 2005 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 4:

<p>Equation 5</p> <p>Percent Estimated Relative Percent of Domestic Consumption (ERC)</p> $ERC = AP/TP \times 100$ <p>AP = Annual Production (dressed weight in pounds)</p> <p>TP = Total Annual Production of all Production Classes</p>
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All calculations and results are presented in Table 4, *Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products*.

FSIS has the analytical capability to sample production classes of concern for the following compounds and compound classes: antibiotics (by bioassay); arsenicals; avermectins; sulfonamides; and phenylbutazone (via the CHC/COP methodology). **Note that phenylbutazone will not be scheduled in the 2007 NRP. However, FAST positive samples will be tested for phenylbutazone.** 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 5 and as presented in Table 4). The resulting priority score for compound-production class pairs is shown in tables 5 and 6 and is calculated as follows (Equation 6):

Equation 6
Priority Score (PS)
$PS = CP \times RPC$
CP = compound priority score rating
RPC = relative percent consumption

Equation 6 is analogous to the equation used to estimate risk in Equation 1, in which risk per unit of consumption is multiplied by consumption. While the results of Equation 6 do not constitute an estimate of risk, they provide a numerical representation of the relative public health concern represented by each C/PC pair, and thus can be used to prioritize FSIS analytical sampling resources 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 5, *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, for each production class in which the specified drug might appear (as indicated in Table 6). The compound-production class pairs were sorted by their sampling priority scores and into two classes of sample numbers. Initially (see Table 5), compound-production class pairs in these classes were assigned sampling numbers of 300 and 230 (except equine, which are assigned 90 samples). The cutoff scores for Relative Public Health Concern corresponding to each sampling level were as follows:  $> 1.0 = 300$  samples and  $< 1.0 = 230$  samples. 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, from among four different sampling options: high regulatory concern (300 samples per year) and moderate regulatory concern (230 samples/year) 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. 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).

Minor species, rabbits, ratites, squab, geese, ducks, and bison, have not be scheduled for the domestic sampling program beginning in the 2006 NRP. The reason is that minor species are low production animals. Not scheduling the minor species will allow FSIS to focus those resources on the development of methodologies in areas that are of high public health concern.

## **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 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 6, *Number of Scheduled Samples for Veterinary Drug/Production Class Pairs, 2007 NRP Domestic Scheduled Sampling*, lists the number of analyses assigned to each C/PC pair in Table 5. The table also reports the total number of samples analyzed in the FSIS scheduled sampling plan for the period 01/01/1996-12/31/2005, 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 01/01/1996-12/31/2005, increase the sampling level by +1 (if 230 were assigned initially, increase to 300 samples).
- If the number of samples tested in the FSIS scheduled sampling plan for a compound-production class pair for the period 01/01/1996-12/31/2005 was 230 samples, and a violation rate of equal to or greater than 50%, and less than 70% ( $\geq 0.50\%$ , and  $< 0.70\%$ ) was found, increase the sampling level by +1 (if 230 were assigned initially, increase to 300 samples).
- If 230 samples were tested in the FSIS scheduled sampling plan for a compound-production class pair for the period 01/01/1996-12/31/2005, and a violation rate of greater than or equal to 70% ( $\geq 0.70\%$ ) was found, increase the sampling level by +1 (if 230 were assigned initially, increase to 300 samples).
- If at least 300 samples tested in the FSIS scheduled sampling plan for a compound-production class pair (for the period 01/01/2003-12/31/2005), and a violation rate of 0.00% was found, rotate the C/PC pair out of the NRP.<sup>9</sup>
- 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 6 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.

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<sup>9</sup> Compound-production class pairs removed from scheduled sampling will be reintroduced at a later date.

No adjustments for laboratory capacity were made for the 2007 NRP.

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

An adjustment to the total number of scheduled samples was made based on the number of production facilities. For this adjustment, FSIS considered the total number of production facilities (USDA Inspected Establishments for 2003) 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). The total number of samples will not be reduced below 230. Based on these parameters, no adjustments were made for the 2007 NRP. No adjustment will be made for the minor species (bison, ducks, rabbits, geese, squab, and ratites) since these minor species were suspended from testing beginning in the 2006 NRP.

#### ***Adjustment for a zero (0%) violation rate for the three year period, 2003 – 2005***

FSIS historical violation data were examined for the 2003-2005 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 6, under the heading "Final Adjustment."

#### **"Limited Resource" Sampling**

The 2007 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, a minimum of 300 analyses are scheduled in each production class to be sampled. This yields a 95% chance of detecting a violation, if the true violation rate is 1%. However, because of laboratory resource limitations, it is not always possible to sample at this level.

For the 2007 NRP, selection of production classes for the limited resource sampling for compounds (Table 6) was made as follows:

- *beta*-Agonists (ractopamine, clenbuterol, cimaterol, and salbutamol) are of concern in heifers, formula-fed veal, non-formula-fed veal, and market hogs for the 2007 NRP; the analytical capacity for the *beta*-agonists in the 2007 NRP is 1,200 samples. FSIS will schedule 1,200

analyses for *beta*-agonists in heifers, formula-fed veal, non-formula-fed veal, and market hogs for domestic sampling and 120 import samples for a total of 1,320 samples.

- Chloramphenicol is of concern in dairy cows, formula-fed veal, young chickens, and young turkeys for the 2007 NRP; the analytical capacity is 1,200 samples for chloramphenicol in the 2007 domestic NRP. FSIS will schedule 1,200 analyses for chloramphenicol for dairy cows, formula-fed veal, young chickens, and young turkeys for domestic scheduled sampling and 192 samples for the import program for a total of 1,392 samples.
- Florfenicol is of concern in dairy cows, formula-fed veal, and non-formula-fed veal. The analytical capacity is 830 samples for florfenicol in the domestic 2007 NRP. FSIS will schedule 830 analyses for florfenicol in dairy cows, formula-fed veal, and non-formula-fed veal for domestic sampling and 45 samples for the import program for a total of 875 samples.
- No flunixin samples are scheduled for the 2007 domestic NRP. However, 78 import samples for flunixin are scheduled in the 2007 NRP import program.
- Melengestrol Acetate (MGA) is of concern in heifers, steers, formula, and non-formula-fed veal. The analytical capacity for MGA in 2007 is 300 samples, and the top priority production class is heifers. Therefore, FSIS will schedule 300 analyses for MGA in heifers for domestic sampling for the 2007 NRP. No import samples are scheduled for MGA.
- Nitrofurans (furazolidone and furaltadone) are of concern in market hogs, sows, and roaster pigs. The analytical capacity for nitrofurans in the 2007 NRP is 900 samples. FSIS will schedule 900 analyses for nitrofurans in market hogs, sows, and roaster pigs for domestic sampling in the 2006 NRP. No import samples are scheduled for nitrofurans.
- Nitroimidazoles (dimetridazole and ipronidazole) are of concern in young chickens. The analytical capacity for nitroimidazoles in the 2007 domestic NRP is 300 samples. FSIS will schedule 300 analyses for nitroimidazoles for young chickens in the 2007 NRP and will also schedule 8 import samples for a total of 308 nitroimidazole samples.
- No phenylbutazone samples are scheduled for the domestic 2007 NRP or for the import program. However, testing for phenylbutazone will be conducted for FAST positive samples.
- The *beta*-agonist, ractopamine, is of concern in heifers, market hogs, formula-fed veal and non-formula-fed veal in the 2007 domestic NRP; the analytical capacity for ractopamine for the 2007 NRP is 1,200 samples. FSIS will schedule 1,200 analyses for ractopamine in heifers, market hogs, formula-fed veal and non-formula-fed veal for domestic and 120 import samples for a total of 1,320 samples.
- Thyreostats are of concern formula-fed veal the 2007 domestic NRP; the analytical capacity for thyreostats is 300 samples. FSIS will schedule 300 analyses in formula-fed veal for domestic sampling and 90 samples for import sampling for a total of 390 samples.
- Trenbolone is of concern in formula-fed veal for the 2007 NRP; the analytical capacity for trenbolone is 230 samples in 2007 domestic NRP. FSIS will schedule 230 samples in formula-fed veal for domestic sampling. No samples will be scheduled for the import program.



- Zeranol is of concern in formula-fed veal for the 2007 NRP; the analytical capacity for zeranol is 230 samples in the domestic 2007 NRP. FSIS will also schedule 90 import samples for a total of 320 samples.

The above information is presented in tabular format at the end of the section, “Summary of Domestic and Import Sampling,” in Table 56, *Combined Summary, 2005 FSIS NRP, Domestic and Import Scheduled Sampling, and Exploratory Assessments*.

## V. Scoring Key

### *FSIS Historical Testing Information on Violations (01/01/1996 - 12/31/2005)*

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 1996 - 2005, 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%. These 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/package of this compound has potential for misuse.
- 2 = Intelligence information rarely indicates misuse of this compound.
- 1 = Intelligence information has never indicated misuse of this compound.

### ***Withdrawal Time***

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

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

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

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

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

- 4= Scientific information gathered from a variety of reliable sources indicate 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 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 contained within parentheses.

***Acute or Chronic Toxicity Concerns***

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

- 4 = Compound is a carcinogen, or potentially life threatening, or has significant acute effects including the anaphylactic response to an allergen.
- 3 = Systemic No Observed Effect Levels (NOEL's) seen at intermediate to low doses in laboratory test animals. Antimicrobial effects with a high potential to alter intestinal microflora.
- 2 = Systemic NOEL's seen at high oral doses in laboratory test animals. Antimicrobial effects with a moderate potential to alter intestinal microflora.
- 1 = Compound generally shows no toxicity in laboratory test animals even at doses much higher than present in edible tissues at zero-day withdrawal.

**Table 1**  
**Scoring Table for Veterinary Drugs**  
**2007 FSIS NRP, Domestic Scheduled Sampling**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Withdrawal Time<sup>3</sup></i> (W)	<i>Relative Number Treated<sup>4</sup></i> (N)	<i>Predicted V</i> ( $V = 1.5818 + 0.16 (R*W)$ ) <sup>5</sup>	<i>Impact New &amp; Existing Human Disease<sup>6</sup></i> (D)	<i>Acute or Chronic Toxicity Concerns<sup>7</sup></i> (T)	<i>Relative Public Health Concern Score</i> ( $P = V*[(D+3*T)/4]$ )
Antibiotics <sup>8</sup>	4	4	4	4	4.00	3	4	15.00
Carbadox <sup>9</sup>	4	4	4	3	4.00	3	4	15.00
Sulfonamides <sup>10</sup>	4	4	3	4	4.00	3	3	12.00
Florfenicol	NA-3 <sup>11</sup>	3	4	4	3.50	3	3	10.51
Avermectins <sup>12</sup>	4	3	4	4	4.00	2	4	14.00
Arsenicals <sup>13</sup>	2	4	2	4	2.00	3	2	4.50
Flunixin	4	4	2	3	4.00	1	2	7.00
β-agonist (Ractopamine)	1	4	2	3	1.00	2	3	2.75
Thyreostats <sup>14</sup>	NA-0 <sup>15</sup>	4	3	1	3.50	2	4	12.26
Dipyron <sup>16</sup>	Not Tested	4	3	1	3.50	1	4	11.38
Berenil <sup>17</sup>	NA-2 <sup>18</sup>	4	4	1	4.14	2	3	11.39
Trenbolone <sup>19</sup>	NA-2 <sup>20</sup>	4	1	3	2.22	3	3	6.67
Zeranol <sup>21</sup>	4 <sup>22</sup>	4	1	3	4.00	3	3	12.00
Methyl prednisone	Not Tested	4	2	2	2.86	1	3	7.15
Eprinomectin	Not Tested	2	2	3	2.22	2	2	4.44
Clorsulon <sup>23</sup>	Not Tested	2	3	2	2.54	2	2	5.08
Dexamethasone	NA-O <sup>24</sup>	4	2	2	2.86	1	3	7.15
Thiamphenicol	Not Tested	3	2	1	2.54	3	3	7.63
Amprolium <sup>25</sup>	Not Tested	4	2	2	2.86	3	2	6.44
Hormones, endogenous <sup>26</sup>	Not Tested	4	1	4	2.22	2	2	4.44

**Table 1 - continued**  
**Scoring Table for Veterinary Drugs**  
**2007 FSIS NRP, Domestic Scheduled Sampling**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Withdrawal Time<sup>3</sup></i> (W)	<i>Relative Number Treated<sup>4</sup></i> (N)	<i>Predicted V</i> ( $V = 1.5818 + 0.16 (R*W)$ ) <sup>5</sup>	<i>Impact New &amp; Existing Human Disease<sup>6</sup></i> (D)	<i>Acute or Chronic Toxicity Concerns<sup>7</sup></i> (T)	<i>Relative Public Health Concern Score</i> ( $P = V*[(D+3*T)/4]$ )
Lasalocid <sup>27</sup>	Not Tested	2	1	3	1.90	3	2	4.28
Melengesterol acetate (MGA) <sup>28</sup>	1	2	1	4	1.00	3	3	3.00
Levamisole <sup>29</sup>	NA-1 <sup>30</sup>	3	3	2	3.02	1	1	2.02
Prednisone <sup>31</sup>	Not Tested	3	2	1	2.54	1	3	6.35
Etodolac <sup>32</sup>	Not Tested	3	2	1	2.54	1	3	6.35
Halofuginone <sup>33</sup>	NA-1 <sup>34</sup>	1	2	2	1.90	2	2	3.80
Benzimidazoles <sup>35</sup>	Not Tested	1	3	2	2.06	1	2	3.61
Veterinary tranquilizers	Not Tested	4	2	2	2.86	1	1	2.86
Nicarbazin <sup>36</sup>	Not Tested	2	2	1	2.22	2	1	2.78
Morantel and pyrantel <sup>37</sup>	Not Tested	1	1	2	1.74	2	1	2.18

<sup>1</sup> Scores for historical testing information for residue violations, V, are provided by USDA's Food Safety and Inspection Service (FSIS).

<sup>2</sup> Scores for regulatory concern, R, are provided by FDA's Center for Veterinary Medicine (CVM).

<sup>3</sup> Scores for withdrawal time W, are provided by FDA's Center for Veterinary Medicine (CVM).

<sup>4</sup> Scores for relative number of animals treated, N, are provided by FDA's Center for Veterinary Medicine (CVM).

<sup>5</sup> 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.

<sup>6</sup> Scores impact on new and existing human disease, D, are provided by FDA's Centers for Disease Control (CDC).

<sup>7</sup> Scores for acute or chronic toxicity concerns, T, are provided by FDA's Center for Veterinary Medicine (CVM).

<sup>8</sup> Antibiotics quantitated by the FSIS Bioassay Multi-Residue Method (MRM). At present, the following antibiotics are quantitated using the 7-plate bioassay after a specific identification is made using mass spectroscopy (MS) or using high performance liquid chromatography (HPLC): tetracycline, oxytetracycline, chlortetracycline, gentamicin, streptomycin, dihydrostreptomycin, erythromycin, tylosin, neomycin, *beta*-lactams (quantitated as penicillin-G; penicillins and cephalosporins are not differentiated within this category), and tilimicosin (quantitated by HPLC). The following antimicrobials can be identified by MS; however, no quantitative methods are available: spectinomycin, hygromycin, amikacin, kanamycin, apramycin, tobramycin, lincomycin, pirlimycin, clindamycin, and oleandomycin.

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

**Table 1 - continued**  
**Scoring Table for Veterinary Drugs**  
**2007 FSIS NRP, Domestic Scheduled Sampling**

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performance liquid chromatography (HPLC), or mass spectrometry, MS) to establish their identities, where such follow-up methodologies are available. Tetracycline, oxytetracycline, and chlortetracycline share patterns of inhibition and are individually identified by follow-up with the HPLC method for tetracyclines; tilimicosin, tylosin, lincomycin, clindamycin, erythromycin, and pirlimycin, which are individually identified by ion-trap LC/MS/MS. Tissues found to be positive for tilimicosin are quantitated by a NADA method using HPLC. Amikacin, apramycin, dihydrostreptomycin, gentamycin, hygromycin, kanamycin, neomycin, spectinomycin, streptomycin, and tobramycin are individually identified by ion-trap LC/MS/MS. Confirmation for sulfa drugs and flunixin are also provided by the residue chemistry section at the FSIS, Midwestern Laboratory.

<sup>9</sup> Antimicrobial.

<sup>10</sup> Antimicrobials and some are coccidiostats.

<sup>11</sup> NA-3 = The data are preliminary. Data have been collected for only 1-2 years for 2 or more production classes.

<sup>12</sup> Avermectins in the FSIS MRM are doramectin, ivermectin, moxidectin.

<sup>13</sup> Detected as As.

<sup>14</sup> Includes thiouracil.

<sup>15</sup> NA-O = The data are preliminary. Data have been collected for only one year for 2 or more production classes.

<sup>16</sup> NSAID.

<sup>17</sup> Antiprotozoal, histomonas.

<sup>18</sup> NA-2 = Scheduled sampling data have been collected for a single production class and for a limited time period.

<sup>19</sup> Xenobiotic hormone.

<sup>20</sup> NA-2 = Scheduled sampling data have been collected for a single production class and for a limited time period.

<sup>21</sup> Xenobiotic hormone; FDA increased the score for regulatory concern for zeranol from 3 (2005 NRP) to 4 for the 2006 NRP.

<sup>22</sup> NA-2 = Scheduled sampling data have been collected for a single production class and for a limited time period.

<sup>23</sup> Anthelmintic, Trematodes.

<sup>24</sup> NA-1 = Scheduled sampling data have not been collected in the past 3-5 years; therefore, the data are not current enough to be considered reliable for calculating a value for V.

<sup>25</sup> Coccidiostat.

<sup>26</sup> FDA increased the score for regulatory concern for naturally occurring hormones from 2 (2005 NRP) to 4 for the 2006 NRP.

<sup>27</sup> Coccidiostat.

<sup>28</sup> Xenobiotic hormone; FDA decreased the score for regulatory concern for melengestrol acetate (MGA) from 3 (2005 NRP) to 2 for the 2006 NRP.

<sup>29</sup> Anthelmintic, Nematodes.

<sup>30</sup> NA-1 = Scheduled sampling data have not been collected in the past 3-5 years; therefore, the data are not current enough to be considered reliable for calculating a value for V.

<sup>31</sup> FDA increased the score for regulatory concern for prednisone from 2 (2005 NRP) to 3 for the 2006 NRP.

<sup>32</sup> NSAID.

<sup>33</sup> Antiprotozoal, coccidiostat.

<sup>34</sup> NA-1 = Scheduled sampling data have not been collected in the past 3-5 years; therefore, the data are not current enough to be considered reliable for calculating a value for V.

<sup>35</sup> Anthelmintics.

<sup>36</sup> Coccidiostat.

<sup>37</sup> Anthelmintics.

**Table 2A**  
**Drugs Banned from Extra Label Use Under AMDUCA**  
**2007 FSIS NRP – Domestic Scheduled Sampling**

<i>AMDUCA<sup>1</sup> Prohibited Drug</i>	<i>Status in the 2007 NRP</i>
Avoparcin	Not in the 2007 NRP.
Chloramphenicol	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for dairy cows, formula-fed veal, young chickens, and young turkeys.
	<i>Import Scheduled Sampling:</i> 78, 90, 16, and 8 samples are scheduled for fresh beef, veal, turkey, and chicken, respectively.
$\beta$ -Agonists <sup>2</sup>	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for heifers, formula-fed veal, non-formula-fed veal, and market hogs. Confirmation done by FDA-NCTR. <sup>3</sup>
	<i>Import Scheduled Sampling:</i> 90 and 30 samples are scheduled for veal and pork fresh, respectively.
Diethylstilbestrol <sup>4</sup>	Not in the 2007 NRP.
Fluoroquinolones <sup>5</sup>	Not in the 2007 NRP.
Nitrofurans <sup>6</sup>	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for market hogs, sows, and roaster pigs.
	<i>Import Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP.
Nitroimidazoles <sup>7</sup>	<i>Domestic Scheduled Sampling:</i> 300 samples are scheduled for young chickens.
	<i>Import Scheduled Sampling:</i> 8 samples are scheduled for fresh chicken.

**Table 2A - continued**  
**Drugs Banned from Extra Label Use Under AMDUCA**  
**2007 FSIS NRP – Domestic Scheduled Sampling**

<i>AMDUCA<sup>1</sup> Prohibited Drug</i>	<i>Status in the 2007 NRP</i>
Phenylbutazone <sup>8</sup>	<i>Domestic Scheduled Sampling: No samples are scheduled for the 2007 NRP</i>
	<i>Domestic Scheduled Sampling: No samples are scheduled for the 2007 NRP</i>
Ronidazole <sup>9</sup>	Not in the 2007 NRP.
Vancomycin <sup>10</sup>	Not in the 2007 NRP.

<sup>1</sup> Drugs banned from extralabel use under AMDUCA were not evaluated using the ranking formula for inclusion in Table 2A. Instead, these drugs were automatically assigned a high sampling priority and will be included in the NRP if methodologies and resources are available.

<sup>2</sup> 1200 animals will be sampled in the FSIS domestic program. A pound of liver will be collected and sent to WL for screening and confirmation by HPLC/MS/MS. This method detects  $\beta$ -agonists, clenbuterol, salbutamol, cimaterol, and ractopamine, in bovine, porcine, ovine, and caprine liver and bovine retina. Note that although the method is validated for retina, eye balls are not being collected for the 2007 NRP. FSIS has completed validation work to extend the method to muscle and plans to add zilpaterol.

<sup>3</sup> Food and Drug Administration, National Center for Toxicological Research, Jefferson, AR.

<sup>4</sup> Xenobiotic hormone.

<sup>5</sup> The fluoroquinolones, enrofloxacin and danofloxacin, are approved for use steers and heifers.

<sup>6</sup> Furazolidone and nitrofurazone; antimicrobials.

<sup>7</sup> Nitroimidazoles in the FSIS multi residue method (MRM) are dimetridazole and ipronidazole; antiprotozoal

<sup>8</sup> The Surveillance Advisory Team (SAT) decided that all cattle classes will be sampled for phenylbutazone (ELISA method) for the 2007 NRP; non-Steroidal Anti-inflammatory Drug (NSAID).

<sup>9</sup> Antimicrobial.

<sup>10</sup> Glycopeptide.



**Table 2B**  
**Rank and Status of Veterinary Drugs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Rank</i>	<i>Drug</i>	<i>Score</i>	<i>Status in the 2007 NRP</i>
1	Antibiotics <sup>1</sup>	15.0	<i>Domestic Scheduled Sampling:</i> 300, 300, 300, 300, 230, 230, 230, 300, 300, 90, 300, 300 samples are scheduled for beef cows, dairy cows, heifers, formula-fed veal, non-formula-fed veal, heavy calves, roaster pigs, boars and stags, sows, equine, young chickens, and young turkeys <sup>2</sup> , respectively.
			<i>Import Scheduled Sampling:</i> 657 samples are scheduled for fresh beef, fresh pork, fresh veal, fresh turkey, fresh chicken, and fresh varied combo.
2	Carbadox <sup>3</sup>	15.0	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for market hogs and roaster pigs.
			<i>Import Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP.
3	Avermectins <sup>4</sup>	14.0	<i>Domestic Scheduled Sampling:</i> 300, 300, 300, 300, 300, 230, 230, 230, 230, and 90 samples are scheduled for steers, heifers, dairy cows, bulls, heavy calves, non-formula-fed veal, sheep, lambs, goats, and equine, respectively.
			<i>Import Scheduled Sampling:</i> 583 samples are scheduled for fresh beef, processed beef, fresh veal, fresh lamb and mutton, and fresh goat.
4	Thyreostats <sup>5</sup>	12.3	<i>Domestic Scheduled Sampling:</i> 300 samples are scheduled for formula-fed veal.
			<i>Import Scheduled Sampling:</i> 90 samples are scheduled for fresh veal.

**Table 2B - continued**  
**Rank and Status of Veterinary Drugs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Rank</i>	<i>Drug</i>	<i>Score</i>	<i>Status in the 2007 NRP</i>
5	Sulfonamides <sup>6</sup>	12.0	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for market hogs, steers, dairy cows, beef cows, bulls, mature turkeys, bob veal, roaster pigs, non-formula-fed veal, young chickens, young turkeys, sheep, lambs, goats and heavy calves, respectively.
			<i>Import Scheduled Sampling:</i> 836 samples are scheduled for fresh beef, processed beef, fresh pork, processed pork, fresh veal, fresh turkey, processed turkey, fresh varied combo, and processed varied combo.
6	Zeranol <sup>7</sup>	12.0	<i>Domestic Scheduled Sampling:</i> 230 samples are scheduled for formula-fed veal.
			<i>Import Scheduled Sampling:</i> 90 samples each are scheduled for fresh veal.
7	Berenil <sup>8</sup>	11.4	<i>Domestic Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP.
			<i>Import Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP.
8	Dipyron <sup>9</sup>	11.4	<i>Domestic Scheduled Sampling:</i> Not in the 2007 NRP.
			<i>Import Scheduled Sampling:</i> Not in the 2007 NRP.

**Table 2B - continued**  
**Rank and Status of Veterinary Drugs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Rank</i>	<i>Drug</i>	<i>Score</i>	<i>Status in the 2007 NRP</i>
9	Florfenicol <sup>10</sup>	10.5	<i>Domestic Scheduled Sampling:</i> 300, 300, and 230 samples are scheduled for dairy cows, formula-fed veal, and non-formula-fed veal, respectively.
			<i>Import Scheduled Sampling:</i> 45 samples are scheduled for fresh beef.
10	Thiamphenicol <sup>11</sup>	7.6	<i>Domestic Scheduled Sampling:</i> Not in the 2007 NRP.
			<i>Import Scheduled Sampling:</i> Not in the 2007 NRP.
11	Methyl prednisone <sup>12</sup>	7.2	<i>Domestic Scheduled Sampling:</i> Not in the 2007 NRP.
			<i>Import Scheduled Sampling:</i> Not in the 2007 NRP.
12	Dexamethasone <sup>13</sup>	7.2	<i>Domestic Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP.
			<i>Import Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP.

**Table 2B - continued**  
**Rank and Status of Veterinary Drugs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Rank</i>	<i>Drug</i>	<i>Score</i>	<i>Status in the 2007 NRP</i>
13	Flunixin <sup>14</sup>	7.0	<p><i>Domestic Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP.</p> <p><i>Import Scheduled Sampling:</i> 78 samples are scheduled for fresh beef.</p>
14	Trenbolone	6.7	<p><i>Domestic Scheduled Sampling:</i> 230 samples are scheduled for formula-fed veal.</p> <p><i>Import Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP.</p>
15	Amprolium <sup>15</sup>	6.4	<p><i>Domestic Scheduled Sampling:</i> Not in the 2007 NRP.</p> <p><i>Import Scheduled Sampling:</i> Not in the 2007 NRP.</p>
16	Prednisone <sup>16</sup>	6.4	<p><i>Domestic Scheduled Sampling:</i> Not in the 2007 NRP.</p> <p><i>Import Scheduled Sampling:</i> Not in the 2007 NRP.</p>

**Table 2B - continued**  
**Rank and Status of Veterinary Drugs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Rank</i>	<i>Drug</i>	<i>Score</i>	<i>Status in the 2007 NRP</i>
17	Etodolac <sup>17</sup>	6.4	<i>Domestic Scheduled Sampling:</i> Not in the 2007 NRP.
			<i>Import Scheduled Sampling:</i> Not in the 2007 NRP.
18	Clorsulon <sup>18</sup>	5.1	<i>Domestic Scheduled Sampling:</i> Not in the 2007 NRP.
			<i>Import Scheduled Sampling:</i> Not in the 2007 NRP.
19	Arsenicals <sup>19</sup>	4.5	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for market hogs and young chickens. <sup>20</sup>
			<i>Import Scheduled Sampling:</i> 145 samples each are scheduled for fresh pork, fresh turkey, fresh chicken, processed chicken, and processed turkey..
20	Eprinomectin	4.4	<i>Domestic Scheduled Sampling:</i> Not in the 2007 NRP.
			<i>Import Scheduled Sampling:</i> Not in the 2007 NRP.

**Table 2B - continued**  
**Rank and Status of Veterinary Drugs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Rank</i>	<i>Drug</i>	<i>Score</i>	<i>Status in the 2007 NRP</i>
21	Hormones, naturally-occurring <sup>21</sup>	4.4	<i>Domestic Scheduled Sampling: Not in the 2007 NRP.</i>
			<i>Import Scheduled Sampling: Not in the 2007 NRP.</i>
22	Lasalocid <sup>22</sup>	4.3	<i>Domestic Scheduled Sampling: Not in the 2007 NRP.</i>
			<i>Import Scheduled Sampling: Not in the 2007 NRP.</i>
23	Halofuginone <sup>23</sup>	3.8	<i>Domestic Scheduled Sampling: Not in the 2007 NRP.</i>
			<i>Import Scheduled Sampling: Not in the 2007 NRP.</i>
24	Benzimidazoles in the FSIS MRM <sup>24</sup>	3.6	<i>Domestic Scheduled Sampling: Not in the 2007 NRP.</i>
			<i>Import Scheduled Sampling: Not in the 2007 NRP.</i>

**Table 2B - continued**  
**Rank and Status of Veterinary Drugs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Rank</i>	<i>Drug</i>	<i>Score</i>	<i>Status in the 2007 NRP</i>
25	Levamisole <sup>25</sup>	3.5	<i>Domestic Scheduled Sampling: Not in the 2007 NRP.</i>
			<i>Import Scheduled Sampling: Not in the 2007 NRP.</i>
26	Melengesterol acetate <sup>26</sup> (MGA)	3.0	<i>Domestic Scheduled Sampling: 300 samples are scheduled for heifers.</i>
			<i>Import Scheduled Sampling: No samples are scheduled for the 2007 NRP.</i>
27	Veterinary tranquilizers <sup>27</sup>	2.9	<i>Domestic Scheduled Sampling: Not in the 2007 NRP.</i>
			<i>Import Scheduled Sampling: Not in the 2007 NRP.</i>
28	Nicarbazin <sup>28</sup>	2.9	<i>Domestic Scheduled Sampling: Not in the 2007 NRP.</i>
			<i>Import Scheduled Sampling: Not in the 2007 NRP.</i>

**Table 2B - continued**  
**Rank and Status of Veterinary Drugs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Rank</i>	<i>Drug</i>	<i>Score</i>	<i>Status in the 2007 NRP</i>
29	$\beta$ -agonists <sup>29</sup>	2.8	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for heifers, formula-fed veal and non-formula-fed veal, and market hogs.
			<i>Import Scheduled Sampling:</i> 90 and 30 samples are scheduled for fresh veal and fresh pork, respectively.
30	Morantel and pyrantel tartarate	2.2	<i>Domestic Scheduled Sampling:</i> Not in the 2007 NRP.
			<i>Import Scheduled Sampling:</i> Not in the 2007 NRP.

<sup>1</sup> At present, the following antibiotics are quantitated using the 7-plate bioassay after a specific identification is made using mass spectroscopy (MS) or using high performance liquid chromatography (HPLC): tetracycline, oxytetracycline, chlortetracycline, gentamicin, streptomycin, dihydrostreptomycin, erythromycin, tylosin, neomycin, beta-lactams (quantitated as penicillin-G; penicillins and cephalosporins are not differentiated within this category), and tilmicosin (quantitated by HPLC). The following antimicrobials can be identified by MS; however, no quantitative methods are available: spectinomycin, hygromycin, amikacin, kanamycin, apramycin, tobramycin, lincomycin, pirlimycin, clindamycin, and oleandomycin.

<sup>2</sup> Young chickens and young turkeys have a 0% violation rate for antibiotics for the 3 year period (2001-2003). These production classes were rotated back into the scheduled sampling program in the 2006 NRP based on the expert opinion of the Surveillance Advisory Team (SAT).

<sup>3</sup> Antimicrobial.

<sup>4</sup> Doramectin, ivermectin, and moxidectin; Antiparasitic.

<sup>5</sup> Includes thiouracil.

<sup>6</sup> Sulfonamides in the FSIS multi-residue method (MRM): Sulfapyridine, sulfadiazine, sulfathiazole, sulfamerazine, sulfamethazine, sulfachloropyridazine, sulfadoxine, sulfamethoxypridazine, sulfaquinoxaline, sulfadimethoxine, sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfabromomethazine, sulfasalazine, sulfaethoxypridazine, sulfaphenazole, and sulfatroxazole; Antimicrobials, some are coccidiostats; FDA has not set a tolerance for the following sulfonamides: sulfapyridine, sulfadiazine, sulfadoxine, sulfamethoxypridazine, sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfasalazine, sulfaphenazole, and sulfatroxazole.

<sup>7</sup> Xenobiotic hormone.

<sup>8</sup> Antiprotozoal.

<sup>9</sup> Non-Steroidal Anti-Inflammatory Drug (NSAID).



**Table 2B - continued**  
**Rank and Status of Veterinary Drugs**  
**2007 NRP, Domestic Scheduled Sampling**

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- <sup>10</sup> Chloramphenicol derivative.
- <sup>11</sup> Chloramphenicol derivative.
- <sup>12</sup> Glucocorticoid.
- <sup>13</sup> Glucocorticoid.
- <sup>14</sup> NSAID.
- <sup>15</sup> Coccidiostat
- <sup>16</sup> Glucocorticoid
- <sup>17</sup> NSAID, Inspector Generated FAST positive samples will be screened.
- <sup>18</sup> Anthelmintic, Trematodes.
- <sup>19</sup> Detected as As.
- <sup>20</sup> Beef cows, market hogs, roaster pigs, boars and stags, sows, mature chickens, and mature turkeys have a 0% violation rate for arsenic for the 3 year period (2001-2003). These production classes were rotated back into the scheduled sampling program for 2006 based on the expert opinion of the Surveillance Advisory Team (SAT).
- <sup>21</sup> 17-Estradiol, testosterone, and progesterone.
- <sup>22</sup> Coccidiostat.
- <sup>23</sup> Antiprotozoal, coccidiostat.
- <sup>24</sup> 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); Anthelmintic.
- <sup>25</sup> Anthelmintic.
- <sup>26</sup> Xenobiotic hormone.
- <sup>27</sup> Azaperone and its metabolite azaperol, xylazine, haloperidol, acetopromazine, propionylpromazine, and chlorpromazine.
- <sup>28</sup> Coccidiostat.
- <sup>29</sup>  $\beta$ -Agonist.

**Table 3A**  
**Production Classes Considered for each Veterinary Drug and Drug Class (AMDUCA Drugs)**  
**2007 FSIS NRP, Domestic Scheduled Sampling**

ERC <sup>i</sup>	Production Class	Animal Medicinal Drug Use Clarification Act of 1994 (AMDUCA) Prohibited Drugs <sup>ii</sup>					
		$\beta$ -Agonists <sup>iii</sup>	Chloramphenicol	Fluoroquinolones	Nitrofurans	Nitroimidazoles	Phenylbutazone <sup>iv</sup> (ELISA method)
0.05	Equine						
0.428	Bulls						
1.474	Beef cows						
1.346	Dairy cows		●	○			
7.045	Heifers	●		○			
13.206	Steers	□		○			
0.014	Bob veal		○				
0.116	Formula-fed veal	●	●				
0.002	non-Formula-fed veal	●					
0.018	Heavy calves						
0.01	Sheep						
0.166	Lambs						
0.012	Goats						
18.79	Market hogs	●			●		
0.039	Roaster pigs				●		
0.07	Boars/Stags						
0.93	Sows				●		
46.04	Young chickens		●			●	
0.81	Mature chickens						
6.62	Young turkeys		●				
0.06	Mature turkeys						
2.55	Egg products						

● = Compound/Production Class Pairs included in the 2007 NRP.

○ = Compound/Production Class Pairs that are of regulatory concern, but are not included in the 2007 NRP because of laboratory resource constraints.

□ = FSIS suspended scheduled sampling for this drug-production class pair for the 2007 NRP.

<sup>i</sup> ERC = Estimated relative percent of domestic consumption, calendar year 2005. 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).

<sup>ii</sup> 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.

<sup>iii</sup> This method applicable to identification of B-agonists in bovine retinal tissue (except for zilpaterol); bovine, porcine, ovine and caprine liver; and bovine and porcine muscle at  $\geq 3$  ppb for clenbuterol, salbutamol, and cimaterol;  $\geq 6$  ppb for zilpaterol; and  $\geq 21$  ppb for ractopamine. Although method is validated for retina and eye balls are not being collected for the 2007 NRP.

<sup>iv</sup> Phenylbutazone will not be scheduled in the 2007 NRP; however, FAST positive samples will be tested for phenylbutazone (ELISA method).

**Table 3B**  
**Production Classes Considered for each Veterinary Drug and Drug Class**  
**2007 FSIS NRP, Domestic Scheduled Sampling**

<i>ERC</i> <sup>i</sup>	<i>Production Class</i>	<i>Veterinary Drug and Priority Rating</i>						
		<i>Antibiotics</i>	<i>Arsenicals</i>	<i>Avermectins</i>	<i>Berenil</i>	<i>Carbadox</i>	<i>Dipyrrone</i>	<i>Florfenicol</i>
		15	4.5	14.0	11.4	15.0	11.4	10.5
0.05	Equine	●		●				
0.428	Bulls	■		●	◆			
1.474	Beef cows	●		■				
1.346	Dairy cows	●		●			○	●
7.045	Heifers	●		●				
13.206	Steers	■		●				
0.014	Bob veal			■				
0.116	Formula-fed veal	●		■				●
0.002	non-Formula-fed veal	●		●				●
0.018	Heavy calves	●		●				
0.02	Bison	■		■				
0.01	Sheep	■		●				
0.166	Lambs	■		●				
0.012	Goats	■		●				
18.79	Market hogs	■	●	■		●		
0.039	Roaster pigs	●		■		●		
0.07	Boars/Stags	●		■				
0.93	Sows	●		■				
46.04	Young chickens	●	●					
0.81	Mature chickens	■						
6.62	Young turkeys	●						
0.06	Mature turkeys	■						
0.18	Ducks	■						
0.003	Geese	■						
>0.01	Squab	■						
<0.01	Ratites	■		■				
<0.01	Rabbits	■						
2.55	Egg products	○						

**Table 3B - continued**  
**Production Classes Considered for each Veterinary Drug and Drug Class**  
**2007 FSIS NRP, Domestic Scheduled Sampling**

ERC	Production Class	Veterinary Drug and Priority Rating						
		Flunixin	Melengestrol Acetate (MGA)	$\beta$ -Agonists	Sulfonamides	Thyreostats	Trenbolone	Zeranol
		7.0	3.0	2.8	12.0	12.3	6.7	12.0
0.05	Equine				■			
0.428	Bulls	○			●			
1.474	Beef cows	○			●			
1.346	Dairy cows	○			●			
7.045	Heifers		●	●	■	○		
13.206	Steers		○	○	●	○		
0.014	Bob veal				●			
0.116	Formula-fed veal		○	●		●	●	●
0.002	non-Formula-fed veal		○	●	●		○	○
0.018	Heavy calves	○			●		○	○
0.02	Bison				■			
0.01	Sheep				●			
0.166	Lambs				●			
0.012	Goats				●			
18.79	Market hogs			●	●			
0.039	Roaster pigs			○	●			
0.07	Boars/Stags				■			
0.93	Sows				■			
46.04	Young chickens				●			
0.81	Mature chickens				■			
6.62	Young turkeys			○	●			
0.06	Mature turkeys				●			
0.18	Ducks				■			
0.003	Geese				■			
>0.01	Squab				■			
<0.01	Ratites				■			
<0.01	Rabbits				■			
2.55	Egg products				■			

**Table 3B - *continued***  
**Production Classes Considered for each Veterinary Drug and Drug Class**  
**2007 FSIS NRP, Domestic Scheduled Sampling**

- = Compound/Production Class Pairs included in the 2007 NRP.
- = FSIS suspended scheduled sampling for this drug-production class pair for the 2007 NRP.
- = Compound/Production Class Pairs that are of regulatory concern, but are not included in the 2007 NRP because of laboratory resource constraints.
- = Compound/Production Class Pairs that have been suspended from testing by FSIS in the 2006 NRP.
- ◆ = Was an exploratory project in the 2006 NRP.

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<sup>i</sup>ERC = Estimated relative percent of domestic consumption, calendar year 2005. 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).

**Table 4**  
**Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>2005 Animal and Egg Production Data<sup>1</sup></i>					
<i>Cattle</i>					
Production Class	Number of Head Slaughtered <sup>2</sup>	Pounds per Animal (dressed weight)	Total Pounds (dressed weight)	Percent Estimated Relative Consumption (all animal production classes and egg products combined)	Percent Estimated Relative Consumption (cattle)
Bulls	518,294	859	445,214,546	0.428	1.81
Beef cows	2,523,000	607	1,531,461,000	1.474	6.23
Dairy cows	2,252,000	621	1,398,492,000	1.346	5.69
Heifers	9,761,000	750	7,320,750,000	7.045	29.79
Steers	16,797,000	817	13,723,149,000	13.206	55.84
Bob veal	196,868	75	14,765,100	0.014	0.06
Formula-fed veal	492,645	245	120,698,025	0.116	0.49
non-Formula-fed veal	7,245	350	2,535,750	0.002	0.01
Heavy calves	46,721	400	18,688,400	0.018	0.08
<b>Total Cattle</b>	<b>32,594,773</b>		<b>24,575,753,821</b>	<b>23.649</b>	<b>100.00</b>

**Table 4- continued**  
**Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>2005 Animal and Egg Production Data<sup>1</sup></i>					
<i>Swine</i>					
Production Class	Number of Head Slaughtered <sup>2</sup>	Pounds per Animal (dressed weight)	Total Pounds (dressed weight)	Percent Estimated Relative Consumption (all animal production classes and egg products combined)	Percent Estimated Relative Consumption (swine)
Market hogs	99,123,000	197	19,527,231,000	18.791	94.76
Roaster pigs	691,901	58	40,130,258	0.039	0.19
Boars/Stags	343,849	213	73,239,837	0.070	0.36
Sows	3,116,000	310	965,960,000	0.930	4.69
<b>Total Swine</b>	<b>103,274,750</b>		<b>20,606,561,095</b>	<b>19.829</b>	<b>100.00</b>

**Table 4- continued**  
**Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>2005 Animal and Egg Production Data<sup>1</sup></i>					
<i>Ovine</i>					
Production Class	Number of Head Slaughtered <sup>2</sup>	Pounds per Animal (dressed weight)	Total Pounds (dressed weight)	Percent Estimated Relative Consumption (all animal production classes and egg products combined)	Percent Estimated Relative Consumption (ovine)
Sheep	129,000	69	8,901,000	0.009	4.59
Goats	541,109	24	12,986,616	0.012	6.69
Lambs	2,425,000	71	172,175,000	0.166	88.72
<b>Total Ovine</b>	<b>3,095,109</b>		<b>194,062,616</b>	<b>0.187</b>	<b>100.00</b>

<i>2005 Animal and Egg Production Data<sup>1</sup></i>					
<i>Equine</i>					
Production Class	Number of Head Slaughtered <sup>2</sup>	Pounds per Animal (dressed weight)	Total Pounds (dressed weight)	Percent Estimated Relative Consumption (all animal production classes and egg products combined)	Percent Estimated Relative Consumption (equine)
Equine	93,768	500	46,884,000	0.045	
<b>Total Equine</b>	<b>93,768</b>		<b>46,884,000</b>	<b>0.045</b>	<b>100.00</b>



**Table 4- continued**  
**Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>2005 Animal and Egg Production Data<sup>1</sup></i>					
<i>Bison</i>					
Production Class	Number of Head Slaughtered <sup>2</sup>	Pounds per Animal (dressed weight)	Total Pounds (dressed weight)	Percent Estimated Relative Consumption (all animal production classes and egg products combined)	Percent Estimated Relative Consumption (bison)
Bison	35,763	610	21,815,430	0.021	
<b>Total Bison</b>	<b>35,763</b>		<b>21,815,430</b>	<b>0.021</b>	<b>100.00</b>

**Table 4- continued**  
**Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>2005 Animal and Egg Production Data<sup>1</sup></i>					
<i>Poultry</i>					
Production Class	Number of Head Slaughtered <sup>2</sup>	Pounds per Animal (dressed weight)	Total Pounds (dressed weight)	Percent Estimated Relative Consumption (all animal production classes and egg products combined)	Percent Estimated Relative Consumption (poultry)
Young chickens	8,993,871,716		47,847,682,669	46.043	85.71
Mature chickens	147,672,000		836,851,300	0.805	1.50
Young turkeys	2,480,864		6,881,876,000	6.622	12.33
Mature turkeys	2,469,651		63,895,888	0.061	0.11
Ducks	27,974,170		188,873,897	0.182	0.34
Geese	252,462		3,408,189	0.003	0.01
Other fowl (includes ratites)	1,299,089		2,436,419	0.002	0.00
<b>Total Poultry</b>	<b>9,176,019,952</b>		<b>55,825,024,362</b>	<b>53.7198</b>	<b>100.00</b>

**Table 4- continued**  
**Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>2005 Animal and Egg Production Data<sup>1</sup></i>					
<i>Rabbits</i>					
Production Class	Number of Head Slaughtered <sup>2</sup>	Pounds per Animal (dressed weight)	Total Pounds (dressed weight)	Percent Estimated Relative Consumption (all animal production classes and egg products combined)	Percent Estimated Relative Consumption (rabbits)
Rabbits	384,863		1,972,516	0.002	
<b>Total Rabbits</b>	<b>384,863</b>		<b>1,972,516</b>	<b>0.002</b>	<b>100.00</b>

<i>2005 Animal and Egg Production Data<sup>1</sup></i>					
<i>Egg Products</i>					
Production Class	Number of Head Slaughtered <sup>2</sup>	Pounds per Animal (dressed weight)	Total Pounds (dressed weight)	Percent Estimated Relative Consumption (all animal production classes and egg products combined)	Percent Estimated Relative Consumption (eggs)
Egg Products			2,646,764,000	2.547	
<b>Total Egg Products</b>			<b>2,646,764,000</b>	<b>2.547</b>	<b>100.00</b>

**Table 4- continued**  
**Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>2005 Animal and Egg Production Data<sup>1</sup></i>				
<i>Totals for all animal production classes and egg products</i>				
Production Class	Number of Head Slaughtered <sup>2</sup>	Total Pounds (dressed weight)	Percent Estimated Relative Consumption (all animal production classes and egg products combined)	Percent Estimated Relative Consumption (each production class)
Cattle	32,594,773	24,575,753,821	23.649	100.00
Swine	103,274,750	20,606,561,095	19.829	100.00
Ovine	3,095,109	194,062,616	0.187	100.00
Equine	93,768	46,884,000	0.045	100.00
Bison	35,763	21,815,430	0.021	100.00
Poultry	9,176,019,952	55,825,024,362	53.7198	100.00
Rabbits	384,863	1,972,516	0.002	100.00
Egg Products		2,646,764,000	2.547	
Totals		103,918,837,840	100.00	

**Table 4- continued**  
**Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

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<sup>1</sup> The numbers in this table were derived from FSIS electronic Animal Disposition Reporting System (eADRS) and National Agricultural Statistical Service (NASS) data on animals (and egg products) presented for slaughter (or processing) in federally inspected establishments, for calendar year 2005 (CY '05), with the exception of the numbers for veal and calves, which were obtained from the FSIS Automated Data Reporting System (ADRS).

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).*

<sup>2</sup> For livestock, NASS does not provide figures for total pounds dressed weight. Therefore, CY '05 NASS figures for number of head slaughtered were multiplied by CY '05 NASS values for average pounds dressed weight per animal (where indicated by square brackets, the latter was unavailable and estimates were used instead), to calculate total pounds dressed weight.

For poultry, rabbits, and egg products the figures for total pounds dressed weight, CY '05, were available from NASS, and it was therefore not necessary to calculate them from the number of head slaughtered.

**Table 5**  
**Veterinary Drug Compound/Production Class Pairs,**  
**Sorted by Sampling Priority Score**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Veterinary Drug or Drug Class</i>	<i>Compound Priority Rating (P)</i>	<i>Production Class</i>	<i>Relative Percent Consumption in 2005 (C)</i>	<i>Sampling Priority Score (P * C)</i>	<i>Unadjusted Number of Samples</i>
Antibiotic	15.00	Young chickens	46.04	690.600	300
Sulfonamides	12.00	Young chickens	46.04	552.480	300
Carbadox	15.00	Market hogs	18.79	281.850	300
Sulfonamides	12.00	Market hogs	18.79	225.480	300
Arsenicals	4.50	Young chickens	46.04	207.180	300
Avermectins	14.00	Steers	13.21	184.884	300
Sulfonamides	12.00	Steers	13.21	158.472	300
Antibiotic	15.00	Heifers	7.05	105.675	300
Antibiotic	15.00	Young turkeys	6.62	99.300	300
Avermectins	14.00	Heifers	7.05	98.630	300
Arsenicals	4.50	Market hogs	18.79	84.560	300
Sulfonamides	12.00	Young turkeys	6.62	79.440	300
$\beta$ -agonists	2.80	Market hogs	18.79	52.612	300

**Table 5 - continued**  
**Veterinary Drug Compound/Production Class Pairs,**  
**Sorted by Sampling Priority Score**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Veterinary Drug or Drug Class</i>	<i>Compound Priority Rating (P)</i>	<i>Production Class</i>	<i>Relative Percent Consumption in 2005 (C)</i>	<i>Sampling Priority Score (P * C)</i>	<i>Unadjusted Number of Samples</i>
Antibiotic	15.00	Beef cows	1.474	22.110	300
MGA	3.00	Heifers	7.05	21.135	300
Antibiotic	15.00	Dairy cows	1.346	20.190	300
B-agonists	2.80	Heifers	7.05	19.726	300
Avermectins	14.00	Dairy cows	1.35	18.844	300
Sulfonamides	12.00	Beef cows	1.474	17.688	300
Sulfonamides	12.00	Dairy cows	1.346	16.152	300
Florfenicol	10.50	Dairy cows	1.35	14.133	300
Antibiotic	15.00	Sows	0.93	13.950	300
Avermectins	14.00	Bulls	0.43	5.992	300
Sulfonamides	12.00	Bulls	0.428	5.136	300
Avermectins	14.00	Lambs	0.17	2.324	300
Sulfonamides	12.00	Lambs	0.166	1.992	300

**Table 5 - continued**  
**Veterinary Drug Compound/Production Class Pairs,**  
**Sorted by Sampling Priority Score**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Veterinary Drug or Drug Class</i>	<i>Compound Priority Rating (P)</i>	<i>Production Class</i>	<i>Relative Percent Consumption in 2005 (C)</i>	<i>Sampling Priority Score (P * C)</i>	<i>Unadjusted Number of Samples</i>
Antibiotic	15.00	Formula-fed veal	0.116	1.740	300
Thyrestats	12.30	Formula-fed veal	0.116	1.427	300
Zeranol	12.00	Formula-fed veal	0.116	1.392	300
Florfenicol	10.50	Formula-fed veal	0.12	1.218	300
Antibiotic	15.00	Boars/Stags	0.07	1.050	300
Antibiotic	15.00	Equine	0.05	0.750	90
Trenbolone	6.37	Formula-fed veal	0.116	0.739	230
Sulfonamides	12.00	Mature turkeys	0.060	0.720	230
Avermectins	14.00	Equine	0.05	0.700	90
Antibiotic	15.00	Roaster pigs	0.039	0.585	230
Carbadox	15.00	Roaster pigs	0.04	0.585	230
Sulfonamides	12.00	Roaster pigs	0.039	0.468	230
$\beta$ -agonists	2.80	Formula-fed veal	0.12	0.325	230



**Table 5 - continued**  
**Veterinary Drug Compound/Production Class Pairs,**  
**Sorted by Sampling Priority Score**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Veterinary Drug or Drug Class</i>	<i>Compound Priority Rating (P)</i>	<i>Production Class</i>	<i>Relative Percent Consumption in 2005 (C)</i>	<i>Sampling Priority Score (P * C)</i>	<i>Unadjusted Number of Samples</i>
Antibiotic	15.00	Heavy calves	0.018	0.270	230
Avermectins	14.00	Heavy calves	0.02	0.252	230
Sulfonamides	12.00	Heavy calves	0.018	0.216	230
Avermectins	14.00	Goats	0.01	0.168	230
Sulfonamides	12.00	Bob veal	0.014	0.168	230
Sulfonamides	12.00	Goats	0.012	0.144	230
Avermectins	14.00	Sheep	0.01	0.140	230
Sulfonamides	12.00	Sheep	0.01	0.12	230
Antibiotic	15.00	Non-Formula-fed veal	0.002	0.030	230
Avermectins	14.00	Non-Formula-fed veal	0.00	0.028	230
Sulfonamides	12.00	Non-Formula-fed veal	0.002	0.024	230
Florfenicol	10.50	Non-Formula-fed veal	0.00	0.021	230
$\beta$ -agonists	2.80	Non-Formula-fed veal	0.00	0.006	230

**Table 6**  
**Number of Scheduled Samples for Veterinary Drug/Production Class Pairs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Veterinary Drug (or drug class)</i>	<i>Production Class</i>	<i>Priority Score<sup>1</sup></i>	<i>Number of Samples<sup>2</sup></i>	<i>% Violation<sup>3</sup></i>	<i>% Violation<sup>4</sup></i>	<i>Unadjusted Number of Samples<sup>5</sup></i>	<i>Adjustment for Violations<sup>6</sup></i>	<i>Adjustment for minor species<sup>7</sup></i>	<i>Adjustment for Lab Capacity<sup>8</sup></i>	<i>Adjustment for Production Facilities<sup>9</sup></i>	<i>Final<sup>10</sup></i>
Antibiotics	Equine	0.75	2,786	5.81	0.00	90	0	0	0	0	90
Antibiotics	Beef cows	22.11	3,623	0.11	0.13	300	300	300	300	300	300
Antibiotics	Dairy cows	20.19	4,776	0.54	0.68	300	300	300	300	300	300
Antibiotics	Heifers	105.68	3,906	0.08	0.09	300	300	300	300	300	300
Antibiotics	Formula-fed veal	1.74	4,527	0.66	0.72	300	300	300	300	300	300
Antibiotics	Non-Formula-fed veal	0.03	1,796	1.45	3.24	300	300	300	300	300	230
Antibiotics	Heavy calves	0.27	2,401	0.62	0.66	300	300	300	300	300	230
Antibiotics	Roaster pigs	0.59	626	1.12	0.29	300	300	300	300	300	230
Antibiotics	Boars/Stags	1.05	2,315	0.26	0.12	300	300	300	300	300	300
Antibiotics	Sows	13.95	3,410	0.44	0.51	300	300	300	300	300	300
Antibiotics	Young chickens	690.60	3,623	0.06	0.06	300	300	300	300	300	300
Antibiotics	Young turkeys	99.30	3,255	0.03	0.00	300	0	0	0	0	300
<b>Totals</b>			<b>37,044</b>			<b>3,390</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,180</b>
Arsenic	Market hogs	84.56	2049	0	0	300	300	300	300	300	300
Arsenic	Young chickens	207.18	6874	0.15	0.08	300	300	300	300	300	300
<b>Totals</b>			<b>8,923</b>			<b>600</b>	<b>600</b>	<b>600</b>	<b>600</b>	<b>600</b>	<b>600</b>
Avermectins	Equine	0.70	2,123	0.71	0.00	90	90	90	90	90	90
Avermectins	Bulls	5.99	2,898	0.35	0.33	300	300	300	300	300	300
Avermectins	Dairy cows	18.84	2,266	0.09	0.00	300	300	300	300	300	300
Avermectins	Heifers	98.63	2,242	0.00	0.00	300	300	300	300	300	300
Avermectins	Steers	184.88	4,169	0.02	0.07	300	300	300	300	300	300
Avermectins	Non-Formula-fed veal	0.03	1,064	0.28	0.66	230	230	230	230	230	230
Avermectins	Heavy calves	0.25	1,880	0.37	0.93	300	300	300	300	300	300
Avermectins	Sheep	0.14	1,198	0.25	0.45	230	230	230	230	230	230
Avermectins	Lambs	2.32	2,150	0.14	0.53	230	230	230	230	230	230
Avermectins	Goats	0.17	2,885	1.49	2.38	230	230	230	230	230	230
<b>Totals</b>			<b>22,875</b>			<b>2,510</b>	<b>2,510</b>	<b>2,510</b>	<b>2,510</b>	<b>2,510</b>	<b>2,510</b>

**Table 6 - continued**  
**Number of Scheduled Samples for Veterinary Drug/Production Class Pairs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Veterinary Drug (or drug class)</i>	<i>Production Class</i>	<i>Priority Score<sup>1</sup></i>	<i>Number of Samples<sup>2</sup></i>	<i>% Violation<sup>3</sup></i>	<i>% Violation<sup>4</sup></i>	<i>Unadjusted Number of Samples<sup>5</sup></i>	<i>Adjustment for Violations<sup>6</sup></i>	<i>Adjustment for minor species<sup>7</sup></i>	<i>Adjustment for Lab Capacity<sup>8</sup></i>	<i>Adjustment for Production Facilities<sup>9</sup></i>	<i>Final<sup>10</sup></i>
Sulfonamides	Bulls	5.136	2,803	0.11	0.11	300	300	300	300	300	300
Sulfonamides	Beef cows	17.688	3,179	0.09	0.11	300	300	300	300	300	300
Sulfonamides	Dairy cows	16.152	3,016	0.23	0.28	300	300	300	300	300	300
Sulfonamides	Steers	158.472	3,377	0.12	0.09	300	300	300	300	300	300
Sulfonamides	Bob veal	0.168	3,694	0.70	0.48	300	300	300	300	300	300
Sulfonamides	Non-Formula-fed veal	0.024	1,821	0.55	0.47	300	300	300	300	300	300
Sulfonamides	Heavy calves	0.216	2,226	0.13	0.14	300	300	300	300	300	300
Sulfonamides	Lambs	1.992	2,514	0.16	0.00	300	300	300	300	300	300
Sulfonamides	Goats	0.144	2,048	0.10	0.00	300	300	300	300	300	300
Sulfonamides	Market hogs	225.48	4,542	0.51	0.52	300	300	300	300	300	300
Sulfonamides	Roaster pigs	0.468	716	1.26	2.21	300	300	300	300	300	300
Sulfonamides	Sheep	0.12	521	0.00	NT	300	300	300	300	300	300
Sulfonamides	Young chickens	552.48	2,806	0.04	0.00	300	300	300	300	300	300
Sulfonamides	Young turkeys	79.44	2,597	0.12	0.00	300	300	300	300	300	300
Sulfonamides	Mature turkeys	0.72	1,684	0.24	0.26	300	300	300	300	300	300
<b>Totals</b>			<b>37,544</b>			<b>4,500</b>	<b>4,500</b>	<b>4,500</b>	<b>4,500</b>	<b>4,500</b>	<b>4,500</b>
<i>β</i> -Agonists	Formula-fed veal	N/A	532	0.00	0.00	300	300	300	300	300	300
<i>β</i> -Agonists	Non-Formula-fed veal	N/A	NT	NT	NT	300	300	300	300	300	300
<i>β</i> -Agonists	Heifers	N/A	NT	NT	NT	300	300	300	300	300	300
<i>β</i> -Agonists	Market hogs	N/A	655	0.00	0.00	300	300	300	300	300	300
<b>Totals</b>			<b>1,187</b>			<b>1,200</b>	<b>1,200</b>	<b>1,200</b>	<b>1,200</b>	<b>1,200</b>	<b>1,200</b>
Carbadox	Market hogs	281.85	575	0.00	0.00	300	300	300	300	300	300
Carbadox	Roaster pigs	0.585	498	0.60	1.06	300	300	300	300	300	300
<b>Totals</b>			<b>1,073</b>			<b>600</b>	<b>600</b>	<b>600</b>	<b>600</b>	<b>600</b>	<b>600</b>

**Table 6 - continued**  
**Number of Scheduled Samples for Veterinary Drug/Production Class Pairs**  
**2007 NRP, Domestic Scheduled Sampling**

<i>Veterinary Drug (or drug class)</i>	<i>Production Class</i>	<i>Priority Score<sup>1</sup></i>	<i>Number of Samples<sup>2</sup></i>	<i>% Violation<sup>3</sup></i>	<i>% Violation<sup>4</sup></i>	<i>Unadjusted Number of Samples<sup>5</sup></i>	<i>Adjustment for Violations<sup>6</sup></i>	<i>Adjustment for minor species<sup>7</sup></i>	<i>Adjustment for Lab Capacity<sup>8</sup></i>	<i>Adjustment for Production Facilities<sup>9</sup></i>	<i>Final<sup>10</sup></i>
Chloramphenicol	Dairy cows	N/A	1,058	0.00	0.00	300	300	300	300	300	300
Chloramphenicol	Formula-fed veal	N/A	1,151	0.00	0.00	300	300	300	300	300	300
Chloramphenicol	Young chickens	N/A	493	0.00	0.00	300	300	300	300	300	300
Chloramphenicol	Young turkeys	N/A	228	0.00	0.00	300	300	300	300	300	300
<b>Totals</b>			<b>2,930</b>			<b>1,200</b>	<b>1,200</b>	<b>1,200</b>	<b>1,200</b>	<b>1,200</b>	<b>1,200</b>
Florfenicol	Dairy cows	14.13	207	0.48	0.48	300	300	300	300	300	300
Florfenicol	Formula-fed veal	1.22	177	0.00	0.00	300	300	300	300	300	300
Florfenicol	Non-Formula-fed veal	0.02	84	5.95	5.95	230	230	230	230	230	230
<b>Totals</b>			<b>468</b>			<b>830</b>	<b>830</b>	<b>830</b>	<b>830</b>	<b>830</b>	<b>830</b>
MGA	Heifers	21.135	1,039	0.00	0.00	300	300	300	300	300	300
<b>Totals</b>			<b>1,039</b>			<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>
Nitrofurans	Market hogs	NA	NT	NT	NT	300	300	300	300	300	300
Nitrofurans	Sows	NA	NT	NT	NT	300	300	300	300	300	300
Nitrofurans	Roaster pigs	NA	NT	NT	NT	300	300	300	300	300	300
<b>Totals</b>			<b>NT</b>			<b>900</b>	<b>900</b>	<b>900</b>	<b>900</b>	<b>900</b>	<b>900</b>
Nitroimidazoles	Young chickens	NA	NT	NT	NT	300	300	300	300	300	300
<b>Totals</b>						<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>
Thyreostats	Formula-fed veal	1.43	NT	NT	NT	300	300	300	300	300	300
<b>Totals</b>			<b>NT</b>			<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>
Trenbolone	Formula-fed veal	0.74	NT	NT	NT	230	230	230	230	230	230
<b>Totals</b>			<b>NT</b>			<b>230</b>	<b>230</b>	<b>230</b>	<b>230</b>	<b>230</b>	<b>230</b>
Zeranol	Formula-fed veal	1.39	1,565	2.88	7.85	230	230	230	230	230	230
<b>Totals</b>			<b>1,565</b>			<b>230</b>	<b>230</b>	<b>230</b>	<b>230</b>	<b>230</b>	<b>230</b>

**Table 6 - continued**  
**Number of Scheduled Samples for Veterinary Drug/Production Class Pairs**  
**2007 NRP, Domestic Scheduled Sampling**

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<sup>1</sup> For an explanation of this score, see Table 5.

<sup>2</sup> Number of Samples (1996-2005) analyzed by the FSIS Scheduled Sampling Plan.

<sup>3</sup> 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, 1996-2005.

<sup>4</sup> 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 3 year period, 2003-2005.

<sup>5</sup> The number obtained from the last column of Table 5

<sup>6</sup> If the violation rate for a compound-production class pair was determined to be 0% for the 3 year period (2003-2005), 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.

<sup>7</sup> The following minor species have been rotated out of the FSIS scheduled sampling plan: Bison; ducks; geese; squab; ratites; and rabbits.

<sup>8</sup> Change is based on the analytical capabilities of the FSIS Laboratories. No changes were made for the 2007 NRP due to laboratory analytical capacity.

<sup>9</sup> For this adjustment, FSIS considered the total number of production facilities (USDA Inspected Establishments for 2003) 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). The total number of samples will not be reduced below 230. Based on these parameters, the number of scheduled samples was adjusted for the following production classes: "Formula-fed veal", "Bob Veal", "Young Turkeys", "Mature Chickens", and "Mature Turkeys." No adjustment will be made for the minor species (bison, ducks, rabbits, geese, squab, and ratites) since these minor species are suspended from testing for the 2007 NRP.

<sup>10</sup> Final numbers were obtained following an assessment of laboratory capacity, production volume, and 3-year violation rate data. FSIS has suspended scheduled sampling for all drugs in horses and minor species (bison, ducks, ratites, geese, rabbits, and squab).

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

## I. Selecting and Ranking Candidate Drugs

The candidate veterinary drugs of concern selected by members of the Surveillance Advisory Team (SAT) for the import scheduled sampling plan 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 import scheduled sampling plan, 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 this is only reinspection because the product was 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 import scheduled sampling plan.

## 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 2007 NRP.

Once the high-priority compounds and compound classes had been identified, FSIS applied other practical considerations to determine the compounds FSIS should sample. The principal consideration is 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 since imported products have been inspected previously by the importing country. Based on these considerations, the following compounds are included in the 2007 FSIS scheduled sampling plan.

### *Antibiotics:*

At present, the following antibiotics are quantitated using the 7-plate bioassay<sup>1</sup> after a specific identification is made using mass spectroscopy (MS) or using high performance liquid chromatography (HPLC): tetracycline, oxytetracycline, chlortetracycline, gentamicin, streptomycin, dihydrostreptomycin, erythromycin, tylosin, neomycin, beta-lactams (quantitated as penicillin-G; penicillins and cephalosporins are not differentiated within this category), and tilmicosin (quantitated by HPLC). The following antimicrobials can be identified by MS; however, no quantitative methods are available for: Spectinomycin; hygromycin; amikacin; kanamycin; apramycin; tobramycin; lincomycin; pirlimycin; clindamycin; and oleandomycin

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<sup>1</sup> 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, HPLC, or mass spectrometry) to establish their identities, where such follow-up methodologies are available. Tetracycline, oxytetracycline, and chlortetracycline share patterns of inhibition and are individually identified by follow-up with the HPLC method for tetracyclines; tilmicosin, tylosin, lincomycin, clindamycin, erythromycin, and pirlimycin, which are individually identified by ion-trap LC/MS/MS. Tissues found to be positive for tilmicosin are quantitated by a NADA method using HPLC. Amikacin, apramycin, dihydrostreptomycin, gentamycin, hygromycin, kanamycin, neomycin, spectinomycin, streptomycin, and tobramycin are individually identified by ion-trap LC/MS/MS. Confirmation for sulfa drugs and flunixin are also provided by the residue chemistry section at the FSIS, Midwestern Laboratory.

*Other Veterinary Drugs:*

- Avermectins in FSIS MRM (doramectin, ivermectin and moxidectin)..
- Sulfonamides (sulfapyridine, sulfadiazine, sulfathiazole, sulfamerazine, sulfamethazine, sulfachloropyridazine, sulfadoxine, sulfamethoxypyridazine, sulfaquinoxaline, sulfadimethoxine, sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfabromomethazine, sulfasalazine, sulfaethoxypyridazine, sulfaphenazole, and sulfatroxazole)

*Banned Drugs*

- Chloramphenicol (Single compound method)

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

SAT participants from the FDA identified, for each of the drugs and drug classes to be included in the 2007 NRP, production classes in which they had a concern. The results are presented in Table 7, *Product Classes Considered for Each Drug/Drug Class*. Compound/product class pairs included in the 2007 NRP are designated by a "●". Those compound/product class pairs that are of potential public health concern, but that are not included in the 2007 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 will continue as long as the product is in compliance.

*Animal Product Classes*

Table 8, *Estimated Annual Amount (in lbs.) 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 is obtained from Automated Import Information System. The percent of each product class imported annually is calculated as shown in equation 7:

$\% \text{ Product Class Imported (P}_C) = \frac{\text{Amount Product Class Imported}}{\text{Total Product Imported}} \times 100$	Equation 7
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The relative sampling priority is obtained by multiplying the percent product class (P<sub>C</sub>) by the drug scores obtained in Phase I, using equation 8.



$$\text{Relative Sampling Priority} = (P_c) \times \text{Drug Score}$$

Equation 8

Based on the scores, one of the following sampling options is chosen: (1) high regulatory concern (300 samples/year) and (2) moderate regulatory concern (230 samples/year), low regulatory concern (90 samples/year). These data are presented in Table 11, *Number of Drug Samples/Product Class*, in the column labeled “Number of Samples.”

FSIS, in its import scheduled sampling plan, will not test (1) processed products from eligible foreign countries that also ship fresh products to the United States; and (2) processed products from countries that source all their raw materials from other foreign countries that are eligible to ship fresh product and are actively exporting to the United States. Processed pork from Canada, Denmark, Ireland, Mexico, Netherlands, and varied combination products and chicken processed from Canada, processed beef from Australia, Canada, Mexico, New Zealand and Uruguay will not be sampled since the raw materials used are from countries that are eligible to ship raw products to the U.S.

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

The adjusted number of samples is listed in Table 12, in the column labeled “Adj No 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 12 in the column labeled “Final Number of Samples.” The numbers in the column 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 Whose Total Volume Imported is less than 1%*

As stated above, if the amount of an import product class is less than 1%, eight samples per compound/compound class are taken from each country. The relative amounts of lamb/mutton processed, goat fresh, turkey fresh and processed, varied combination fresh and processed are less than 1%. In addition, as stated above 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 12-21. The adjusted numbers of samples per country/per product class is listed in the column labeled, “Final Number of Samples” in Tables 12-21.

*Allocation of Samples in Product Classes Where the Total Volume Imported is Greater Than 1%*

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 lbs.) 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*.

<p style="text-align: center;">Percent Product Class Imported per Country (<math>P_{C/C}</math>) =</p> $\frac{\text{Amount of Product Class from Country X 100}}{\text{Total Amount of Product Class}} \qquad \text{Equation 9}$
--

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:

<p style="text-align: center;">Unadjusted Number of Samples per Country (<math>U_{C/S}</math>) = Total Number of Samples <math>\times</math> (<math>P_{C/C}</math>)/100 ...Equation 10</p>
--

This is indicated in the column labeled “Unadjusted Number of Samples ( $U_{C/S}$ ),” in Tables 22-29.

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 22-29. 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 equations:

<p style="text-align: center;">Number of Samples after Adjustment #2 = <math>(U_{C/S}) - \frac{(N \times P_{C/C})}{(P_{T/C})}</math> <span style="float: right;">Equation 11</span></p>
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Where

$N = (N_1) - (N_T)$

$N_1$  = Total Number of Samples after Adjustment #1

$N_T$  = Total Number of Samples Allocated

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

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

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

As mentioned above, if a country is exporting both fresh and processed products or sources all their raw materials from eligible sources then no residue samples will be processed from that country. The final numbers of products sampled are indicated in Tables 22-29 in the column labeled “Final Adj.#.”

*Notes:*

The candidate veterinary drugs of concern selected by members of the SAT for the import scheduled sampling Plan 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 7**  
**Product Classes Considered for Each Drug/Drug Class**  
**2007 FSIS NRP, Import Monitoring Plan**

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

**Key**

● = Compound/product class sampled in the 2007 FSIS Import Monitoring Plan

○ = Compound/product class pair of regulatory concern but not included in the plan because of lab resources

AB=Antibiotics;AVM=Avermectins, AS=Arsenicals; β-A= beta agonist; CHMP=Chloramphenicol;  
RCT=Ractopamine; THY=Thyreostats; NTF= Nitrofurans; NTM=Nitroimidazoles; SLF=Sulfonamides;  
ZRL=Zeranol

**Table 8**  
**Estimated Annual Amount (in lbs.) of Product Imported**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>PRODUCT</b>	<b>PRODUCT IMPORTED IN POUNDS</b>	<b>% PRODUCT IMPORTED</b>
Beef, fresh	2524913744.39	59.20%
Beef, processed	214728602.81	5.03%
Pork, fresh	880096436.67	20.63%
Pork, processed	195078933.85	4.57%
Veal, fresh	67737816.30	1.59%
Veal, processed	7054.00	0.0002%
Lamb/Mutton, fresh	186155041.06	4.4%
Lamb/Mutton, processed	522954.00	0.0123%
Goat, fresh	21718247.15	0.5%
Turkey , fresh	8542427.00	0.2003%
Ratite, fresh	212621.00	0.005%
Chicken, fresh	47997850.00	1.1%
Chicken, processed	76057765.00	1.8%
Turkey, processed	13942828.50	0.32688%
Other Fowl, fresh	4719387.00	0.111%
Other Fowl, processed	118621.38	0.003%
Varied combination, fresh	267853.00	0.006%
Varied combination, processed	22562677.38	0.5%
Guineas/squabs	39.00	0.0000009%
Eggs, processed	0.00	0.000
<b>Total/country</b>	<b>4265380899.49</b>	<b>100.00%</b>

**Table 9**  
**Estimated Annual Amount (in lbs.) of Product Imported/Country**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>PRODUCTION CLASS</b>	<b>Argentina</b>	<b>Australia</b>	<b>Belgium</b>	<b>Brazil</b>	<b>Canada</b>
Beef, fresh		718192319			839745699
Beef, processed	62566579	2736981		114387747	12373256
Pork, fresh		156046			776492386
Pork, processed	12565		1936224	71958	130272542
Veal, fresh		9842403			28893767
Veal, processed		15.00			6304
Lamb/Mutton, fresh		142078208			413138
Lamb/Mutton, processed		258549			151507
Goat, fresh		20795247			
Turkey , fresh					8541105
Ratite, fresh		186284			
Chicken, fresh					47997850
Chicken, processed					66787811
Turkey, processed					7788455
Other Fowl, fresh					4586916
Other Fowl, processed					72900
Varied combination, fresh					267853
Varied combination, processed		25537			19224539
Guineas/squabs					39
Eggs, processed					
<b>Total/country</b>	62579144	125158288	1936224	114459706	1943616069

**Table 9 - continued**  
**Estimated Annual Amount (in lbs.) of Product Imported/Country**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>PRODUCTION CLASS</b>	<b>Costa Rica</b>	<b>Croatia</b>	<b>Denmark</b>	<b>Finland</b>	<b>France</b>
Beef, fresh	19280517				
Beef, processed					
Pork, fresh			80904115	3547519	
Pork, processed		526015	19443146		18091
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					132471
Other Fowl, processed					45721
Varied combination, fresh					
Varied combination, processed					
Guineas/squabs					
Eggs, processed					
<b>Total/country</b>	19280517	526015	100347261	3547519	196283

**Table 9 - continued**  
**Estimated Annual Amount (in lbs.) of Product Imported/Country**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>PRODUCTION CLASS</b>	<b>Germany</b>	<b>Honduras</b>	<b>Hungary</b>	<b>Iceland</b>	<b>Ireland</b>	<b>Israel</b>
Beef, fresh		2455019				
Beef, processed						
Pork, fresh					5186678	
Pork, processed	1344272		1841880		1747	
Veal, fresh						
Veal, processed						
Lamb/Mutton, fresh				211922		
Lamb/Mutton, processed						
Goat, fresh						
Turkey , fresh						
Ratite, fresh						
Chicken, fresh						
Chicken, processed						1352951
Turkey, processed						1334938
Other Fowl, fresh						
Other Fowl, processed						
Varied combination, fresh						
Varied combination, processed						
Guineas/squabs						
Eggs, processed						
<b>Total/country</b>	1344272	2455019	1841880	211922	5188425	2687889

**Table 9 - continued**  
**Estimated Annual Amount (in lbs.) of Product Imported/Country**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>PRODUCTION CLASS</b>	<b>Italy</b>	<b>Japan</b>	<b>Mexico</b>	<b>Netherlands</b>	<b>New Zealand</b>	<b>Nicaragua</b>
Beef, fresh		114	18641633		413021868	48278630
Beef, processed			6424093		5908222	
Pork, fresh			2385774	4810780	138421	
Pork, processed	7745881		6994604	5457021		
Veal, fresh					29001646	
Veal, processed			735			
Lamb/Mutton, fresh			24952		43426821	
Lamb/Mutton, processed			36960		75938	
Goat, fresh			10298		912701	
Turkey , fresh			1322			
Ratite, fresh					26337	
Chicken, fresh						
Chicken, processed			7917003			
Turkey, processed			4819435			
Other Fowl, fresh						
Other Fowl, processed						
Varied combination, fresh						
Varied combination, processed			3303769		8832	
Guineas/squabs						
<b>Total/country</b>	7745881	114	50560578	10267801	492520786	48278630



**Table 9 - continued**  
**Estimated Annual Amount (in lbs.) of Product Imported/Country**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>PRODUCTION CLASS</b>	<b>Poland</b>	<b>Spain</b>	<b>Sweden</b>	<b>UK</b>	<b>Uruguay</b>
Beef, fresh					465297945
Beef, processed					10331724
Pork, fresh			1223085	2238492	
Pork, processed	18030623	1382365			
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					
<b>Total/country</b>	18030623	1382365	1223085	2238492	475629669

**Table 10**  
**Relative Annual Amount of Product Imported/Country**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Production Class</b>	<b>Argentina</b>	<b>Australia</b>	<b>Belgium</b>	<b>Brazil</b>	<b>Canada</b>
Beef, fresh		28.4			33.3
Beef, processed	29.1	1.3		53.3	5.8
Pork, fresh		0.0			88.2
Pork, processed		0.0	1.0		66.8
Veal, fresh		14.5			42.7
Veal, processed		0.2			89.4
Lamb/Mutton, fresh		76.3			0.2
Lamb/Mutton, processed		49.4			29.0
Goat, fresh		95.8			
Turkey , fresh		0.0			100.0
Ratite, fresh		87.6			0.0
Chicken, fresh					100.0
Chicken, processed					87.8
Turkey, processed					55.9
Other Fowl, fresh					97.2
Other Fowl, processed					61.5
Varied combination, fresh					100.0
Varied combination, processed		0.1			85.2

**Table 10 - Continued**  
**Relative Annual Amount of Product Imported/Country**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Production Class</b>	<b>Costa Rica</b>	<b>Croatia</b>	<b>Denmark</b>	<b>Finland</b>	<b>France</b>	<b>Germany</b>
Beef, fresh	0.763					
Beef, processed						
Pork, fresh			9.193	0.403		
Pork, processed		0.269	9.966		0.009	0.689
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					2.806	
Other Fowl, processed					38.543	
Varied combination, fresh						
Varied combination, processed						

**Table 10 - Continued**  
**Relative Annual Amount of Product Imported/Country**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Production Class</b>	<b>Honduras</b>	<b>Hungary</b>	<b>Iceland</b>	<b>Ireland</b>	<b>Israel</b>	<b>Italy</b>	<b>Japan</b>
Beef, fresh	0.097						2.878E+09
Beef, processed							
Pork, fresh				0.589			
Pork, processed		0.944		0.001		3.971	
Veal, fresh							
Veal, processed							
Lamb/Mutton, fresh			0.114				
Lamb/Mutton, processed							
Goat, fresh							
Turkey , fresh							
Ratite, fresh							
Chicken, fresh							
Chicken, processed					1.778		
Turkey, processed					9.574		
Other Fowl, fresh							
Other Fowl, processed							
Varied combination, fresh							
Varied combination, processed							

**Table 10 - Continued**  
**Relative Annual Amount of Product Imported/Country**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Production Class</b>	<b>Mexico</b>	<b>Netherlands</b>	<b>New Zealand</b>	<b>Nicaragua</b>	<b>Poland</b>
Beef, fresh	0.738		16.357	1.912	
Beef, processed	2.991		2.751		
Pork, fresh	0.271	0.547	0.0157		
Pork, processed	3.586	2.797	0		9.243
Veal, fresh			42.814		
Veal, processed	10.419		0		
Lamb/Mutton, fresh	0.013		23.328		
Lamb/Mutton, processed	7.068		14.521		
Goat, fresh	0.047		4.202		
Turkey , fresh	0.016		0		
Ratite, fresh	0		12..387		
Chicken, fresh	0				
Chicken, processed	10.409				
Turkey, processed	34.565				
Other Fowl, fresh					
Other Fowl, processed					
Varied combination, fresh					
Varied combination, processed	14.643		0.039		

**Table 10 - Continued**  
**Relative Annual Amount of Product Imported/Country**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Production Class</b>	<b>Spain</b>	<b>Sweden</b>	<b>UK</b>	<b>Uruguay</b>
Beef, fresh				18.428
Beef, processed				4.812
Pork, fresh		0.139	0.254	
Pork, processed	0.709			
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				

**Table 11**  
**Number of Drug Samples/Product Class**  
**2007 FSIS NRP, Import Monitoring Plan**

No of Countries	Production Class	Drug	% Product Imported	Score	RSP	No. of Samples	Unadjusted No. of Samples	Final No of Samples
9	Beef, fresh	Antibiotics	58.32%	15	875	300	304	304
1	Chicken, fresh	Antibiotics	1.130%	15	17	90	90	8
10	Pork, fresh	Antibiotics	20.65%	15	310	230	231	231
15	Pork, processed	Antibiotics	4.57%	15	69	90	80	0
2	Turkey , fresh	Antibiotics	0.2012%	15	3	90	16	16
1	Varied combination, fresh	Antibiotics	0.006%	15	0	8	8	8
3	Veal, fresh	Antibiotics	1.60%	15	24	90	90	90
3	Veal, processed	Antibiotics	0.0002%	15	0	90	24	0
1	Chicken, fresh	Arsenic	1.130%	4.5	5	90	90	8
3	Chicken, processed	Arsenic	1.791%	4.5	8	90	90	16
10	Pork, fresh	Arsenic	20.65%	4.5	93	90	90	97
2	Turkey , fresh	Arsenic	0.2012%	4.5	1	16	16	16
3	Turkey, processed	Arsenic	0.32834%	4.5	1	24	24	8
9	Beef, fresh	Avermectins	58.32%	14	816	300	304	304
7	Beef, processed	Avermectins	6.19%	14	87	90	75	75
3	Goat, fresh	Avermectins	0.1%	14	1	90	24	24
5	Lamb/Mutton, fresh	Avermectins	4.384%	14	61	90	90	90
4	Lamb/Mutton, processed	Avermectins	0.0123%	14	0	90	32	0
3	Veal, fresh	Avermectins	1.60%	14	22	90	90	90
9	Beef, fresh	Florfenicol	58.32%	0	0	45	45	45
9	Beef, fresh	Flunixin	58.32%	7	408	90	78	78
1	chicken, fresh	Nitroimidazole	1.130%	4.5	5	90	90	8

**Table 11 - Continued**  
**Number of Drug Samples/Product Class**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>No of Countries</b>	<b>Production Class</b>	<b>Drug</b>	<b>% Product Imported</b>	<b>Score</b>	<b>RSP</b>	<b>No. of Samples</b>	<b>Unadjusted No. of Samples</b>	<b>Final No of Samples</b>
10	Pork, fresh	β-Agonists	1.60%	12	19	90	90	30
3	Veal, fresh	β-Agonists	1.60%	2.75	4	90	90	90
9	Beef, fresh	Sulfonamides	58.32%	12	700	300	304	304
7	Beef, processed	Sulfonamides	6.19%	12	74	90	75	75
10	Pork, fresh	Sulfonamides	20.65%	12	248	230	230	231
15	Pork, processed	Sulfonamides	4.57%	12	55	90	90	80
2	Turkey , fresh	Sulfonamides	0.2012%	12	2	90	16	16
3	Turkey, processed	Sulfonamides	0.32834%	12	4	24	24	8
1	Varied combination, fresh	Sulfonamides	0.006%	12	0	8	8	8
4	Varied combination, processed	Sulfonamides	0.531%	12	6	90	32	24
3	Veal, fresh	Sulfonamides	1.60%	12	19	90	90	90
3	Veal, processed	Sulfonamides	0.0002%	12	0	90	24	0
3	Veal, fresh	Thyreostats	1.60%	7	11	90	90	90
3	Veal, fresh	Zeranol	1.60%	12	19	90	90	90
	<b>Total</b>					<b>4021</b>	<b>3508</b>	<b>2844</b>



**Table 12**  
**Number of Samples/Product Class – Pork, Processed**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Pork Processed/ Sulfonamides</b>	<b>% product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Adjust #1</b>	<b>Final No of Samples</b>
Argentina	0.01	0	8	8
Belgium	0.99	1	8	8
Brazil	0.04	0	8	8
Canada	66.77	60	0	0 <sup>1</sup>
Croatia	0.27	0	8	8
Denmark	10.00	9	0	0 <sup>1</sup>
France	0.01	0	8	8
Germany	0.69	1	8	8
Hungary	0.94	1	8	8
Ireland	0.001	0	8	0 <sup>1</sup>
Italy	3.97	4	8	8
Mexico	3.59	3	0	0 <sup>1</sup>
Netherlands	3.00	3	0	0 <sup>1</sup>
Poland	9.24	8	8	8
Spain	0.70	1	8	8
<b>Total</b>	<b>100.22</b>	<b>90</b>	<b>88</b>	<b>80</b>

**Table 13**  
**Number of Samples/Product Class - Goat, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Goat Fresh/Avermectins</b>	<b>%product(Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Australia	95.75	8	8
Mexico	0.05	8	8
New Zealand	4.2	8	8
<b>Total</b>	<b>100</b>	<b>24</b>	<b>24</b>

**Table 14**  
**Number of Samples/Product Class – Turkey, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Turkey Fresh/Antibiotics</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	99.98	8	8
Mexico	0.02	8	8
<b>Total</b>	<b>100</b>	<b>16</b>	<b>16</b>
<b>Turkey Fresh/Sulfonamides</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	99.98	8	8
Mexico	0.02	8	8
<b>Total</b>	<b>100</b>	<b>16</b>	<b>16</b>
<b>Turkey Fresh/Chloramphenicol</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	99.98	8	8
Mexico	0.02	8	8
<b>Total</b>	<b>100</b>	<b>16</b>	<b>16</b>
<b>Turkey Fresh/Arsenicals</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	99.98	8	8
Mexico	0.02	8	8
<b>Total</b>	<b>100</b>	<b>16</b>	<b>16</b>

**Table 15**  
**Number of Samples/Product Class - Turkey, Processed**  
**2007 FSIS Import Monitoring Plan**

<b>Turkey Processed/Arsenicals</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	55.86	8	0 <sup>1</sup>
Israel	9.57	8	8
Mexico	34.57	8	0 <sup>1</sup>
<b>Total</b>	<b>100</b>	<b>24</b>	<b>8</b>
<b>Turkey Processed/Sulfonamides</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	55.86	8	0 <sup>1</sup>
Israel	9.57	8	8
Mexico	34.57	8	0 <sup>1</sup>
<b>Total</b>	<b>100</b>	<b>24</b>	<b>8</b>

**Table 16**  
**Number of Samples/Product Class - Chicken, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Chicken Fresh/Antibiotics</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	100	8	8
<b>Chicken Fresh/Arsenicals</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	100	8	8
<b>Chicken Fresh/Chloramphenicol</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	100	8	8
<b>Chicken Fresh/Nitroimidazole</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	100	8	8
<b>Chicken Fresh/Antibiotics</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	100	8	8

**Table 17**  
**Number of Samples/Product Class – Varied Combination, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Varied Combination Fresh/Antibiotics</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	100	8	8
<b>Total</b>		<b>8</b>	<b>8</b>
<b>Varied Combination Fresh/Sulfonamides</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Canada	100	8	8
<b>Total</b>		<b>8</b>	<b>8</b>

**Table 18**  
**Number of Samples/Product Class – Varied Combination, Processed**  
**2007 FSIS Import Monitoring Plan**

<b>Varied Combination Processed /Sulfonamides</b>	<b>%product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Final No of Samples</b>
Australia	0.15	8	8
Canada	85.21	8	0 <sup>1</sup>
Mexico	14.64	8	8
New Zealand	0.04	8	8
<b>Total</b>	<b>100.04</b>	<b>32</b>	<b>24</b>

**Table 19**  
**Number of Samples/Product Class - Beef, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Beef Fresh/ Antibiotics</b>	<b>%product (Pc/c)</b>	<b>Uc/s=300*(Pc/c)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	28.44	85.32	0	78	78	78
Canada	33.25	99.75	0	91	91	91
Costa Rica	0.78	2.34	8	8	8	8
Honduras	0.1	0.3	8	8	8	8
Japan	0	0	8	8	8	8
Mexico	0.74	2.22	8	8	8	8
New Zealand	16.36	49.08	0	45	45	45
Nicaragua	1.91	5.73	8	8	8	8
Uruguay	18.42	55.26	0	51	50	50
<b>Total</b>	<b>100</b>	<b>300</b>	<b>40</b>	<b>304</b>	<b>304</b>	<b>304</b>
<b>Beef Fresh/ Sulfonamides</b>	<b>%product (Pc/c)</b>	<b>Uc/s=300*(Pc/c)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	28.44	85.32	0	78	78	78
Canada	33.25	99.75	0	91	91	91
Costa Rica	0.78	2.34	8	8	8	8
Honduras	0.1	0.3	8	8	8	8
Japan	0	0	8	8	8	8
Mexico	0.74	2.22	8	8	8	8
New Zealand	16.36	49.08	0	45	45	45
Nicaragua	1.91	5.73	8	8	8	8
Uruguay	18.42	55.26	0	51	50	50
<b>Total</b>	<b>100</b>	<b>300</b>	<b>40</b>	<b>304</b>	<b>304</b>	<b>304</b>
<b>Beef Fresh/ Avermectins</b>	<b>%product (Pc/c)</b>	<b>Uc/s=300*(Pc/c)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	28.44	85.32	0	78	78	78
Canada	33.25	99.75	0	91	91	91
Costa Rica	0.78	2.34	8	8	8	8
Honduras	0.1	0.3	8	8	8	8
Japan	0	0	8	8	8	8
Mexico	0.74	2.22	8	8	8	8
New Zealand	16.36	49.08	0	45	45	45
Nicaragua	1.91	5.73	8	8	8	8
Uruguay	18.42	55.26	0	51	50	50
<b>Total</b>	<b>100</b>	<b>300</b>	<b>40</b>	<b>304</b>	<b>304</b>	<b>304</b>

**Table 19 - continued**  
**Number of Samples/Product Class - Beef, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Beef Fresh/ Chloramphenicol</b>	<b>%Product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	28.44	25.596	0	10	10	10
Canada	33.25	29.925	0	12	12	12
Costa Rica	0.78	0.702	8	8	8	8
Honduras	0.1	0.09	8	8	8	8
Japan	0	0	8	8	8	8
Mexico	0.74	0.666	8	8	8	8
New Zealand	16.36	14.724	8	6	6	8
Nicaragua	1.91	1.719	8	8	8	8
Uruguay	18.42	16.578	0	7	7	8
<b>Total</b>	<b>100</b>	<b>90</b>	<b>48</b>	<b>75</b>	<b>75</b>	<b>78</b>
<b>Beef Fresh/ Florofenicol</b>	<b>%Product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	28.44	25.596	0	10	10	5
Canada	33.25	29.925	0	12	12	5
Costa Rica	0.78	0.702	8	8	8	5
Honduras	0.1	0.09	8	8	8	5
Japan	0	0	8	8	8	5
Mexico	0.74	0.666	8	8	8	5
New Zealand	16.36	14.724	8	6	6	5
Nicaragua	1.91	1.719	8	8	8	5
Uruguay	18.42	16.578	0	7	7	5
<b>Total</b>	<b>100</b>	<b>90</b>	<b>48</b>	<b>75</b>	<b>75</b>	<b>45</b>
<b>Beef Fresh/ Flunixin</b>	<b>%Product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	28.44	25.596	0	10	10	10
Canada	33.25	29.925	0	12	12	12
Costa Rica	0.78	0.702	8	8	8	8
Honduras	0.1	0.09	8	8	8	8
Japan	0	0	8	8	8	8
Mexico	0.74	0.666	8	8	8	8
New Zealand	16.36	14.724	8	6	6	8
Nicaragua	1.91	1.719	8	8	8	8
Uruguay	18.42	16.578	0	7	7	8
<b>Total</b>	<b>100</b>	<b>90</b>	<b>48</b>	<b>75</b>	<b>75</b>	<b>78</b>

**Table 20**  
**Number of Samples/Product Class - Beef, Processed**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Beef Processed/ Sulfonamides</b>	<b>%Product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Argentina	29.14	27	0	27	26	26
Australia	1.27	1.143	0	0	0	0 <sup>1</sup>
Brazil	53.27	47.943	0	50	46	49
Canada	5.76	5.184	0	0	1	0 <sup>1</sup>
Mexico	2.99	2.691	0	0	0	0 <sup>1</sup>
New Zealand	2.75	2.475	0	0	0	0 <sup>1</sup>
Uruguay	4.82	4.338	0	0	0	0 <sup>1</sup>
<b>Total</b>	<b>100</b>	<b>63.774</b>	<b>0</b>	<b>77</b>	<b>74</b>	<b>75</b>
<b>Beef Processed/ Avermectins</b>	<b>%Product (Pc/c)</b>	<b>Uc/s=90*(Pc/c)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Argentina	29.14	27	0	27	26	26
Australia	1.27	1.143	0	0	0	0 <sup>1</sup>
Brazil	53.27	47.943	0	50	46	49
Canada	5.76	5.184	0	0	1	0 <sup>1</sup>
Mexico	2.99	2.691	0	0	0	0 <sup>1</sup>
New Zealand	2.75	2.475	0	0	0	0 <sup>1</sup>
Uruguay	4.82	4.338	0	0	0	0 <sup>1</sup>
<b>Total</b>	<b>100</b>	<b>63.774</b>	<b>0</b>	<b>77</b>	<b>74</b>	<b>75</b>

**Table 21**  
**Number of Samples/Product Class - Pork, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Pork Fresh/Antibiotics</b>	<b>%Product (Pc/c)</b>	<b>(U<sub>C/S</sub>)=230* (P<sub>C/C</sub>)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	0.02	0.046	1	8	8	8
Canada	88	202.4	202	202	152	152
Denmark	9.19	21.137	21	21	15	15
Finland	0.4	0.92	1	8	8	8
Ireland	0.59	1.357	1	8	8	8
Mexico	0.27	0.621	1	8	8	8
Netherlands	0.55	1.265	1	8	8	8
New Zealand	0.02	0.046	1	8	8	8
Sweden	0.14	0.322	1	8	8	8
United Kingdom	0.25	0.575	1	8	8	8
<b>Total</b>	<b>99.43</b>	<b>230</b>	<b>231</b>	<b>287</b>	<b>231</b>	<b>231</b>

**Table 21 - continued**  
**Number of Samples/Product Class - Pork, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Pork Fresh/Arsenicals</b>	<b>%Product (Pc/c)</b>	<b>(U<sub>CS</sub>)=90 * (P<sub>CC</sub>)/100)</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	0.02	0.046	1	8	8	8
Canada	88	79.2	79	79	25	25
Denmark	9.19	8.271	8	8	8	8
Finland	0.4	0.92	1	8	8	8
Ireland	0.59	1.357	1	8	8	8
Mexico	0.27	0.621	1	8	8	8
Netherlands	0.55	1.265	1	8	8	8
New Zealand	0.02	0.046	1	8	8	8
Sweden	0.14	0.322	1	8	8	8
United Kingdom	0.25	0.575	1	8	8	8
<b>Total</b>	<b>99.43</b>	<b>92.623</b>	<b>95</b>	<b>151</b>	<b>97</b>	<b>97</b>
<b>Pork Fresh/B-Agonist</b>	<b>%Product (Pc/c)</b>	<b>(U<sub>CS</sub>)=90 * (P<sub>CC</sub>)/100)</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	0.02	0.046	1	8	8	8
Canada	88	79.2	79	79	25	25
Denmark	9.19	8.271	8	8	8	8
Finland	0.4	0.92	1	8	8	8
Ireland	0.59	1.357	1	8	8	8
Mexico	0.27	0.621	1	8	8	8
Netherlands	0.55	1.265	1	8	8	8
New Zealand	0.02	0.046	1	8	8	8
Sweden	0.14	0.322	1	8	8	8
United Kingdom	0.25	0.575	1	8	8	8
<b>Total</b>	<b>99.43</b>	<b>92.623</b>	<b>95</b>	<b>151</b>	<b>97</b>	<b>97</b>
<b>Pork Fresh/Sulfonamides</b>	<b>%Product (Pc/c)</b>	<b>(U<sub>CS</sub>)=230 * (P<sub>CC</sub>)/100)</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	0.02	0.046	1	8	8	8
Canada	88	202.4	202	202	152	152
Denmark	9.19	21.137	21	21	15	15
Finland	0.4	0.92	1	8	8	8
Ireland	0.59	1.357	1	8	8	8
Mexico	0.27	0.621	1	8	8	8
Netherlands	0.55	1.265	1	8	8	8
New Zealand	0.02	0.046	1	8	8	8
Sweden	0.14	0.322	1	8	8	8
United Kingdom	0.25	0.575	1	8	8	8
<b>Total</b>	<b>99.43</b>	<b>230</b>	<b>231</b>	<b>287</b>	<b>231</b>	<b>231</b>

**Table 22**  
**Number of Samples/Product Class - Chicken, Processed**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Chicken Processed/ Arsenicals</b>	<b>%product (P<sub>C/C</sub>)</b>	<b>(U<sub>C/S</sub>)=90 * (P<sub>C/C</sub>)/100)</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Canada	87.81	79.029	8	0	0	0 <sup>1</sup>
Israel	1.78	1.602	8	8	8	8
Mexico	10.41	9.369	8	8	8	8
	100	90	24	16	16	16

**Table 23**  
**Number of Samples/Product Class - Veal, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Veal Fresh/ Antibiotics</b>	<b>%Product (P<sub>C/C</sub>)</b>	<b>(U<sub>C/S</sub>) =90*[(P<sub>C/C</sub>)/100]</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	14.53	13.077	13			13
Canada	42.66	38.394	38			38
New Zealand	42.81	38.529	39			39
<b>Total</b>	100	90	90			90
<b>Veal Fresh/ Avermectins</b>	<b>%Product (P<sub>C/C</sub>)</b>	<b>(U<sub>C/S</sub>) =90*[(P<sub>C/C</sub>)/100]</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	14.53	13.077	13			13
Canada	42.66	38.394	38			38
New Zealand	42.81	38.529	39			39
<b>Total</b>	100	90	90			90
<b>Veal Fresh/ Flunixin</b>	<b>%Product (P<sub>C/C</sub>)</b>	<b>(U<sub>C/S</sub>) =90*[(P<sub>C/C</sub>)/100]</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	14.53	13.077	13			13
Canada	42.66	38.394	38			38
New Zealand	42.81	38.529	39			39
<b>Total</b>	100	90	90			90
<b>Veal Fresh/ B- agonist</b>	<b>%Product (P<sub>C/C</sub>)</b>	<b>(U<sub>C/S</sub>) =90*[(P<sub>C/C</sub>)/100]</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	14.53	13.077	13			13
Canada	42.66	38.394	38			38
New Zealand	42.81	38.529	39			38
<b>Total</b>	100	90	90			90

**Table 23 - continued**  
**Number of Samples/Product Class - Veal, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Veal Fresh/ Sulfonamides</b>	<b>%Product (P<sub>C/C</sub>)</b>	<b>(U<sub>C/S</sub>) =90*(P<sub>C/C</sub>)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	14.53	13.077	13			13
Canada	42.66	38.394	38			38
New Zealand	42.81	38.529	39			39
<b>Total</b>	<b>100</b>	<b>90</b>	<b>90</b>			<b>90</b>
<b>Veal Fresh/ Chloramphenicol</b>	<b>%Product (P<sub>C/C</sub>)</b>	<b>(U<sub>C/S</sub>) =90*(P<sub>C/C</sub>)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	14.53	13.077	13			13
Canada	42.66	38.394	38			38
New Zealand	42.81	38.529	39			39
<b>Total</b>	<b>100</b>	<b>90</b>	<b>90</b>			<b>90</b>
<b>Veal Fresh/ Zeranol</b>	<b>%Product (P<sub>C/C</sub>)</b>	<b>(U<sub>C/S</sub>) =90*(P<sub>C/C</sub>)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	14.53	13.077	13			13
Canada	42.66	38.394	38			38
New Zealand	42.81	38.529	39			39
<b>Total</b>	<b>100</b>	<b>90</b>	<b>90</b>			<b>90</b>
<b>Veal Fresh/ Threostats</b>	<b>%Product (P<sub>C/C</sub>)</b>	<b>(U<sub>C/S</sub>) =90*(P<sub>C/C</sub>)/100</b>	<b>Adjust #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	14.53	13.077	13			13
Canada	42.66	38.394	38			38
New Zealand	42.81	38.529	39			39
<b>Total</b>	<b>100</b>	<b>90</b>	<b>90</b>			<b>90</b>

**Table 24**  
**Number of Samples/Product Class - Mutton/Lamb, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>Mutton/Lamb Fresh/Avermectins</b>	<b>% Product (P<sub>C/C</sub>)</b>	<b>(U<sub>C/S</sub>) = 90*(P<sub>C/C</sub>)/100</b>	<b>Adjust. #1</b>	<b>Initial Adj</b>	<b>Adjust # 2</b>	<b>Final No of Samples</b>
Australia	76.32	68.688	69	69	51	51
Canada	0.22	0.198	0	8	8	8
Iceland	0.11	0.099	0	8	8	8
Mexico	0.01	0.009	0	8	8	8
New Zealand	23.32	20.988	21	21	15	15
<b>Total</b>	<b>99.98</b>	<b>89.982</b>	<b>90</b>	<b>114</b>	<b>90</b>	<b>90</b>

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



# **Design of the Domestic Scheduled Sampling Plan for Pesticides**

## I. Selecting and Ranking Candidate Pesticides

The candidate pesticides of concern selected by members of the Surveillance Advisory Team (SAT) from the Environmental Protection Agency (EPA). The candidates selected for the 2007 NRP are presented in *Table 25, Scoring Table for Pesticides*. Since the Food Safety and Inspection Service (FSIS) wishes to prioritize 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 25*. 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<sup>1</sup>*:

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

FSIS chose to employ techniques and principles from the field of risk assessment 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.

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<sup>1</sup> 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. Since 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*.

<p>Equation 12</p> <p>Relative Public Health Concern</p> <p>= Estimated relative risk per unit of consumption x <i>modifier for "Lack of FSIS Testing Information on Violations"</i></p> <p>= Estimated relative exposure x Relative toxicity x <i>modifier for "Lack of FSIS Testing Information on Violations"</i></p> <p>= Weighted average of {"Regulatory Concern," "Pre-slaughter Interval," "Bioconcentration factor"} x "Toxicity."</p>
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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 25* 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 25*. FSIS selected this formula, based on a consensus about the relative importance of each modifier, and of how much each modifier should be allowed to alter the underlying risk-based score for Relative Public Health Concern. The value of the selected mathematical formula is that it formalizes the basis of FSIS's judgement. This enables others to observe and understand the adjustments that were made, and it ensures consistency in how these adjustments were applied across a wide range of compounds.

### Equation 13

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

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

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

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

In *Table 26, Rank and Status for Pesticides*, the pesticides are ranked by their rating scores, as generated using the selected weighting scheme given in *Equation 13*. The scores presented in *Table 26* 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 SAT completed ranking the pesticides according to their relative public health concern, the ranking scores were used to select compounds for the 2007 NRP. Using professional judgment, SAT participants decided that the pesticide compounds and compound classes that received a ranking of 21 or greater, as shown in *Table 26* represent a potential public health concern that is sufficient to justify their inclusion in the 2007 NRP. In addition, EPA indicated that pesticide compounds one through seven in *Table 26* have more potential for concern than their scores indicate. For this reason, these compounds were moved to the top of the priority list.

Once these high-priority compounds and compound classes had been identified, it was necessary for FSIS to apply considerations beyond those related to public health to determine the compounds that would be sampled. The principal consideration that was not related to public health was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Based on this constraint, only the chlorinated hydrocarbon/chlorinated organophosphate (CHC/COP) compound class can currently be included in the NRP. There are 39 compounds in this compound class that FSIS will analyze for quantity and chemical identity. There are 4 additional compounds that will only be identified. The compounds are:

HCB, alpha-BHC, lindane, heptachlor, dieldrin, aldrin, endrin, ronnel, linuron, oxychlorane, chlorpyrifos, nonachlor, heptachlor epoxide A, heptachlor epoxide B, endosulfan I, endosulfan I sulfate, endosulfan II, trans-chlordane, cis-chlordane, chlorfenvinphos, p,p'-DDE, p, p'-TDE, o,p'-DDT, p,p'-DDT, carbophenothion, captan, tetrachlorvinphos [stirofos], kepone, mirex, methoxychlor, phosalone,

coumaphos-O, coumaphos-S, toxaphene, famphur, PCB 1242, PCB 1248, PCB 1254, PCB 1260, dicofol\*, PBBs\*, polybrominated diphenyl ethers\*, and deltamethrin\* (\*identification only; not quantitated)

The sampling status of each compound or compound class in the 2007 scheduled sampling plan is provided in *Table 26*. For each highly ranked compound or compound class that was not scheduled for inclusion in the 2007 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 2007 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.

For the 2007 NRP, FSIS has suspended scheduled sampling testing for CHCs and COPs for the following production classes: minor species (ducks, geese, ratites, rabbits, squab, and bison); young chickens; market hogs; steers; young turkeys; mature chickens; bulls; formula-fed veal; mature turkeys; roaster pigs; and bob veal. Not scheduling these species will allow FSIS to focus those resources on the development of methodologies in areas that are of high public health concern. FSIS will continue sampling for CHCs and COPs as a means of scheduled sampling for the occurrence of accidental contamination incidents.

### IV. Allocation of Sampling Resources

Since only the CHC/COP compound class will be included in the 2007 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 25*) and multiplied by the estimated relative percent of domestic consumption for each production class (presented in *Table 4*) 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. Then, rather than simply dividing the production classes into quartiles, the initial sampling levels were chosen using the same cutoff numbers employed in *Table 5* for the veterinary drugs. The cutoff scores are as follows: for a priority score greater than 15, a sample number of 300 was applied and for a priority score of less than 15, a sample number of 230 was applied. The results are presented in *Table 27, Pesticide Compound/Production Class Pairs, Sorted by Sampling Priority Score, with Adjusted Number of Analyses*. These sampling levels provide varying probabilities of detecting residue violations. Larger sample sizes, which provide the greater chance of detecting violations, are directed towards those C/PC pairs that have been identified as representing higher levels of relative public health concern.

## 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 27* lists, for the period 01/01/1995 -12/31/2004 the total number of samples analyzed by FSIS in each production class under its scheduled sampling plan (i.e., random sampling only), 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  $\geq 0.25\%$ : +1 level.
3. At least 300 samples tested over the 10-year period, violation rate = 0.00%: -1 level.
4. The maximum number of samples to be scheduled for testing is 300.

Exceptions to these rules are:

1. Because the use of the CHC/COP method to test for phenylbutazone did not start until recently, FSIS has limited data on the occurrence of this drug in the production classes of interest. Therefore, all production classes for which phenylbutazone was designated as of potential concern (in *Table 3A*, with a "●") were assigned a minimum of 300 samples.
2. For the 2007 NRP, FSIS has suspended scheduled sampling testing for for CHCs and COPs for the following production classes: minor species (ducks, geese, ratites, rabbits, squab, and bison); young chickens; market hogs; steers; young turkeys; mature chickens; bulls; formula-fed veal; mature turkeys; roaster pigs; and bob veal.

All of the above adjustments were applied. The sampling numbers obtained following these adjustments are listed in *Table 27* under the heading, "Initial Adjust," (initial adjusted number of samples).

### *Adjusting for laboratory capacity*

No adjustment for laboratory capacity was necessary for the 2007 NRP.

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

An adjustment to the total number of scheduled samples was made based on the number of production facilities (*Table 27*). For this adjustment, FSIS considered the total number of production facilities (USDA Inspected Establishments for 2003) 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). The total number of samples will not be reduced below 230. Based on these parameters, the number of scheduled samples was adjusted for the following production classes: "Formula-fed veal", "Bob Veal", "Young Turkeys", "Mature Chickens", and "Mature Turkeys." No adjustment will be made for the minor species (bison, ducks, rabbits, geese, squab, and ratites) since these minor species are suspended from testing for the 2007 NRP.

## **V. Scoring Key for Pesticides**

### *FSIS Historical Testing Information on Violations (01/01/199 -12/31/2004)*

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 1995-2004, 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 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***

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

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

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

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

$$\text{RfD} = (\text{NOAEL or LOAEL}) / \text{Total UF}$$

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

$$\text{Acute or Chronic PAD} = (\text{Acute or Chronic RfD}) / \text{FQPA Safety Factor}$$

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

4 = PAD exceeded or carcinogen.

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.

### ***Lack of FSIS Testing Information on Violations***

**The category, "Lack of FSIS Testing Information on Violations," has been removed from the expression for the 2007 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.**

### ***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 25). 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 pre-slaughter interval 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 25). 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 25*). 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 25*). The toxicity value represents EPA’s professional judgment of the toxicity of the compound, including both the dose required to achieve a toxic effect, and the severity of the toxic effect. In the following, “RfD” is the lower of the Acute and Chronic RfD’s. [An explanation of Acute and Chronic RfD is provided in the description of Regulatory Concern, above.] A value for toxicity is determined as follows:

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

**Table 25**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
Benzimidazole Pesticides – compounds in FSIS benzimidazole MRM <sup>7</sup>	Not Tested <sup>8</sup>	3	1	4	3	4	11.0
Carbamates in FSIS Carbamate – compounds in the FSIS MRM <sup>9</sup>	Not Tested	4	4	2	3	4	14.0
Carbamates – compounds not in the FSIS carbamate MRM <sup>10</sup>	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 <sup>11</sup>	3	4	4	4	Not Available	4	16.0
Chlorinated organophosphates and organophosphates (COPs and OPs) not in the FSIS CHC/COP MRM <sup>12</sup>	Not Tested	4	4	4	Not Available	4	16.0
Synthetic Pyrethrins – compounds in the FSIS Synthetic Pyrethrin MRM <sup>13</sup>	Not Tested	3	4	4	3	4	14.0
Triazines – compounds in the FSIS triazine MRM <sup>14</sup>	Not Tested	4	2	3	4	4	13.0
Triazines – compounds not in the FSIS triazine MRM <sup>15</sup>	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 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
1,1-(2,2-dichloroethylidene)bis(4-methoxybenzene)	Not Tested	3	4	4	Not Available	4	14.0
1,1,3,3,-tetrakis(2-methyl-2-phenylpropyl)-1,3-dihydroxydistannoxane	Not Tested	2	1	4	Not Available	3	6.8
1-methoxy-4-(1,2,2,2-tetrachloroethyl)benzene)	Not Tested	3	4	4	Not Available	4	14.0
1-methyl cyromazine	Not Tested	3	4	2	Not Available	4	12.0
1,2,4-Triazole	Not Tested	4	1	3	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

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
2,5-dichloro-4-methoxyphenol	Not Tested	1	1	2	Not Available	3	3.8
2,6-diethylaniline	Not Tested	4	1	3	3	4	12.0
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 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

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

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
6-chloronicotinic acid	Not Tested	3	1	1	Not Available	3	6.0
6-chloropicolinic acid	Not Tested	1	1	4	Not Available	3	5.3
6-methyl-2,3-quinoxalinedithiol	Not Tested	3	1	2	Not Available	4	9.0
Abamectin	Not Tested	2	1	4	Not Available	4	9.0
Abamectin delta 8,9 geometric isomer	Not Tested	2	1	4	Not Available	4	9.0
Acifluorfen, amino analog	Not Tested	3	1	2	Not Available	3	6.8
Alachlor	Not Tested	4	1	3	3	4	12.0
Allophanate	Not Tested	3	1	2	Not Available	4	9.0
Aminomethylphosphonic acid	Not Tested	1	2	1	Not Available	1	1.3
Arsanilic acid	Not Tested	4	1	4	Not Available	4	13.0

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
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
Bis(trichloromethyl)disulfide	Not Tested	3	1	4	Not Available	4	11.0
Bromoxynil	Not Tested	3	1	1	Not Available	4	8.0
Buprofezin	Not Tested	2	1	2	Not Available	4	7.0



**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
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
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

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
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
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
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

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
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
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

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
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
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

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
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
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	1	Not Available	3	7.5
Dipropyl isocinchomerate	Not Tested	3	4	4	Not Available	2	7.0
Diquat dibromide	Not Tested	1	1	3	Not Available	4	6.0

**Table 25 - continued**  
**Scoring Table for Pesticides**  
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<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
Diuron	Not Tested	3	2	3	Not Available	4	11.0
Dodine	Not Tested	2	1	1	Not Available	3	4.5
Enamectin	Not Tested	2	1	4	Not Available	3	6.8
Esfenvalerate	Not Tested	3	4	3	Not Available	3	9.8
Ethalfuralin	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
Etridiazole .	Not Tested	4	1	4	Not Available	3	9.8
ETU	Not Tested	3	1	2	3	4	9.0

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
Fenarimol	Not Tested	1	1	4	Not Available	3	5.3
Fenarimol metabolite B	Not Tested	1	1	4	Not Available	3	5.3
Fenarimol metabolite C	Not Tested	1	1	4	Not Available	3	5.3
Fenbuconazole	Not Tested	4	1	4	Not Available	3	9.8
Fenbutatin Oxide	Not Tested	2	1	4	Not Available	3	6.8
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
Fluazifop-butyl	Not Tested	3	1	2	Not Available	3	6.8

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
Fludioxanil	Not Tested	1	1	4	Not Available	1	1.8
Flufenacet (thiafluamide)	Not Tested	3	1	4	Not Available	3	8.3
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
Flutolanil	Not Tested	2	1	4	Not Available	2	4.5
Fluvalinate	Not Tested	4	1	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



**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
Halosulfuron	Not Tested	1	1	2	Not Available	2	2.5
Hexazinone	Not Tested	3	1	2	Not Available	3	6.8
HOE-061517	Not Tested	1	2	1	Not Available	3	3.8
HOE-099730	Not Tested	1	2	1	Not Available	3	3.8
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	Not Available	1	Not Available	Not Available		0.0
IN-T3935	Not Tested	3	1	2	Not Available	3	6.8

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
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
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

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
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
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
Methoprene	Not Tested	2	1	3	Not Available	2	4.0
Methoxychlor olefin	Not Tested	3	4	4	4	4	14.0
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 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
Metolachlor	Not Tested	3	1	3	3	4	10.0
Metsulfuron Methyl	Not Tested	1	1	1	Not Available	2	2.0
Myclobutanil, myclobutanil alcohol metabolite, myclobutanol dihydroxy metabolite	Not Tested	3	1	2	Not Available	2	4.5
N-(3,4-dichlorophenyl)-N'-methylurea	Not Tested	3	2	3	Not Available	4	11.0
N-(4-chloro-2-trifluoromethylphenyl)- propoxyacetamide	Not Tested	3	1	4	Not Available	3	8.3
Nicotine	Not Tested	1	1	3	Not Available	4	6.0
Nitrapyrin	Not Tested	1	1	4	Not Available	3	5.3
Norfluraxon, desmethyl-	Not Tested	3	1	1	Not Available	4	8.0
Norflurazon	Not Tested	3	1	1	Not Available	4	8.0
N-phenylurea	Not Tested	2	1	2	Not Available	4	7.0

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
NTN33823	Not Tested	3	1	1	Not Available	3	6.0
NTN35884	Not Tested	3	1	1	Not Available	3	6.0
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
Phosalone oxon	Not Tested	4	1	3	Not Available	4	12.0

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
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
Propanil	Not Tested	1	1	3	Not Available	4	6.0
Propargite	Not Tested	3	1	2	Not Available	3	6.8
Propargite	Not Tested	3	1	2	Not Available	3	6.8
Propiconazole	Not Tested	4	1	3	Not Available	4	12.0
Propiconazole metabolite 1,2,4-triazole	Not Tested	4	1	3	Not Available	4	12.0
Propiconazole metabolite CGA 118244	Not Tested	4	1	3	Not Available	4	12.0

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
Propiconazole metabolite CGA 91305	Not Tested	4	1	3	Not Available	4	12.0
Propyzamide	Not Tested	3	1	4	Not Available	3	8.3
Prosulfuron	Not Tested	1	1	3	Not Available	3	4.5
Pymetrozine	Not Tested	1	1	1	Not Available	1	1.0
Pyradostrobin	Not Tested	1	1	3	Not Available	2	3.0
Pyrazon	Not Tested	3	1	1	Not Available	4	8.0
Pyrazon metabolite A	Not Tested	3	1	2	Not Available	4	9.0
Pyrazon metabolite B	Not Tested	3	1	2	Not Available	4	9.0
Pyrethrin I	Not Tested	2	4	4	Not Available	3	9.0
Pyridaben	Not Tested	2	1	2	Not Available	4	7.0

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
Pyriproxifen	Not Tested	1	1	4	Not Available	1	1.8
Quinclorac	Not Tested	2	1	2	Not Available	2	3.5
Quizalofop-ethyl	Not Tested	3	1	2	Not Available	4	9.0
SD 31723	Not Tested	2	1	4	Not Available	3	6.8
SD 33608	Not Tested	2	1	4	Not Available	3	6.8
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



**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
Spinosad	Not Tested	1	1	4	Not Available	1	1.8
Sulfosulfuron	Not Tested	2	1	1	Not Available	2	3.0
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		0.0
Terbacil	Not Tested	1	1	1	Not Available	3	3.0
Tetradifon	Not Tested	1	1	2	Not Available	4	5.0
Thiamethoxam	Not Tested	4	2	1	Not Available	4	11.0

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$((2*R)+P+B)/4)*T$
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
Tralkoxydim	Not Tested	2	1	2	Not Available	2	3.5
Triadimefon	Not Tested	3	1	4	Not Available	4	11.0
Triadimefon metabolite KWG 1323	Not Tested	3	1	4	Not Available	4	11.0
Triadimefon metabolite KWG 1342	Not Tested	3	1	4	Not Available	4	11.0
Triadimefon metabolite KWG 1732	Not Tested	3	1	4	Not Available	4	11.0
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

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound / Compound Class</i>	<i>Historical Testing for Violations<sup>1</sup></i> (V)	<i>Regulatory Concern<sup>2</sup></i> (R)	<i>Pre-Slaughter Interval<sup>3</sup></i> (P)	<i>Bioconcentration<sup>4</sup></i> (B)	<i>Endocrine Disruption<sup>5</sup></i>	<i>Toxicity<sup>6</sup></i> (T)	$(((2*R)+P+B)/4)*T$
Triazole analine	Not Tested	4	1	3	Not Available	4	12.0
Triazole lactic 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	1	1	3	Not Available	2	3.0
Triflumazole	Not Tested	4	1	4	Not Available	3	9.8
Triphenyltin hydroxide	Not Tested	1	1	4	Not Available	4	7.0
WAK4103	Not Tested	3	1	1	Not Available	3	6.0

**Table 25 - continued**  
**Scoring Table for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<sup>1</sup> Scores for historical testing information for residue violations, V, are provided by USDA's Food Safety Inspection Service (FSIS).

<sup>2</sup> Scores for regulatory concern, R, are provided by FDA's Center for Veterinary Medicine (CVM).

<sup>3</sup> Scores for withdrawal time P, are provided by EPA.

<sup>4</sup> Scores for bioconcentration factor are provided by EPA.

<sup>5</sup> Scores for endocrine disruption are provided by EPA.

<sup>6</sup> Scores for toxicity are provided by EPA.

<sup>7</sup> 5-Hydroxythiabendazole, benomyl (as carbendazim), thiabendazole

<sup>8</sup> Not Tested = not scheduled for sampling by FSIS during the 10 year period, 01/01/1995 - 12/31/2004.

<sup>9</sup> Aldicarb, aldicarb sulfoxide, aldicarb sulfone, carbaryl, carbofuran, carbofuran 3-hydroxy

<sup>10</sup> Carbaryl 5,6-dihydroxy, chlorpropham, propham, thiobencarb, 4-chlorobenzylmethylsulfone, 4-chlorobenzylmethylsulfone sulfoxide

<sup>11</sup> HCB, alpha-BHC, coumaphos, coumaphos oxon, lindane, heptachlor, dieldrin, aldrin, endrin, ronnel, linuron, oxychlorane, chlorpyrifos, nonachlor, heptachlor epoxide A, heptachlor epoxide B, endosulfan I, endosulfan I sulfate, endosulfan II, trans-chlordane, cis-chlordane, chlorfenvinphos, p,p'-DDE, p, p'-TDE, o,p'-DDT, p,p'-DDT, carbophenothion, captan, tetrachlorvinphos [stirofos], kepone, mirex, methoxychlor, phosalone, coumaphos-O, coumaphos-S, toxaphene, famphur, PCB 1242, PCB 1248, PCB 1254, PCB 1260, dicofol\*, PBBs\*, polybrominated diphenyl ethers\*, deltamethrin\* (\*identification only).

<sup>12</sup> 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).

<sup>13</sup> Cypermethrin, cis-permethrin, trans-permethrin, fenvalerate, zeta-cypermethrin.

<sup>14</sup> Atrazine, simazine, propazine, terbuthylazine

<sup>15</sup> Atrazine, chloro metabolites, metribuzin, metribuzin DADK, metribuzin DA, metribuzin DK, amitraz, amitraz 2,4-DMA metab., desdiethyl simazine, desethyl simazine, simazine chloro metab.

**Table 26**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Rank</i>	<i>Compound / Compound Class<sup>1</sup></i>	<i>Score</i>	<i>Status in the 2007 NRP</i>		<i>Total</i>
			<i>Domestic Scheduled Sampling</i>	<i>Import Scheduled sampling</i>	
1	Benzimidazole Pesticides – those compounds in the FSIS multi-residue method (MRM) <sup>2</sup>	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
2	Imazalil	16.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
3	Arsanilic acid	13.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
4	1,2,4-Triazole	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
5	Propiconazole metabolite 1,2,4-triazole	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
6	Triazole analine	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
7	Triazole lactic acid	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

*Based on Surveillance Advisory Team (SAT) expert opinion, compounds above this point represent more of a potential public health risk than is indicated by their priority scores.*

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
8	Chlorinated hydrocarbons (CHCs) and chlorinated organophosphates (COPs) – those compounds in the FSIS multi-residue method (MRM) <sup>3</sup>	16.0	90, 300, 300, 300, 300, 300, 230, 230, and 230 samples are scheduled for horses, heifers, dairy cows, beef cows, sows, boars/stags, sheep and lambs, respectively.	908 samples are acheduled for cattle, pigs, sheep, goat, turkey, chicken and other fowls	3,188
9	Chlorinated organophosphates (COPs) and organo phosphates (OPs) - those compounds not in FSIS COP and OP multi-residue method (MRM) <sup>4</sup>	16.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
10	Triazines – those compounds not in FSIS triazine multi-residue method (MRM) <sup>5</sup>	15.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
11	Carbamates – those compounds in the FSIS carbamate triazine multi-residue method (MRM) <sup>6</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
12	Synthetic Pyrethrins – those compounds in the FSIS synthetic pyrethrin multi-residue method (MRM) <sup>7</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
13	1-(2,4-Dichlorophenyl)-2-(1H-imidazole-1-yl)-1-ethanol <sup>8</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
14	1,1-(2,2-Dichloroethylidene)bis(4-methoxybenzene) <sup>9</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
15	1-Methoxy-4-(1,2,2,2-tetrachloroethyl)benzene <sup>10</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
16	3-(1-(2,4-Dichlorophenyl)-2-(1H-imidazole-1-yl)ethoxy)-1,2-propane diol <sup>11</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
17	Cyhalothrin, lambda	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
18	Fipronil <sup>12</sup>	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
19	MB45950	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
20	MB46513	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
21	Methoxychlor olefin	14.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
<p align="center"><i>Based on consultation with Environmental Protection Agency (EPA) and other agencies, compounds below this point were not considered to represent a broad potential public health risk. However, some of these compounds may be sampled on a specific, as needed basis.</i></p>					
22	Triazines – those compounds in the FSIS synthetic pyrethrin multi-residue method (MRM) <sup>13</sup>	13.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
23	Carbamates – those compounds not in the FSIS Carbamate multiresidue method (MRM) <sup>14</sup>	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
24	1-methyl cyromazine	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
25	2-(1-hydroxyethyl)-6-ethylaniline	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
26	2,6-Diethylaniline	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
27	Alachlor <sup>15</sup>	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
28	Cacodylic acid	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
29	CP 101394	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
30	CP 108064	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	



**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
31	CP 108065	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
32	CP 108267	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
33	CP 51214	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
34	Cyromazine <sup>16</sup>	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
35	Phosalone oxon	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
36	PP 890	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
37	Propiconazole	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
38	Propiconazole metabolite CGA 118244	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
39	Propiconazole metabolite CGA 91305	12.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
40	2-(4-((6-chloro-2-benzoxazolyl)oxy)phenoxy)propanoic acid	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
41	2-carboxyisopropyl-4-(2,4-dichloro)-5-isopropoxyphenyl)-1,3,4-oxadiazolin-5-one	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
42	2-t-butyl-4-(2,4-dichloro-5-hydroxyphenyl)-delta 2-1,3,4-oxadiazolin-1,3,4,5-one	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
43	3-(3,4-dichlorophenyl)-1-methoxyurea	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
44	3,4-dichloroaniline	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
45	3,4-dichlorophenylurea	11.0			
46	6-chloro-2,3-dihydro-benzoxazol-2-one	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
47	Bifenthrin	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
48	Bifenthrin, 4'-hydroxy	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
49	Bis(trichloromethyl)disulfide	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
50	Captan epoxide	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
51	Cyclanilide	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
52	Dialifor	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
53	Dialifor oxon	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
54	Dicamba	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
55	Diuron	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
56	Fenoxaprop ethyl	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
57	N-(3,4-dichlorophenyl)-N <sup>1</sup> -methylurea	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
58	Oxadiazon	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
59	Oxyfluorfen	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
60	Thiamethoxam	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
61	THPI	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
62	Triadimefon	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
63	Triadimefon metabolite KWG 1323	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
64	Triadimefon metabolite KWG 1342	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
65	Triadimefon metabolite KWG 1732	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
66	Triadimenol (for metabolites see triadimefon)	11.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
67	Cyfluthrin	10.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
68	MB 46136	10.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
69	Octyl bicycloheptene dicarboximide (MGK-264)	10.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
70	2-((2-ethyl-6-methylphenyl)-amino)-1-propanol	10.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
71	4-(2-ethyl-6-methylphenyl)-2-hydroxy-5-methyl-3-morpholinone	10.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
72	Dioxathion	10.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
73	Iprodione	10.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
74	Iprodione isomer	10.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
75	Iprodione metabolite	10.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
76	Iprodione metabolite 2	10.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
77	Metolachlor	10.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
78	Difenoconazole	9.8	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
79	Esfenvalerate	9.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
80	Etridiazole .	9.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
81	Fenbuconazole	9.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
82	Fluvalinate	9.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
83	Kresoxim-methyl	9.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
84	SD 54597	9.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
85	Triflumazole	9.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
86	2-aminobenzimidazole	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
87	6-methyl-2,3-quinoxalinedithiol	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
88	Abamectin	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
89	Abamectin delta 8,9 geometric isomer	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
90	Allophanate	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
91	Carboxin	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
92	Carboxin sulfoxide	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
93	Ethalfuralin	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
94	ETU	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	



**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
95	Isoxaflutole	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
96	Mancozeb	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
97	Maneb	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
98	Metiram	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
99	Piperonyl butoxide	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
100	Pyrazon metabolite A	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
101	Pyrazon metabolite B	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
102	Pyrethrin I	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
103	Quizalofop-ethyl	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
104	TCP=3,5,6-trichloro-2-pyridinol	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
105	Thiophanate methyl	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
106	Triclopyr	9.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
107	3-carboxy-5-ethoxy-1,2,4-thiadiazole	8.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
108	4-chloro-2-trifluoromethylaniline	8.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
109	Chlorobenzilate	8.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
110	Flufenacet (thiaflumide)	8.3	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
111	Methyl 3,5-dichlorobenzoate	8.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
112	N-(4-chloro-2-trifluoromethylphenyl)-propoxyacetamide	8.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
113	Propyzamide	8.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
114	Tebuconazole	8.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
115	Tebufenozide	8.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
116	3-(2-chloro-4-hydroxyphenyl)-6-(2-chlorophenyl)-1,2,4,5-tetrazine	8.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
117	Bromoxynil	8.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
118	Clofentezine	8.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Rank</i>	<i>Compound / Compound Class<sup>1</sup></i>	<i>Score</i>	<i>Status in the 2007 NRP</i>		<i>Total</i>
			<i>Domestic Scheduled Sampling</i>	<i>Import Scheduled sampling</i>	
119	Mepiquat chloride	8.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
120	Norfluraxon, desmethyl-	8.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
121	Norflurazon	8.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
122	Oxythioquinox	8.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
123	Paraquat dichloride	8.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
124	Pyrazon	8.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
125	Diphenylamine	7.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
126	Fenpropathrin	7.5	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
127	4-hydrocythidiazuron	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
128	Buprofezin	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
129	Cyclohexylstannoic acid	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
130	Cyhexatin	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
131	Dicyclohexyltin oxide	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
132	Diflubenzuron	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
133	Dipropyl isocinchomerate	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
134	Ethoxyquin	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
135	N-phenylurea	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
136	PB-9	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
137	Pyridaben	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
138	Thidiazuron	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
139	Triphenyltin hydroxide	7.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
140	1,1,3,3,-tetrakis(2-methyl-2-phenylpropyl)-1,3-dihydroxydistannoxane	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
141	2-amino-n-isopropylbenzamide	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
142	Acifluorfen, amino analog	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
143	Bentazon, 6-hydroxy bentazon, 8-hydroxy bentazon	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
144	Chlorsulfuron	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
145	Chlorsulfuron, 5-hydroxy-	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
146	Emamectin	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
147	Fenbutatin Oxide	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
148	Fluazifop-butyl	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
149	Hexazinone	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
150	IN-A3928	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Rank</i>	<i>Compound / Compound Class<sup>1</sup></i>	<i>Score</i>	<i>Status in the 2007 NRP</i>		<i>Total</i>
			<i>Domestic Scheduled Sampling</i>	<i>Import Scheduled sampling</i>	
151	IN-B2838	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
152	IN-T3935	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
153	IN-T3936	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
154	IN-T3937	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
155	Propargite	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
156	Propargite	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
157	SD 31723	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
158	SD 33608	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	



**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Rank</i>	<i>Compound / Compound Class<sup>1</sup></i>	<i>Score</i>	<i>Status in the 2007 NRP</i>		<i>Total</i>
			<i>Domestic Scheduled Sampling</i>	<i>Import Scheduled sampling</i>	
159	Sodium acifluorfen	6.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
160	6-chloronicotinic acid	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
161	Benoxacor	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
162	CGA 150829	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
163	CGA 171683	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
164	Dalapon	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
165	Diphenamid	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
166	Diphenamid, desmethyl	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
167	Diquat dibromide	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
168	Imidacloprid	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
169	Nicotine	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
170	NTN33823	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
171	NTN35884	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
172	PB-7	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
173	Primisulfuron-methyl	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
174	Propanil	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
175	WAK4103	6.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
176	6-chloropicolinic acid	5.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
177	Fenarimol	5.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
178	Fenarimol metabolite B	5.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
179	Fenarimol metabolite C	5.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
180	Fenridazon	5.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
181	Fluridone	5.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
182	Nitrapyrin	5.3	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
183	Tebuthiuron	5.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
184	Chlorfenapyr	5.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
185	Diflufenzopyr	5.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
186	Tetradifon	5.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
187	2,4-D	4.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
188	Dodine	4.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
189	Flutolanil	4.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
190	Myclobutanil, myclobutanil alcohol metabolite, myclobutanol dihydroxy metabolite	4.5	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Rank</i>	<i>Compound / Compound Class<sup>1</sup></i>	<i>Score</i>	<i>Status in the 2007 NRP</i>		<i>Total</i>
			<i>Domestic Scheduled Sampling</i>	<i>Import Scheduled sampling</i>	
191	Prosulfuron	4.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
192	Difenzoquat	4.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
193	Ethephon	4.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
194	MCPA	4.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
195	Methoprene	4.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
196	2,5-dichloro-4-methoxyphenol	3.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
197	Chloroneb	3.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
198	Chloroneb, hydroxy-	3.8	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
199	Clofencet	3.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
200	Glufosinate-Ammonium	3.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
201	HOE-061517	3.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
202	HOE-099730	3.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
203	2,3-dihydro-3,3-dimethyl-2-oxo-5-benzofuranyl methyl sulfonate	3.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
204	2-hydroxy-2,3-dihydro-3,3-dimethyl-5-benzofuranyl methyl sulfonate	3.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
205	Butylamine, sec-	3.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
206	Compound 125670	3.5	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
207	Ethofumesate	3.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
208	Quinclorac	3.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
209	Sethoxydim	3.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
210	Sethoxydim hydroxylate sulfone	3.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
211	Sethoxydim sulfoxide	3.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
212	Tralkoxydim	3.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
213	3-t-butyl-5-chloro-6-hydroxymethyluracil	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
214	6-chloro-2,3-dihydro-3,3,7-trimethyl-5H-oxazolo(3,2a)pyrimidin-5-one	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

Rank	Compound / Compound Class <sup>1</sup>	Score	Status in the 2007 NRP		Total
			Domestic Scheduled Sampling	Import Scheduled sampling	
215	6-chloro-2,3-dihydro-7-hydroxymethyl-3,3-dimethyl-5H-oxazolo(3,2-a)pyrimidin-5-one	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
216	Azoxystrobin	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
217	Azoxystrobin Z isomer	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
218	CGA 161149	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
219	CGA 195654	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
220	Cloprop	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
221	Dimethenamid	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
222	Dimethipin	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	



**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Rank</i>	<i>Compound / Compound Class<sup>1</sup></i>	<i>Score</i>	<i>Status in the 2007 NRP</i>		<i>Total</i>
			<i>Domestic Scheduled Sampling</i>	<i>Import Scheduled sampling</i>	
223	Fluroxypyr	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
224	Pyradostrobin	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
225	Sulfosulfuron	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
226	Terbacil	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
227	Triasulfuron	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
228	Trifloxystrobin	3.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
229	Maleic hydrazide	2.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
230	Clopyralid	2.5	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Rank</i>	<i>Compound / Compound Class<sup>1</sup></i>	<i>Score</i>	<i>Status in the 2007 NRP</i>		<i>Total</i>
			<i>Domestic Scheduled Sampling</i>	<i>Import Scheduled sampling</i>	
231	Halosulfuron	2.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
232	Picloram	2.5	Not in the 2007 NRP.	Not in the 2007 NRP.	
233	Clethodim		Not in the 2007 NRP.	Not in the 2007 NRP.	
234	Glyphosate-Trimesium	2.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
235	Metsulfuron Methyl	2.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
236	Carfentrazone Ethyl	1.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
237	Fludioxanil	1.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
238	Pyriproxifen	1.8	Not in the 2007 NRP.	Not in the 2007 NRP.	

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Rank</i>	<i>Compound / Compound Class<sup>1</sup></i>	<i>Score</i>	<i>Status in the 2007 NRP</i>		<i>Total</i>
			<i>Domestic Scheduled Sampling</i>	<i>Import Scheduled sampling</i>	
239	Spinosad	1.8	Not in the 2007 NRP.	Not in the 2007 NRP.	
240	Aminomethylphosphonic acid	1.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
241	Glyphosate	1.3	Not in the 2007 NRP.	Not in the 2007 NRP.	
242	Bensulfuron methyl ester		Not in the 2007 NRP.	Not in the 2007 NRP.	
243	Fluthiacet-Methyl (CGA-248757)	1.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
244	Pymetrozine	1.0	Not in the 2007 NRP.	Not in the 2007 NRP.	
245	Indoxacarb (DPX-MP062)		Not in the 2007 NRP.	Not in the 2007 NRP.	
246	Teflubenzuron				

**Table 26 - continued**  
**Rank and Status for Pesticides**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

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<sup>1</sup> Only those pesticides that have been designated as representing a broad potential public health risk are included in this summary table. For a complete list of pesticides that were considered for the 2006 NRP, see Table 28.

<sup>2</sup> 5-Hydroxythiabendazole, benomyl (as carbendazim), and thiabendazole.

<sup>3</sup> HCB, alpha-BHC, lindane, heptachlor, dieldrin, aldrin, endrin, ronnel, linuron, oxychlorane, chlorpyrifos, nonachlor, heptachlor epoxide A, heptachlor epoxide B, endosulfan I, endosulfan I sulfate, endosulfan II, trans-chlordane, cis-chlordane, chlorfenvinphos, p,p'-DDE, p, p'-TDE, o,p'-DDT, p,p'-DDT, carbophenothion, captan, tetrachlorvinphos [stirofos], kepone, mirex, methoxychlor, phosalone, coumaphos-O, coumaphos-S, toxaphene, famphur, PCB 1242, PCB 1248, PCB 1254, PCB 1260, dicofol\*, PBBs\*, polybrominated diphenyl ethers\*, deltamethrin\*) (\*identification only).

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

<sup>5</sup> Regulatory method is needed; Atrazine chloro metabolites, metribuzin, metribuzin DADK, metribuzin DA, metribuzin DK, amitraz, amitraz 2,4-DMA metab., desdiethyl simazine, desethyl simazine, simazine chloro metabolites.

<sup>6</sup> Regulatory method is needed; Aldicarb, aldicarb sulfoxide, aldicarb sulfone, carbaryl, carbofuran, carbofuran, 3-hydroxy.

<sup>7</sup> Cypermethrin, *cis*-permethrin, *trans*-permethrin, fenvalerate, *zeta*-cypermethrin.

<sup>8</sup> Regulatory method is needed.

<sup>9</sup> Regulatory method is needed.

<sup>10</sup> Regulatory method is needed.

<sup>11</sup> Regulatory method is needed.

<sup>12</sup> Regulatory method is needed.

<sup>13</sup> Regulatory method is needed; Atrazine, simazine, propazine, terbuthylazine.

<sup>14</sup> Carbaryl 5,6-dihydroxy, chlorpropham, propham, thiobencarb, 4-chlorobenzylmethylsulfone, 4-chlorobenzylmethylsulfone sulfoxide

<sup>15</sup> Method is available.

<sup>16</sup> Method is available.

**Table 27**  
**Pesticide Compound/Production Class Pairs, Sorted by Sampling Priority Score, with Adjusted Number of Analyses**  
**2007 FSIS NRP, Domestic Scheduled Sampling Plan**

<i>Compound Class</i>	<i>Production Class</i>	<i>Priority Score</i>	<i>Unadjusted Number of Samples</i>	<i>First Adjustment<sup>1</sup></i>	<i>Adjusted Number<sup>2</sup></i>	<i>Second Adjustment<sup>3</sup></i>	<i>Third Adjustment<sup>4</sup></i>	<i>Final<sup>5</sup></i>
CHCs/COPs	Heifers	117.74	300		300			300
CHCs/COPs	Beef cows	50.48	300		300			300
CHCs/COPs	Dairy cows	22.24	300		300			300
CHCs/COPs	Sows	16.48	300		300			300
CHCs/COPs	Lambs	2.78	230		230			230
CHCs/COPs	Boars/Stags	1.12	230		300			300
CHCs/COPs	Equine	0.46	90		90			90
CHCs/COPs	Goats	0.46	230		230			230
CHCs/COPs	Sheep	0.16	230		230			230
<b>Totals</b>			<b>2280</b>		<b>2280</b>			<b>2280</b>

<sup>1</sup> Adjustment based on FSIS Historical Testing Information (refer to text discussion in Section 4); +1 level or -1 level. There are three sampling levels: 90, 230 and 300. Sampling levels were increased or decreased based on the rules described in the section, *Design of the Domestic Scheduled Sampling Plan for Pesticides*.

<sup>2</sup> Number of samples proposed following adjustment for lack of testing information.

<sup>3</sup> Adjustment for Laboratory Capacity as discussed in the section, *Design of the Domestic Scheduled Sampling Plan for Pesticides*

<sup>4</sup> Adjustment for Production Volume as discussed in the section, *Design of the Domestic Scheduled Sampling Plan for Pesticides*

<sup>5</sup> 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) for the 2006 NRP

# **Design of the Import Scheduled Sampling Plan for Pesticides**

## I. Selecting and Ranking Candidate Pesticides

The list of compounds of concern for the import scheduled sampling plan is identical to that for the Domestic Scheduled Sampling Plan (*Table 25*). In ranking pesticides for inclusion in the import scheduled sampling plan, 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 import scheduled sampling plan.

## II. Prioritizing Candidate Pesticides

The list of high priority compounds chosen for the import scheduled sampling plan by the Surveillance Advisory Team (SAT) is the same as that for the domestic plan. Once the high-priority compounds and compound classes had been identified, FSIS applies non-public health considerations to determine which compounds FSIS should sample. The principal non-public health factor was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Based on these constraints, only the chlorinated hydrocarbon/chlorinated organophosphate (CHCs/COPs) compound class can be included in the 2007 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 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 will continue as long as the product is in compliance.

### *Animal Product Classes*

*Table 8, Estimated Annual Amount (in lbs.) of Product Imported*, lists the estimated amounts of all product classes imported into the U.S. and the percentage of each of the product classes. The percentage of each product class imported annually is calculated using the following 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:

<p>Equation 16</p> $\text{Relative Sampling Priority} = (P_C) \times \text{Pesticide Score}$
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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 25, Number of Pesticide Samples/Product Class*, in the column “Number of Samples.”

In the import scheduled sampling plan, 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 pork from Canada, Denmark, Ireland, Mexico, Netherlands; varied combination products and processed chicken from Canada and processed beef from Australia, Canada, Mexico, New Zealand and Uruguay will not be sampled since the raw materials used are from the fore mentioned countries eligible to ship raw products to the U.S.

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

The adjusted number of samples is listed in *Table 25, 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 25* 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 1%*

If the amount of an import product class is less than 1% in a specific country, eight samples per compound/compound class are taken from that country. The relative amounts of lamb/mutton processed, goat fresh, turkey fresh and processed, varied combination fresh and processed are less than 1%. Also, as stated above, if a country is exporting both fresh and processed products or sources all their raw materials from eligible sources then no residue samples will be scheduled for the



processed products from that country. The numbers of samples per country per product class for each compound/compound class are listed in *Tables 29-41*.

*Allocation of Samples in Product Classes where the Total Volume Imported is Greater than 1%*

For major product classes, the number of samples was allocated to each country depending upon the relative amount of product imported from that country. *Table 9, Estimated Annual Amount (in lbs.) of Product Imported/Country*, lists the amount of product imported from each country. The percent of a product class imported from a country was calculated as follows and is in *Table 10, Relative Annual Amount of Product Imported/Country*.

Equation 17	
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	
Unadjusted Number of Samples per Country ( $U_{C/S}$ ) =	$\frac{\text{Total Number of Samples}}{100} \times (P_{C/C})$

This is indicated in the column labeled “Unadjusted Number of Samples ( $U_{C/S}$ ),” in *Tables 29-41*.

After the determining of the number of samples required from each country, each country with less than eight samples was assigned a minimum of eight samples. This is indicated in the column labeled “Adjustment # 1” in *Tables 29-41*. 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 will be accomplished by using the following equation:

Equation 19

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

where,

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

$N_1$  = Total Number of Samples after Adjustment #1

$N_T$  = Total Number of Samples Allocated

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

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

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

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

**Table 28**  
**Number of Pesticide Samples/Product Class**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>No. of Countries</b>	<b>Product</b>	<b>Pesticide</b>	<b>Pesticide Score</b>	<b>Percent Product</b>	<b>Relative Sampling Priority</b>	<b>Number of Samples</b>	<b>Adjusted Number of Samples</b>	<b>Final Number of Samples</b>
9	Beef, fresh	CHCs/COPs	16	58.32	933.17	300	300	304
7	Beef, processed	CHCs/COPs	16	6.19	99.09	90	90	75
10	Pork, fresh	CHCs/COPs	16	20.65	330.47	230	230	231
15	Pork, processed	CHCs/COPs	16	4.66	74.64	90	90	72
3	Veal, fresh	CHCs/COPs	16	1.60	25.52	90	90	0
3	Veal, processed	CHCs/COPs	16	0.0002	0.00	90	24	0
5	Lamb/Mutton, fresh	CHCs/COPs	16	4.4	70.14	90	90	90
4	Lamb/Mutton, processed	CHCs/COPs	16	0.01	0.20	90	32	24
3	Goat, fresh	CHCs/COPs	16	0.1	1.02	90	24	24
2	Turkey , fresh	CHCs/COPs	16	0.20	3.22	90	16	8
1	Chicken, fresh	CHCs/COPs	16	1.10	18.08	90	90	8
3	Chicken, processed	CHCs/COPs	16	1.80	28.66	90	90	16
3	Turkey, processed	CHCs/COPs	16	0.33	5.25	90	24	24
1	Varied combination, fresh	CHCs/COPs	16	0.01	0.10	90	8	8
4	Varied combination, processed	CHCs/COPs	16	0.50	8.50	90	32	24
	<b>Total/country</b>			100.00%		<b>1700</b>	<b>1230</b>	<b>908</b>

**Table 29**  
**Number of Samples/Product Class – Pork Processed**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>PORK PROCESSED/ CHC/COP</b>	<b>PERCENT PRODUCT</b>	<b>UNADJUSTED NUMBER OF SAMPLES</b>	<b>FINAL NUMBER OF SAMPLES</b>
Argentina	0.02	0	8
Belgium	1.14	1	0 <sup>1</sup>
Brazil	0.05	0	8
Canada	69.00	62	0 <sup>1</sup>
Croatia	0.18	0	8
Denmark	13.00	12	0 <sup>1</sup>
France	0.06	0	8
Germany	0.58	1	8
Hungary	0.76	1	8
Italy	2.93	3	8
Mexico	1.47	1	0 <sup>1</sup>
Netherlands	2.91	3	0 <sup>1</sup>
Poland	6.89	6	8
Spain	0.55	0	8
<b>Total</b>	<b>99.54</b>	<b>90</b>	<b>72</b>

**Table 30**  
**Number of Samples/Product Class – Mutton/Lamb Processed**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>MUTTON/LAMB, PROCESSED/CHC/COP</b>	<b>PERCENT PRODUCT</b>	<b>UNADJUSTED NUMBER OF SAMPLES</b>	<b>FINAL NUMBER OF SAMPLES</b>
Australia	36	0	0 <sup>1</sup>
France	0.44	8	8
Mexico	5.4	8	8
New Zealand	39	0	0 <sup>1</sup>
Uruguay	19	8	8
<b>Total</b>	<b>99.84</b>	<b>24</b>	<b>24</b>

**Table 31**  
**Number of Samples /Product Class - Goat, Fresh**  
**2007 Import Residue Plan**

<b>GOAT, FRESH/CHC/COP</b>	<b>PERCENT PRODUCT</b>	<b>UNADJUSTED NUMBER OF SAMPLES</b>	<b>FINAL NUMBER OF SAMPLES</b>
Australia	94	8	8
Mexico	0.01	8	8
New Zealand	5.84	8	8
<b>Total</b>	<b>99.85</b>	<b>24</b>	<b>24</b>

**Table 32**  
**Number of Samples /Product Class – Turkey, Fresh**  
**2007 Import Residue Plan**

<b>TURKEY, FRESH/CHC/COP</b>	<b>PERCENT PRODUCT</b>	<b>UNADJUSTED NUMBER OF SAMPLES</b>	<b>FINAL NUMBER OF SAMPLES</b>
Canada	100	8	8
<b>Total</b>		<b>8</b>	<b>8</b>

**Table 33**  
**Number of Samples /Product Class – Turkey, Processed**  
**2007 Import Residue Plan**

<b>TURKEY, FRESH/CHC/COP</b>	<b>PERCENT PRODUCT</b>	<b>UNADJUSTED NUMBER OF SAMPLES</b>	<b>FINAL NUMBER OF SAMPLES</b>
Canada	64	8	0 <sup>1</sup>
France	0.04	8	8
Israel	10	8	8
Mexico	26	8	8
<b>Total</b>	<b>100.04</b>	<b>32</b>	<b>24</b>

**Table 34**  
**Number of Samples /Product Class – Chicken, Fresh**  
**2007 Import Residue Plan**

<b>CHICKEN, FRESH/CHC/COP</b>	<b>PERCENT PRODUCT</b>	<b>UNADJUSTED NUMBER OF SAMPLES</b>	<b>FINAL NUMBER OF SAMPLES</b>
Canada	100	8	8
<b>Total</b>		<b>8</b>	<b>8</b>

**Table 35**  
**Number of Samples /Product Class – Varied Combination, Fresh**  
**2007 Import Residue Plan**

<b>VARIED COMBINATIONS, FRESH/CHC/COP</b>	<b>PERCENT PRODUCT</b>	<b>UNADJUSTED NUMBER OF SAMPLES</b>	<b>FINAL NUMBER OF SAMPLES</b>
Canada	100	8	8
<b>Total</b>		<b>8</b>	<b>8</b>

**Table 36**  
**Number of Samples /Product Class - Varied Combination, Processed**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>VARIED COMBINATION, PROCESSED/CHC/COP</b>	<b>PERCENT PRODUCT</b>	<b>UNADJUSTED NUMBER OF SAMPLES</b>	<b>FINAL NUMBER OF SAMPLES</b>
Australia	0.15	8	8
Canada	82.42	8	0 <sup>1</sup>
France	0.25	8	8
Mexico	17.16	8	8
<b>Total</b>	<b>99.98</b>	<b>32</b>	<b>24</b>

**Table 37**  
**Number of Samples/Product Class - Beef, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>BEEF, FRESH/CHC/COP</b>	<b>PERCENT PRODUCT (P<sub>CC</sub>)</b>	<b>UNADJUSTED NUMBER OF SAMPLES (U) = 300*[(P<sub>CC</sub>)/100]</b>	<b>ADJUSTMENT #1 (8 MINIMUM/COUNTRY)</b>	<b>INITIAL ADJ.#</b>	<b>ADJUST. # 2</b>	<b>FINAL NUMBER OF SAMPLES</b>
Australia	28.44	85.32	0	78	78	78
Canada	33.25	99.75	0	91	91	91
Costa Rica	0.78	2.34	8	8	8	8
Honduras	0.1	0.3	8	8	8	8
Japan	0	0	8	8	8	8
Mexico	0.74	2.22	8	8	8	8
New Zealand	16.36	49.08	0	45	45	45
Nicaragua	1.91	5.73	8	8	8	8
Uruguay	18.42	55.26	0	50	50	50
<b>Total</b>	<b>100</b>	<b>300</b>	<b>40</b>	<b>304</b>	<b>304</b>	<b>304</b>

**Table 38**  
**Number of Samples/Product Class - Beef, Processed**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>BEEF, PROCESSED/CHC/COP</b>	<b>PERCENT PRODUCT (P<sub>CC</sub>)</b>	<b>UNADJUSTED NUMBER OF SAMPLES (U) = 90*[(P<sub>CC</sub>)/100]</b>	<b>ADJUSTMENT #1 (8 MINIMUM/COUNTRY)</b>	<b>INITIAL ADJ.#</b>	<b>ADJUST. # 2</b>	<b>FINAL NO OF SAMPLES</b>
Argentina	29.14	27	0	27	26	26
Australia	1.27	1.143	0	0	0	0
Brazil	53.27	47.943	0	50	46	49
Canada	5.76	5.184	0	0	1	0
Mexico	2.99	2.691	0	0	0	0
New Zealand	2.75	2.475	0	0	0	0
Uruguay	4.82	4.338	0	0	0	0
<b>Total</b>	<b>100</b>	<b>63.774</b>	<b>0</b>	<b>77</b>	<b>74</b>	<b>75</b>

**Table 39**  
**Number of Samples/Product Class - Pork, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>PORK, FRESH/CHC/COP</b>	<b>PERCENT PRODUCT (P<sub>C/C</sub>)</b>	<b>UNADJUSTED NUMBER OF SAMPLES (U<sub>C/S</sub>) =230*[(P<sub>C/C</sub>)/100]</b>	<b>ADJUSTMENT #1 (8 MINIMUM/COUNTRY)</b>	<b>INITIAL ADJ.#</b>	<b>ADJUST. # 2</b>	<b>FINAL NO OF SAMPLES</b>
Australia	0.02	0.046	1	8	8	8
Canada	88	202.4	202	202	152	152
Denmark	9.19	21.137	21	21	15	15
Finland	0.4	0.92	1	8	8	8
Ireland	0.59	1.357	1	8	8	8
Mexico	0.27	0.621	1	8	8	8
Netherlands	0.55	1.265	1	8	8	8
New Zealand	0.02	0.046	1	8	8	8
Sweden	0.14	0.322	1	8	8	8
United Kingdom	0.25	0.575	1	8	8	8
<b>Total</b>	<b>99.43</b>	<b>230</b>	<b>231</b>	<b>287</b>	<b>231</b>	<b>231</b>

**Table 40**  
**Number of Samples /Product Class - Lamb/Mutton, Fresh**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>LAMB/MUTTON, FRESH/CHC/COP</b>	<b>PERCENT PRODUCT (P<sub>C/C</sub>)</b>	<b>UNADJUSTED NUMBER OF SAMPLES (U<sub>C/S</sub>) =90*[(P<sub>C/C</sub>)/100]</b>	<b>ADJUSTMENT #1 (8 MINIMUM/COUNTRY)</b>	<b>INITIAL ADJ.#</b>	<b>ADJUST. # 2</b>	<b>FINAL NO OF SAMPLES</b>
Australia	76.32	68.688	69	69	51	51
Canada	0.22	0.198	0	8	8	8
Iceland	0.11	0.099	0	8	8	8
Mexico	0.01	0.009	0	8	8	8
New Zealand	23.32	20.988	21	21	15	15
<b>Total</b>	<b>99.98</b>	<b>89.982</b>	<b>90</b>	<b>114</b>	<b>90</b>	<b>90</b>

**Table 41**  
**Number of Samples/Product Class - Chicken, Processed**  
**2007 FSIS NRP, Import Monitoring Plan**

<b>CHICKEN, PROCESSED/CHC/COP</b>	<b>PERCENT PRODUCT (P<sub>C/C</sub>)</b>	<b>UNADJUSTED NUMBER OF SAMPLES (U)= 90*[(P<sub>C/C</sub>)/100]</b>	<b>ADJUSTMENT #1 (8 MINIMUM/COUNTRY)</b>	<b>INITIAL ADJ.#</b>	<b>ADJUST.# 2</b>	<b>FINAL NO OF SAMPLES</b>
Australia	76.32	68.688	69	69	51	51
Canada	0.22	0.198	0	8	8	8
Iceland	0.11	0.099	0	8	8	8
Mexico	0.01	0.009	0	8	8	8
New Zealand	23.32	20.988	21	21	15	15
<b>Total</b>	<b>99.98</b>	<b>89.982</b>	<b>90</b>	<b>114</b>	<b>90</b>	<b>90</b>

# **Scheduled Sampling Plans for Environmental and Processing Contaminants**



## 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 Surveillance Advisory Team as meriting inclusion in the NRP. FSIS will conduct an exploratory assessment of the heavy metals, lead and cadmium in the production class, "Mature Chickens." An exploratory assessment sampling for lead and cadmium began in 2003 (October through December; heifers and dairy cows) and continued through 2004 (boars and stags, dairy cows, heifers, and mature chickens), 2005 for steers, 2006 for mature chickens and 2007 for mature turkeys. Sampling for 2007 is summarized in Table 42.

No processing contaminants have been designated for analysis in year 2007.

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 42**  
**2007 FSIS NRP Domestic Specifically Designed Survey**  
**Number of Samples/Product Class for Lead and Cadmium**

<b>Production Class</b>	<b>Compound</b>	<b>Number of Samples</b>
Mature Turkeys	Lead	300
Mature Turkeys	Cadmium	300
<b>Total</b>		<b>600</b>

# **Sampling Plan for Exploratory Assessments**

## Bob Veal Antibiotic Retained (BOVAR)

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

**Table 43**  
2007 FSIS NRP Exploratory Domestic Assessments for Bob Veal Antibiotic Retained (BOVAR)

<i>Compound or Compound Class</i>	<i>Production Class</i>	<i>Number of Samples</i>
Antibiotics	Bob veal calves	312
<b>Total</b>	<b>Total Samples</b>	<b>312</b>

# **Summary of Domestic and Import Sampling Plans**

## **Domestic Sampling Plan**

The number of scheduled samples for veterinary drugs, environmental contaminants and pesticides in all production classes is listed in *Table 44, Domestic Sampling Plan: Summary I, 2007 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 45, Detailed Sampling Plan: Summary II, 2007 FSIS NRP, Domestic Sampling and Exploratory Assessments*.

## **Import Sampling Plan**

The final detailed import plan sample numbers for all compounds (veterinary drugs, pesticides and unavoidable contaminants), in all production classes and all countries, are listed in *Table 46, Summary, 2007 FSIS NRP, Import Monitoring Plan*. A summary of the total number of samples per compound per production class is presented in *Table 47, Number of Compounds/Product Class, 2007 FSIS NRP, Import Monitoring Plan*. In *Table 48, Number of Samples/Country/Product Class, 2007 FSIS NRP, Import Monitoring Plan*, the number of samples per country per production class is listed.

A summary of all sampling plans (domestic and import) is provided in *Table 49, Combined Summary, 2007 FSIS NRP, Domestic and Import Sampling Plans and Exploratory Assessment*.

**Table 44**  
**Domestic Sampling Plan: Summary I**  
**2007 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

<b>Analysis</b>	<b>Lab</b>	<b>Production Class</b>	<b>Number of Samples</b>	<b>Plan Type</b>
Antibiotics by Bioassay	ML	Market hogs		Not Scheduled
Antibiotics by Bioassay	ML	Dairy cows	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Formula-fed veal	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Young chickens	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Steers		Not Scheduled
Antibiotics by Bioassay	ML	Heifers	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Young turkeys	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Bob veal		Scheduled Sampling
Antibiotics by Bioassay	ML	Horses	90	Scheduled Sampling
Antibiotics by Bioassay	ML	Beef cows	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Sows	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Lambs		Not Scheduled
Antibiotics by Bioassay	ML	Roaster pigs	230	Scheduled Sampling
Antibiotics by Bioassay	ML	Bison		Not Scheduled
Antibiotics by Bioassay	ML	Ratites		Not Scheduled
Antibiotics by Bioassay	ML	Rabbits		Not Scheduled
Antibiotics by Bioassay	ML	Bulls		Not Scheduled
Antibiotics by Bioassay	ML	Mature chickens		Not Scheduled
Antibiotics by Bioassay	ML	Ducks		Not Scheduled
Antibiotics by Bioassay	ML	Boars/stags	300	Scheduled Sampling
Antibiotics by Bioassay	ML	Mature turkeys		Not Scheduled
Antibiotics by Bioassay	ML	Goats		Not Scheduled
Antibiotics by Bioassay	ML	Heavy calves	230	Scheduled Sampling
Antibiotics by Bioassay	ML	Sheep		Not Scheduled
Antibiotics by Bioassay	ML	Non-formula-fed veal	230	Scheduled Sampling
Antibiotics by Bioassay	ML	Geese		Not Scheduled
Antibiotics by Bioassay	ML	Squab		Not Scheduled
<b>Total Antibiotics by Bioassay</b>			<b>3,180</b>	

**Table 44 - continued**  
**Domestic Sampling Plan: Summary I**  
**2007 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

<b>Analysis</b>	<b>Lab</b>	<b>Production Class</b>	<b>Number of Samples</b>	<b>Plan Type</b>
Avermectins	EL	Steers	300	Scheduled Sampling
Avermectins	EL	Horses	90	Scheduled Sampling
Avermectins	EL	Market hogs		Not Scheduled
Avermectins	EL	Heifers	300	Scheduled Sampling
Avermectins	EL	Dairy cows	300	Scheduled Sampling
Avermectins	EL	Beef cows		Not Scheduled
Avermectins	EL	Bulls	300	Scheduled Sampling
Avermectins	EL	Lambs	230	Scheduled Sampling
Avermectins	EL	Goats	230	Scheduled Sampling
Avermectins	EL	Sows		Not Scheduled
Avermectins	EL	Formula-fed veal		Not Scheduled
Avermectins	EL	Bob veal		Not Scheduled
Avermectins	EL	Heavy calves	300	Scheduled Sampling
Avermectins	EL	Roaster pigs		Not Scheduled
Avermectins	EL	Bison		Not Scheduled
Avermectins	EL	Ratites		Not Scheduled
Avermectins	EL	non-Formula-fed veal	230	Scheduled Sampling
Avermectins	EL	Boars/stags		Not Scheduled
Avermectins	EL	Sheep	230	Scheduled Sampling
<b>Total Avermectins</b>			<b>2,510</b>	
Arsenicals	EL	Young chickens	300	Scheduled Sampling
Arsenicals	EL	Young turkeys		Not Scheduled
Arsenicals	EL	Egg products		Not Scheduled
Arsenicals	EL	Market hogs	300	Scheduled Sampling
Arsenicals	EL	Beef cows		Not Scheduled
Arsenicals	EL	Goats		Not Scheduled
Arsenicals	EL	Sows		Not Scheduled
Arsenicals	EL	Mature chickens		Not Scheduled
Arsenicals	EL	Ducks		Not Scheduled
Arsenicals	EL	Roaster pigs		Not Scheduled
Arsenicals	EL	Boars/stags		Not Scheduled
Arsenicals	EL	Mature turkeys		Not Scheduled
Arsenicals	EL	Geese		Not Scheduled
<b>Total Arsenicals</b>	<b>EL</b>		<b>600</b>	

**Table 44 - continued**  
**Domestic Sampling Plan: Summary I**  
**2007 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

<b>Analysis</b>	<b>Lab</b>	<b>Production Class</b>	<b>Number of Samples</b>	<b>Plan Type</b>
Sulfonamides	EL	Market hogs	300	Scheduled Sampling
Sulfonamides	EL	Steers	300	Scheduled Sampling
Sulfonamides	EL	Egg products		Not Scheduled
Sulfonamides	EL	Dairy cows	300	Scheduled Sampling
Sulfonamides	EL	Beef cows	300	Scheduled Sampling
Sulfonamides	EL	Sows		Not Scheduled
Sulfonamides	EL	Bulls	300	Scheduled Sampling
Sulfonamides	EL	Young chickens	300	Scheduled Sampling
Sulfonamides	EL	Lambs	300	Not Scheduled
Sulfonamides	EL	Boars/stags		Not Scheduled
Sulfonamides	EL	Mature turkeys	300	Scheduled Sampling
Sulfonamides	EL	Bob veal	300	Scheduled Sampling
Sulfonamides	EL	Roaster pigs	300	Scheduled Sampling
Sulfonamides	EL	Sheep	300	Scheduled Sampling
Sulfonamides	EL	Goats	300	Scheduled Sampling
Sulfonamides	EL	Heavy calves	300	Scheduled Sampling
Sulfonamides	EL	Young turkeys	300	Scheduled Sampling
Sulfonamides	EL	Non-formula-fed veal	300	Scheduled Sampling
<b>Total Sulfonamides</b>			<b>4500</b>	
Carbadox	WL	Market hogs	300	Scheduled Sampling
Carbadox	WL	Roaster pigs	300	Scheduled Sampling
<b>Total Carbadox</b>			<b>600</b>	



**Table 44 - continued**  
**Domestic Sampling Plan: Summary I**  
**2007 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

<b>Analysis</b>	<b>Lab</b>	<b>Production Class</b>	<b>Number of Samples</b>	<b>Plan Type</b>
CHCs/COPs	WL	Horses	90	Scheduled Sampling
CHCs/COPs	WL	Young chickens		Not Scheduled
CHCs/COPs	WL	Market hogs		Not Scheduled
CHCs/COPs	WL	Steers		Not Scheduled
CHCs/COPs	WL	Heifers	300	Scheduled Sampling
CHCs/COPs	WL	Young turkeys		Not Scheduled
CHCs/COPs	WL	Egg products		Not Scheduled
CHCs/COPs	WL	Dairy cows	300	Scheduled Sampling
CHCs/COPs	WL	Beef cows	300	Scheduled Sampling
CHCs/COPs	WL	Sows	300	Scheduled Sampling
CHCs/COPs	WL	Bulls		Not Scheduled
CHCs/COPs	WL	Mature chickens		Not Scheduled
CHCs/COPs	WL	Roaster pigs		Not Scheduled
CHCs/COPs	WL	Lambs	230	Scheduled Sampling
CHCs/COPs	WL	Formula-fed veal		Not Scheduled
CHCs/COPs	WL	Ducks		Not Scheduled
CHCs/COPs	WL	Boars/stags	300	Scheduled Sampling
CHCs/COPs	WL	Mature turkeys		Not Scheduled
CHCs/COPs	WL	Goats	230	Scheduled Sampling
CHCs/COPs	WL	Bob veal		Not Scheduled
CHCs/COPs	WL	Heavy calves		Not Scheduled
CHCs/COPs	WL	Bison		Not Scheduled
CHCs/COPs	WL	Sheep	230	Scheduled Sampling
<b>Total CHCs/COPs</b>			<b>2280</b>	

**Table 44 - continued**  
**Domestic Sampling Plan: Summary I**  
**2007 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

<b>Analysis</b>	<b>Lab</b>	<b>Production Class</b>	<b>Number of Samples</b>	<b>Plan Type</b>
Chloramphenicol	EL	Dairy cows	300	Scheduled Sampling
Chloramphenicol	EL	Formula-fed veal	300	Scheduled Sampling
Chloramphenicol	EL	Young Chickens	300	Scheduled Sampling
Chloramphenicol	EL	Young Turkeys	300	Scheduled Sampling
<b>Total Chloramphenicol</b>			<b>1200</b>	
<i>beta</i> -Agonists <sup>1</sup>	WL	Heifers	300	Scheduled Sampling
<i>beta</i> -Agonists	WL	Formula-fed veal	300	Scheduled Sampling
<i>beta</i> -Agonists	WL	Non-Formula-fed veal	300	Scheduled Sampling
<i>beta</i> -Agonists	WL	Bob veal	300	Scheduled Sampling
<b>Total <i>beta</i>-Agonists<sup>1</sup></b>			<b>1200</b>	
Florfenicol	EL	Dairy cows	300	Scheduled Sampling
Florfenicol	EL	Formula-fed veal	300	Scheduled Sampling
Florfenicol	EL	non-Formula-fed veal	230	Scheduled Sampling
<b>Total Florfenicol</b>			<b>830</b>	
<b>Total Lead and Cadmium</b>	<b>EL</b>	<b>Mature turkeys</b>	<b>300</b>	<b>Exploratory Assessment</b>
<b>Total Melengesterol Acetate (MGA)</b>	<b>WL</b>	<b>Heifers</b>	<b>300</b>	<b>Scheduled Sampling</b>
Nitrofurans	WL	Market hogs	300	Scheduled Sampling
Nitrofurans	WL	Sows	300	Scheduled Sampling
Nitrofurans	WL	Roaster Pigs	300	Scheduled Sampling
<b>Total Nitrofurans</b>			<b>900</b>	
<b>Total Nitroimidazoles</b>	<b>EL</b>	<b>Young chickens</b>	<b>300</b>	
<b>Total Thyreostats</b>	<b>EL</b>	<b>Formula fed veal</b>	<b>300</b>	<b>Scheduled Sampling</b>
<b>Total Trenbolone</b>	<b>ML</b>	<b>Formula-fed veal</b>	<b>300</b>	<b>Scheduled Sampling</b>
<b>Total Zeranol</b>	<b>ML</b>	<b>Formula-fed veal</b>	<b>300</b>	<b>Scheduled Sampling</b>

**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

FDA = Food and Drug Administration, National Center for Toxicological Research, Jefferson, AR

MGA = Melengesterol acetate

FAST samples will be screened for Phenylbutazone and flunixin as part of enforcement program

**Table 45**  
**Domestic Sampling Plan: Summary II**  
**2007 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

<b>Production Class</b>	<b>Antibiotics</b>	<b>Arsenicals</b>	<b>Avermectins</b>	<b><math>\beta</math>-Agonists</b>	<b>Carbadox</b>	<b>CHCs/COPs</b>
Bulls			300			
Beef cows	300					300
Dairy cows	300		300			300
Heifers	300		300	300		300
Steers			300			
Bob veal						
Formula-fed veal	300			300		
Non-Formula-fed veal	230		230	300		
Heavy calves	230		300			
<b>Subtotal, Cattle</b>	<b>1660</b>	<b>0</b>	<b>1,730</b>	<b>900</b>	<b>0</b>	<b>900</b>
Market hogs		300		300	300	
Roaster pigs	230				300	
Boars/Stags	300					300
Sows	300					300
<b>Subtotal, Swine</b>	<b>830</b>	<b>300</b>	<b>0</b>	<b>300</b>	<b>600</b>	<b>600</b>
Sheep			230			230
Lambs			230			230
Goats			230			230
<b>Subtotal, Ovine</b>	<b>0</b>	<b>0</b>	<b>690</b>	<b>0</b>	<b>0</b>	<b>690</b>
Horses	90		90			90
Bison						
<b>Subtotal, Other Livestock</b>	<b>90</b>	<b>0</b>	<b>90</b>	<b>0</b>	<b>0</b>	<b>90</b>
<b>Total, All Livestock</b>	<b>2,580</b>	<b>300</b>	<b>2,510</b>	<b>900</b>	<b>600</b>	<b>2280</b>
Young chickens	300	300				
Mature chickens						
Young turkeys	300					
Mature turkeys						
Ducks						
Geese						
Ratites						
Squab						
<b>Subtotal, Poultry</b>	<b>600</b>	<b>300</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Rabbits						
Egg products						
<b>Total, All Production Classes</b>	<b>3,180</b>	<b>600</b>	<b>2,510</b>	<b>1,200</b>	<b>600</b>	<b>2,280</b>

**Table 45 - continued**  
**Domestic Sampling Plan: Summary II**  
**2007 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

<b>Production Class</b>	<b>Chloramphenicol</b>	<b>Florfenicol</b>	<b>Flunixin</b>	<b>Lead and Cadmium</b>
Bulls				
Beef cows				
Dairy cows	300	300		
Heifers				
Steers				
Bob veal				
Formula-fed veal	300	300		
non-Formula-fed veal		230		
Heavy calves				
<b>Subtotal, Cattle</b>	<b>600</b>	<b>830</b>	<b>0</b>	<b>0</b>
Market hogs				
Roaster pigs				
Boars/Stags				
Sows				
<b>Subtotal, Swine</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Goats				
Sheep				
Lambs				
<b>Subtotal, Ovine</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Horses				
Bison				
<b>Subtotal, Other Livestock</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total, All Livestock</b>	<b>600</b>	<b>830</b>	<b>0</b>	<b>0</b>
Young chickens	300			
Mature chickens				
Young turkeys	300			
Mature turkeys				300
Ducks				
Geese				
Ratites				
Squab				
<b>Subtotal, Poultry</b>	<b>600</b>	<b>0</b>	<b>0</b>	<b>300</b>
Rabbits				
Egg products				
<b>Total, All Production Classes</b>	<b>1,200</b>	<b>830</b>	<b>0</b>	<b>300</b>

**Table 45 - continued**  
**Domestic Sampling Plan: Summary II**  
**2007 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

<b>Production Class</b>	Melengesterol acetate (MGA)	Nitrofurans	Nitroimidazoles	Phenylbutazone (ELISA)
Bulls				
Beef cows				
Dairy cows				
Heifers	300			
Steers				
Bob veal				
Formula-fed veal				
non-Formula-fed veal				
Heavy calves				
<b>Subtotal, Cattle</b>	<b>300</b>	<b>0</b>	<b>0</b>	<b>0</b>
Market hogs		300		
Roaster pigs		300		
Boars/Stags				
Sows		300		
<b>Subtotal, Swine</b>	<b>0</b>	<b>900</b>	<b>0</b>	<b>0</b>
Sheep				
Lambs				
Goats				
<b>Subtotal, Ovine</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Horses				
Bison				
<b>Subtotal, Other Livestock</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total, All Livestock</b>	<b>300</b>	<b>900</b>	<b>0</b>	<b>0</b>
Young chickens				
Mature chickens				
Young turkeys			300	
Mature turkeys				
Ducks				
Geese				
Ratites				
Squab				
<b>Subtotal, Poultry</b>	<b>0</b>	<b>0</b>	<b>300</b>	<b>0</b>
Rabbits				
Egg products				
<b>Total, All Production Classes</b>	<b>300</b>	<b>900</b>	<b>300</b>	<b>0</b>

**Table 45 - continued**  
**Domestic Sampling Plan: Summary II**  
**2007 FSIS NRP, Domestic Scheduled Sampling and Exploratory Assessments**

<b>Production Class</b>	<b>Sulfonamides</b>	<b>Thyreostats</b>	<b>Trenbolone</b>	<b>Zeranol</b>
Bulls	300			
Beef cows	300			
Dairy cows	300			
Heifers				
Steers	300			
Bob veal	300			
Formula-fed veal	230	300	230	230
non-Formula-fed veal	300			
Heavy calves	300			
<b>Subtotal, Cattle</b>	<b>2,330</b>	<b>300</b>	<b>230</b>	<b>230</b>
Market hogs	300			
Roaster pigs	300			
Boars/Stags				
Sows				
<b>Subtotal, Swine</b>	<b>600</b>	<b>0</b>	<b>0</b>	<b>0</b>
Sheep	300			
Lambs	300			
Goats	300			
<b>Subtotal, Ovine</b>	<b>900</b>	<b>0</b>	<b>0</b>	<b>0</b>
Horses				
Bison				
<b>Subtotal, Other Livestock</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total, All Livestock</b>	<b>3,830</b>	<b>300</b>	<b>230</b>	<b>230</b>
Young chickens	300			
Mature chickens				
Young turkeys	300			
Mature turkeys	300			
Ducks				
Geese				
Ratites				
Squab				
<b>Subtotal, Poultry</b>	<b>900</b>	<b>0</b>	<b>0</b>	<b>0</b>
Rabbits				
Egg products				
<b>Total, All Production Classes</b>	<b>4,730</b>	<b>300</b>	<b>230</b>	<b>230</b>

**Table 46**  
**Import Sampling Plan Summary**  
**2007 FSIS NRP, Import Sampling Plan**

<b>COUNTRY</b>	<b>PRODUCT</b>	<b>COMPOUND</b>	<b>NUMBER OF SAMPLES</b>
Australia	Beef Fresh	Antibiotics	78
Canada	Beef Fresh	Antibiotics	91
Costa Rica	Beef Fresh	Antibiotics	8
Honduras	Beef Fresh	Antibiotics	8
Japan	Beef Fresh	Antibiotics	8
Mexico	Beef Fresh	Antibiotics	8
New Zealand	Beef Fresh	Antibiotics	45
Nicaragua	Beef Fresh	Antibiotics	8
Uruguay	Beef Fresh	Antibiotics	50
Australia	Beef Fresh	Avermectins	78
Canada	Beef Fresh	Avermectins	91
Costa Rica	Beef Fresh	Avermectins	8
Honduras	Beef Fresh	Avermectins	8
Japan	Beef Fresh	Avermectins	8
Mexico	Beef Fresh	Avermectins	8
New Zealand	Beef Fresh	Avermectins	45
Nicaragua	Beef Fresh	Avermectins	8
Uruguay	Beef Fresh	Avermectins	50
Australia	Beef Fresh	CHCs/COPs	78
Canada	Beef Fresh	CHCs/COPs	91
New Zealand	Beef Fresh	CHCs/COPs	45
Australia	Beef Fresh	Chloramphenicol	10
Canada	Beef Fresh	Chloramphenicol	12
Costa Rica	Beef Fresh	Chloramphenicol	8
Honduras	Beef Fresh	Chloramphenicol	8
Japan	Beef Fresh	Chloramphenicol	8
Mexico	Beef Fresh	Chloramphenicol	8
New Zealand	Beef Fresh	Chloramphenicol	8
Nicaragua	Beef Fresh	Chloramphenicol	8
Uruguay	Beef Fresh	Chloramphenicol	8
Australia	Beef Fresh	Florfenicol	5
Canada	Beef Fresh	Florfenicol	5
<b>COUNTRY</b>	<b>PRODUCT</b>	<b>COMPOUND</b>	<b>NUMBER OF SAMPLES</b>
Costa Rica	Beef Fresh	Florfenicol	5
Honduras	Beef Fresh	Florfenicol	5
Japan	Beef Fresh	Florfenicol	5
Mexico	Beef Fresh	Florfenicol	5

**Table 46 - Continued**  
**Import Sampling Plan Summary**  
**2007 FSIS NRP, Import Sampling Plan**

<b>COUNTRY</b>	<b>PRODUCT</b>	<b>COMPOUND</b>	<b>NUMBER OF SAMPLES</b>
New Zealand	Beef Fresh	Florfenicol	5
Nicaragua	Beef Fresh	Florfenicol	5
Uruguay	Beef Fresh	Florfenicol	5
Australia	Beef Fresh	Flunixin	10
Canada	Beef Fresh	Flunixin	12
Costa Rica	Beef Fresh	Flunixin	8
Honduras	Beef Fresh	Flunixin	8
Japan	Beef Fresh	Flunixin	8
Mexico	Beef Fresh	Flunixin	8
New Zealand	Beef Fresh	Flunixin	8
Nicaragua	Beef Fresh	Flunixin	8
Uruguay	Beef Fresh	Flunixin	8
Australia	Beef Fresh	Sulfonamides	78
Canada	Beef Fresh	Sulfonamides	91
Costa Rica	Beef Fresh	Sulfonamides	8
Honduras	Beef Fresh	Sulfonamides	8
Japan	Beef Fresh	Sulfonamides	8
Mexico	Beef Fresh	Sulfonamides	8
New Zealand	Beef Fresh	Sulfonamides	45
Nicaragua	Beef Fresh	Sulfonamides	8
Uruguay	Beef Fresh	Sulfonamides	50
Argentina	Beef Processed	Avermectins	26
Brazil	Beef Processed	Avermectins	49
Argentina	Beef Processed	Sulfonamides	26
Brazil	Beef Processed	Sulfonamides	49
Costa Rica	Beef, Fresh	CHCs/COPs	8
Honduras	Beef, Fresh	CHCs/COPs	8
Japan	Beef, Fresh	CHCs/COPs	8
Mexico	Beef, Fresh	CHCs/COPs	8
Nicaragua	Beef, Fresh	CHCs/COPs	8
Uruguay	Beef, Fresh	CHCs/COPs	50
Argentina	Beef, Processed	CHCs/COPs	26
Brazil	Beef, Processed	CHCs/COPs	49
Canada	Chicken Fresh	Antibiotics	8
Canada	Chicken Fresh	Arsenicals	8
Canada	Chicken Fresh	CHCs/COPs	8
Canada	Chicken Fresh	Chloramphenicol	8
Canada	Chicken Fresh	Nitroimidazole	8



**Table 46 - Continued**  
**Import Sampling Plan Summary**  
**2007 FSIS NRP, Import Sampling Plan**

<b>COUNTRY</b>	<b>PRODUCT</b>	<b>COMPOUND</b>	<b>NUMBER OF SAMPLES</b>
Israel	Chicken Processed	Arsenicals	8
Mexico	Chicken Processed	Arsenicals	8
Israel	Chicken Processed	CHCs/COPs	8
Mexico	Chicken Processed	CHCs/COPs	8
Australia	Goat Fresh	Avermectins	8
Mexico	Goat Fresh	Avermectins	8
New Zealand	Goat Fresh	Avermectins	8
Australia	Goat Fresh	CHCs/COPs	8
Mexico	Goat Fresh	CHCs/COPs	8
New Zealand	Goat Fresh	CHCs/COPs	8
Australia	Mutton/Lamb Fresh	Avermectins	51
Canada	Mutton/Lamb Fresh	Avermectins	8
Australia	Mutton/Lamb Fresh	CHCs/COPs	51
Canada	Mutton/Lamb Fresh	CHCs/COPs	8
Iceland	Mutton/Lamb Fresh	CHCs/COPs	8
Mexico	Mutton/Lamb Fresh	CHCs/COPs	8
New Zealand	Mutton/Lamb Fresh	CHCs/COPs	15
France	Mutton/Lamb Processed	CHCs/COPs	8
Uruguay	Mutton/Lamb Processed	CHCs/COPs	8
Iceland	Mutton/Lamb, Fresh	Avermectins	8
Mexico	Mutton/Lamb, Fresh	Avermectins	8
New Zealand	Mutton/Lamb, Fresh	Avermectins	15
Australia	Pork Fresh	Antibiotics	8
Canada	Pork Fresh	Antibiotics	152
Denmark	Pork Fresh	Antibiotics	15
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
Sweden	Pork Fresh	Antibiotics	8
United Kingdom	Pork Fresh	Antibiotics	8
Australia	Pork Fresh	Arsenicals	8
Canada	Pork Fresh	Arsenicals	25
Denmark	Pork Fresh	Arsenicals	8
Finland	Pork Fresh	Arsenicals	8
Ireland	Pork Fresh	Arsenicals	8
Mexico	Pork Fresh	Arsenicals	8

**Table 46 - Continued**  
**Import Sampling Plan Summary**  
**2007 FSIS NRP, Import Sampling Plan**

<b>COUNTRY</b>	<b>PRODUCT</b>	<b>COMPOUND</b>	<b>NUMBER OF SAMPLES</b>
Netherlands	Pork Fresh	Arsenicals	8
New Zealand	Pork Fresh	Arsenicals	8
Sweden	Pork Fresh	Arsenicals	8
United Kingdom	Pork Fresh	Arsenicals	8
Australia	Pork Fresh	CHCs/COPs	8
Canada	Pork Fresh	CHCs/COPs	152
Denmark	Pork Fresh	CHCs/COPs	15
Finland	Pork Fresh	CHCs/COPs	8
Ireland	Pork Fresh	CHCs/COPs	8
Mexico	Pork Fresh	CHCs/COPs	8
Netherlands	Pork Fresh	CHCs/COPs	8
New Zealand	Pork Fresh	CHCs/COPs	8
Sweden	Pork Fresh	CHCs/COPs	8
United Kingdom	Pork Fresh	CHCs/COPs	8
Australia	Pork fresh	$\beta$ -agonists	3
Canada	Pork fresh	$\beta$ -agonists	3
Denmark	Pork fresh	$\beta$ -agonists	3
Finland	Pork fresh	$\beta$ -agonists	3
Ireland	Pork fresh	$\beta$ -agonists	3
Mexico	Pork fresh	$\beta$ -agonists	3
Netherlands	Pork fresh	$\beta$ -agonists	3
New Zealand	Pork fresh	$\beta$ -agonists	3
Sweden	Pork fresh	$\beta$ -agonists	3
United Kingdom	Pork fresh	$\beta$ -agonists	3
Australia	Pork Fresh	Sulfonamides	8
Canada	Pork Fresh	Sulfonamides	152
Denmark	Pork Fresh	Sulfonamides	15
Finland	Pork Fresh	Sulfonamides	8
Ireland	Pork Fresh	Sulfonamides	8
Mexico	Pork Fresh	Sulfonamides	8
Netherlands	Pork Fresh	Sulfonamides	8
New Zealand	Pork Fresh	Sulfonamides	8
Sweden	Pork Fresh	Sulfonamides	8
Canada	Pork Fresh	Arsenicals	25
Denmark	Pork Fresh	Arsenicals	8
Finland	Pork Fresh	Arsenicals	8
Ireland	Pork Fresh	Arsenicals	8
Mexico	Pork Fresh	Arsenicals	8

**Table 46 - Continued**  
**Import Sampling Plan Summary**  
**2007 FSIS NRP, Import Sampling Plan**

<b>COUNTRY</b>	<b>PRODUCT</b>	<b>COMPOUND</b>	<b>NUMBER OF SAMPLES</b>
Netherlands	Pork Fresh	Arsenicals	8
New Zealand	Pork Fresh	Arsenicals	8
Sweden	Pork Fresh	Arsenicals	8
United Kingdom	Pork Fresh	Arsenicals	8
Australia	Pork Fresh	CHCs/COPs	8
Canada	Pork Fresh	CHCs/COPs	152
Denmark	Pork Fresh	CHCs/COPs	15
Finland	Pork Fresh	CHCs/COPs	8
Ireland	Pork Fresh	CHCs/COPs	8
Mexico	Pork Fresh	CHCs/COPs	8
Netherlands	Pork Fresh	CHCs/COPs	8
New Zealand	Pork Fresh	CHCs/COPs	8
Sweden	Pork Fresh	CHCs/COPs	8
United Kingdom	Pork Fresh	CHCs/COPs	8
Australia	Pork fresh	B-agonists	3
Canada	Pork fresh	B-agonists	3
Denmark	Pork fresh	B-agonists	3
Finland	Pork fresh	B-agonists	3
Ireland	Pork fresh	B-agonists	3
Mexico	Pork fresh	B-agonists	3
Netherlands	Pork fresh	B-agonists	3
New Zealand	Pork fresh	B-agonists	3
Sweden	Pork fresh	B-agonists	3
United Kingdom	Pork fresh	B-agonists	3
Australia	Pork Fresh	Sulfonamides	8
Canada	Pork Fresh	Sulfonamides	152
Denmark	Pork Fresh	Sulfonamides	15
Finland	Pork Fresh	Sulfonamides	8
Ireland	Pork Fresh	Sulfonamides	8
Mexico	Pork Fresh	Sulfonamides	8
Netherlands	Pork Fresh	Sulfonamides	8
New Zealand	Pork Fresh	Sulfonamides	8
Sweden	Pork Fresh	Sulfonamides	8
United Kingdom	Pork Fresh	Sulfonamides	8
Argentina	Pork Processed	CHCs/COPs	8
Brazil	Pork Processed	CHCs/COPs	8
Belgium	Pork Processed	CHCs/COPs	8
Croatia	Pork Processed	CHCs/COPs	8

**Table 46 - Continued**  
**Import Sampling Plan Summary**  
**2007 FSIS NRP, Import Sampling Plan**

<b>COUNTRY</b>	<b>PRODUCT</b>	<b>COMPOUND</b>	<b>NUMBER OF SAMPLES</b>
France	Pork Processed	CHCs/COPs	8
Germany	Pork Processed	CHCs/COPs	8
Hungary	Pork Processed	CHCs/COPs	8
Italy	Pork Processed	CHCs/COPs	8
Poland	Pork Processed	CHCs/COPs	8
Spain	Pork Processed	CHCs/COPs	8
Argentina	Pork Processed	Sulfonamides	8
Belgium	Pork Processed	Sulfonamides	8
Brazil	Pork Processed	Sulfonamides	8
Croatia	Pork Processed	Sulfonamides	8
Denmark	Pork Processed	Sulfonamides	0
France	Pork Processed	Sulfonamides	8
Germany	Pork Processed	Sulfonamides	8
Hungary	Pork Processed	Sulfonamides	8
Italy	Pork Processed	Sulfonamides	8
Poland	Pork Processed	Sulfonamides	8
Spain	Pork Processed	Sulfonamides	8
Canada	Turkey Fresh	Antibiotics	8
Canada	Turkey Fresh	Arsenicals	8
Canada	Turkey Fresh	CHCs/COPs	8
Canada	Turkey Fresh	Chloramphenicol	8
Canada	Turkey Fresh	Sulfonamides	8
Israel	Turkey Processed	Arsenicals	8
Israel	Turkey Processed	Sulfonamides	8
Mexico	Turkey, Fresh	Antibiotics	8
Mexico	Turkey, Fresh	Arsenicals	8
Mexico	Turkey, Fresh	Chloramphenicol	8
Mexico	Turkey, Fresh	Sulfonamides	8
Mexico	Turkey, Fresh	CHCs/COPs	8
France	Turkey, processed	CHCs/COPs	8
Israel	Turkey, processed	CHCs/COPs	8
Australia	Varied combination Processed	CHCs/COPs	8
France	Varied combination Processed	CHCs/COPs	8
Mexico	Varied combination Processed	CHCs/COPs	8
Canada	Varied combination, Fresh	Antibiotics	8
Canada	Varied Combination, Fresh	CHCs/COPs	8
Canada	Varied combination, Fresh	Sulfonamides	8
Australia	Varied combination, Processed	Sulfonamides	8

**Table 46 - Continued**  
**Import Sampling Plan Summary**  
**2007 FSIS NRP, Import Sampling Plan**

<b>COUNTRY</b>	<b>PRODUCT</b>	<b>COMPOUND</b>	<b>NUMBER OF SAMPLES</b>
Mexico	Varied combination, Processed	Sulfonamides	8
New Zealand	Varied combination, Processed	Sulfonamides	8
Australia	Veal Fresh	Antibiotics	13
Canada	Veal Fresh	Antibiotics	38
New Zealand	Veal Fresh	Antibiotics	39
Australia	Veal fresh	Avermectins	13
Canada	Veal fresh	Avermectins	38
New Zealand	Veal fresh	Avermectins	39
Australia	Veal fresh	Chloramphenicol	13
Canada	Veal fresh	Chloramphenicol	38
New Zealand	Veal fresh	Chloramphenicol	39
Australia	Veal fresh	B-agonists	13
Canada	Veal fresh	B-agonists	38
New Zealand	Veal fresh	B-agonists	39
Australia	Veal fresh	Sulfonamides	13
Canada	Veal fresh	Sulfonamides	38
New Zealand	Veal fresh	Sulfonamides	39
Australia	Veal fresh	Thyreostats	13
Canada	Veal fresh	Thyreostats	38
New Zealand	Veal fresh	Thyreostats	39
Australia	Veal fresh	Zeranol	13
Canada	Veal fresh	Zeranol	38
New Zealand	Veal fresh	Zeranol	39
<b>Total</b>			3,752

**Table 47**  
**Import Sampling Plan: Number of Compound/Production Class Summary**  
**2007 FSIS NRP, Import Sampling Plan**

<b>PRODUCTION CLASS</b>	<b>AB</b>	<b>AVM</b>	<b>AS</b>	<b>β-A</b>	<b>CHMP</b>	<b>FLF</b>	<b>FLNX</b>	<b>NTM</b>	<b>SLF</b>	<b>THY</b>	<b>ZRNL</b>	<b>CHCs/ COPs</b>	<b>TOTAL</b>
Beef, fresh	304	304			78	45	78		304			304	1417
Beef, processed		75							75			75	225
Pork, fresh	231		97	30					231			231	820
Pork, processed									80			72	152
Veal, fresh	90	90		90	90				90	90	90		630
Veal, processed	0								0				0
Lamb/Mutton, fresh		90										90	180
Lamb/Mutton, processed		0										24	24
Goat, fresh		24										24	48
Turkey , fresh	16		16		16				16			8	72
Chicken, fresh	8		8		8			8				8	40
Chicken, processed			16									16	32
Turkey, processed			8						8			24	40
Varied combination, fresh	8								8			24	40
Varied combination, processed									24			8	32
<b>Total/country</b>	<b>657</b>	<b>583</b>	<b>145</b>	<b>120</b>	<b>192</b>	<b>45</b>	<b>78</b>	<b>8</b>	<b>836</b>	<b>90</b>	<b>90</b>	<b>908</b>	<b>3,752</b>

AB=Antibiotics; AS= Arsenic; AVM=Avermectins; β-A= β-agonist; CHMP=Chloramphenicol; FLF=Florofenicol; FLNX = Flunixin; RCT= Ractopamine; THY= Thyreostats; NTM= Nitroimidazoles; SLF=Sulfonamides; ZRNL= Zeranol; CHC/COP =Chlorinated hydrocarbons/Organophosphates

**Table 48**  
**Number of Samples/Country/Production Class-Summary**  
**2007 FSIS NRP, Import Sampling Plan**

Country	Beef, fresh	Beef, processed	Pork, fresh	Pork, processed	Veal, fresh	Veal, processed	Lamb/Mutton, fresh	Lamb/Mutton, processed	Goat, fresh	Turkey, fresh	Chicken, fresh	Chicken, processed	Turkey, processed	Varied combination, fresh	Varied combination, processed	Total
Argentina		78		16												94
Australia	337		35		91		102		16						16	597
Belgium				8												8
Brazil		147		16												163
Canada	393		484		266		16			40	40			24		1263
Costa Rica	53															53
Croatia				16												16
Denmark			56													56
Finland			35													35
France				16				8					8		8	40
Germany				16												16
Honduras	53															53
Hungary				16												16
Iceland							16									16
Ireland			35													35
Israel												16	24			40
Italy				16												16
Japan	53			0												53
Mexico	53		35	0			16	8	16	32		16	8		16	200
Netherlands			35	0												35
New Zealand	201		35		273		30		16						8	563
Nicaragua	53															53
Poland				16												16
Spain				16												16
Sweden			35													35
United Kingdom			35													35
Uruguay	221							8								229
<b>Total</b>	<b>1417</b>	<b>225</b>	<b>820</b>	<b>152</b>	<b>630</b>	<b>0</b>	<b>180</b>	<b>24</b>	<b>48</b>	<b>72</b>	<b>40</b>	<b>32</b>	<b>40</b>	<b>24</b>	<b>48</b>	<b>3752</b>

**Table 49**  
**Combined Summary**  
**2007 FSIS NRP Domestic and Import Scheduled Sampling, and Exploratory Assessments**

<i>Lab</i>	<i>Analysis</i>	<i>Number of Scheduled Domestic Samples</i>	<i>Number of Scheduled Imported Samples</i>	<i>Number of Scheduled Samples for Exploratory Assessments</i>	<i>Total Number of Samples</i>	<i>Notes</i>
ML	Antibiotics	3,180	657	312	3,769	300, 300, 300, 300, 230, 230, 230, 300, 300, 90, 300, 300 samples are scheduled for beef cows, dairy cows, heifers, formula-fed veal, non-formula-fed veal, heavy calves, roaster pigs, boars and stags, sows, equine, young chickens, and young turkeys <sup>1</sup> , respectively.
						<i>Import Scheduled Sampling:</i> Cattle, pigs, chicken, turkey and other fowl
EL	Arsenicals	600	145	300	745	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for market hogs and roaster pigs
						<i>Import Scheduled Sampling:</i> Samples are scheduled for Pork, turkey fresh, chicken fresh, turkey processed and chicken processed
EL	Avermectins	2,510	583		3093	<i>Domestic Scheduled Sampling:</i> 300, 300, 300, 300, 300, 230, 230, 230, 230, and 90 samples are scheduled for steers, heifers, dairy cows, bulls, heavy calves, non-formula-fed veal, sheep, lambs, goats, and equine, respectively.
						<i>Import Scheduled Sampling:</i> Samples are scheduled for fresh beef, processed beef, fresh veal, fresh lamb and mutton, and fresh goat
WL	$\beta$ -Agonists <sup>1</sup>	1200	120		1320	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for heifers, formula-fed veal, non-formula-fed veal, and market hogs. Conformation done by FDA.

<sup>1</sup>This method applicable to identification of B-agonists in bovine retinal tissue (except for zilpaterol); bovine, porcine, ovine and caprine liver; and bovine and porcine muscle at  $\geq 3$  ppb for clenbuterol, salbutamol, and cimaterol;  $\geq 6$  ppb for zilpaterol; and  $\geq 21$  ppb for ractopamine. Although method is validated for retina and eye balls are not being collected for the 2007 NRP.



**Table 49 - continued**  
**Combined Summary**  
**2007 FSIS NRP Domestic and Import Scheduled Sampling, and Exploratory Assessments**

<i>Lab</i>	<i>Analysis</i>	<i>Number of Scheduled Domestic Samples</i>	<i>Number of Scheduled Imported Samples</i>	<i>Number of Scheduled Samples for Exploratory Assessments</i>	<i>Total Number of Samples</i>	<i>Notes</i>
						<i>Import Scheduled Sampling:</i> Samples are scheduled for veal fresh and pork fresh.
WL	Carbadox	600			600	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for market hogs and roaster pigs. <i>Import Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP
EL	Chloramphenicol	1200	192		1,392	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for dairy cows, formula-fed veal, young chickens, and young turkeys <i>Import Scheduled Sampling:</i> Samples are scheduled for beef fresh, veal fresh, turkey fresh and chicken fresh
WL	CHCs/COPs and phenylbutazone	2,280	908		3,188	<i>Domestic Scheduled Sampling:</i> 90, 300, 300, 300, 300, 300, 230, 230, and 230 samples are scheduled for equine, heifers, dairy cows, beef cows, sows, boars and stags, goats, sheep, and lambs, respectively <i>Import Scheduled Sampling:</i> 908 samples are scheduled for fresh and processed beef, fresh and processed pork, fresh and processed lamb mutton, fresh goat, fresh turkey, fresh and processed chicken, processed turkey, and fresh and processed varied combo
WL	Dipyrene					<i>Domestic Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP <i>Import Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP
EL	Florfenicol	830	45		875	<i>Domestic Scheduled Sampling:</i> 300, 300, and 230 samples are scheduled for dairy cows, formula-fed veal, and non-formula-fed veal, respectively. <i>Import Scheduled Sampling:</i> 45 samples are scheduled for the beef fresh for 2007 NRP. <b>Unavailability of tissue for analysis (Liver)</b>
WL	Flunixin		78		78	<i>Domestic Scheduled Sampling:</i> All FAST positive samples are screened for flunixin.

**Table 49 - continued**  
**Combined Summary**  
**2007 FSIS NRP Domestic and Import Scheduled Sampling, and Exploratory Assessments**

<i>Lab</i>	<i>Analysis</i>	<i>Number of Scheduled Domestic Samples</i>	<i>Number of Scheduled Imported Samples</i>	<i>Number of Scheduled Samples for Exploratory Assessments</i>	<i>Total Number of Samples</i>	<i>Notes</i>
						<i>Import Scheduled Sampling:</i> 78 samples are scheduled for beef fresh for the 2007 NRP. <b>Unavailability of tissue for analysis (Liver)</b>
ML	Fluoroquinolones <sup>2</sup>					<i>Domestic Scheduled Sampling:</i> No samples are scheduled for the 2006 NRP <i>Import Scheduled Sampling:</i> No samples are scheduled for the 2006 NRP.
EL	Lead and Cadmium			300 + 300	600	<i>Domestic Scheduled Sampling:</i> 300 samples are scheduled for mature turkeys. <i>Import Scheduled Sampling:</i> No samples are scheduled for the 2006 NRP. <b>Unavailability of tissue for analysis (kidney)</b>
WL	Melengestrol Acetate (MGA)	300			300	<i>Domestic Scheduled Sampling:</i> 300 samples are scheduled for heifers. <i>Import Scheduled Sampling:</i> No samples are scheduled for the 2007 NRP. <b>Unavailability of tissue for analysis (Fat)</b>
WL	Nitrofurans	900			830	<i>Domestic Scheduled Sampling:</i> 300, 300, and 300 samples are scheduled for market hogs, sows, and roaster pigs, respectively. <i>Import Scheduled Sampling:</i> No samples are scheduled for the 2006 NRP. <b>Unavailability of tissue for analysis (Liver)</b>
EL	Nitroimidazoles	300	8		308	<i>Domestic Scheduled Sampling:</i> 300 samples are scheduled for young chickens. <i>Import Scheduled Sampling:</i> Chicken fresh
WL	Phenylbutazone by Immunoassay					<i>Domestic Scheduled Sampling:</i> All FAST positive samples are screened for phenylbutazone <i>Import Scheduled Sampling:</i> No samples are scheduled for the 2006 NRP. <b>Unavailability of tissue for analysis (Kidney)</b>
EL	Sulfonamides	4,500	836		5536	<i>Domestic Scheduled Sampling:</i> 300 samples each are scheduled for market hogs, steers, dairy cows, beef cows, bulls, mature turkeys, bob veal, roaster pigs, non-formula-fed veal, young chickens, young turkeys, sheep, lambs, goats and heavy calves, respectively

<sup>2</sup> Fluoroquinolones (enrofloxacin and danofloxacin) are approved for use steers and heifers.

**Table 49 - continued**  
**Combined Summary**  
**2007 FSIS NRP Domestic and Import Scheduled Sampling, and Exploratory Assessments**

<i>Lab</i>	<i>Analysis</i>	<i>Number of Scheduled Domestic Samples</i>	<i>Number of Scheduled Imported Samples</i>	<i>Number of Scheduled Samples for Exploratory Assessments</i>	<i>Total Number of Samples</i>	<i>Notes</i>
						<i>Import Scheduled Sampling:</i> 836 samples are scheduled for fresh beef, processed beef, fresh pork, processed pork, fresh veal, fresh turkey, processed turkey, fresh varied combo, and processed varied combo
EL	Thyreostats	300	90		390	<i>Domestic Scheduled Sampling:</i> 300 samples are scheduled for formula fed veal. <i>Import Scheduled Sampling:</i> 90 samples are veal fresh
MWL	Trenbolone	230			230	<i>Domestic Scheduled Sampling:</i> 230 samples are scheduled for formula-fed veal <i>Import Scheduled Sampling:</i> No samples are scheduled for the 2006 NRP. <b>Unavailability of tissue for analysis (Liver)</b>
MWL	Zeranol	230	90		320	<i>Domestic Scheduled Sampling:</i> 300 samples are scheduled for formula-fed veal <i>Import Scheduled Sampling:</i> Cattle (veal)
<b>Total</b>		<b>19130</b>	<b>3752</b>	<b>1212</b>	<b>24094</b>	

**Key:**

FDA = Food and Drug Administration

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

ARS-RRVARC = Agricultural Research Service, Red River Valley Agricultural Research Center, Fargo, ND

<sup>i</sup> Young chickens and young turkeys have a 0% violation rate for antibiotics for the 3 year period (2001-2003). These production classes were rotated back into the scheduled sampling program for 2007 based on the expert opinion of the Surveillance Advisory Team (SAT).

**No Adjustments Were Made To 2006**

**NRP Sampling Plan**

# **Appendix I**

## **Tissues Required for Laboratory Analysis**

## Tissues Required for Laboratory Analysis

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

<b>Table A-I</b>			
<b>Residue</b>	<b>Tissue Analyzed</b>	<b>Quantity (lb)</b>	<b>Lab</b>
Antibiotics	Kidney, liver, muscle	1	ML <sup>1</sup>
Arsenicals	Liver, muscle	1	EL <sup>2</sup>
Avermectins	Liver, muscle	1	EL
β -Agonists	Liver, muscle	1	WL <sup>3</sup>
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 and liver	1	EL
MGA	Fat	1	WL
Nitrofurans	Liver, muscle	1	WL
Nitroimidazoles	Muscle	1	EL
Phenylbutazone by Immunoassay	Kidney, muscle <sup>3</sup>	1	WL
Sulfonamides	Liver, muscle	1	EL
Thyreostats	Muscle	1	EL

<sup>1</sup> FSIS Midwestern Laboratory

<sup>2</sup> FSIS Eastern Laboratory

<b>Table A-I</b>			
<b>Residue</b>	<b>Tissue Analyzed</b>	<b>Quantity (lb)</b>	<b>Lab</b>
Trenbolone	Liver, muscle	1	ML
Zeranol	Liver, muscle	1	ML

# **Appendix II**

## **FSIS Laboratory Analytical Methods**



**Table AII  
Analytical Methods  
2007 National Residue Program**

Compound Class	Compound	Analytical Method			Minimum Proficiency Level <sup>a</sup>			
		Screen	Determinative (quantitative)	Confirmatory (identification)	Screen	Determinative (quantitative)	Confirmatory (identification)	
Antibiotics	Carbadox		GC-ECD	TBD		15 ppb	TBD	
	Chloramphenicol		GC-ECD	GC-MS		0.25 ppb (M)	0.30 ppb (M)	
	Florfenicol		HPLC	GC/SIM-MS		1.9 ppm (L)	1.9 ppm (L)	
Antibiotics : β-Lactams	Amoxicillin	7-Plate Bioassay	Bioassay	HPLC/MS- MS		TBD	TBD	
	Ampicillin					0.01 ppm	10 ppb	
	Cefazolin					0.02 ppm	50 ppb	
	Cloxacillin					TBD	TBD	
	Desacetyl cephapirin					0.1 ppm	100 ppb	
	Desfuoylceftiofur cysteine disulfide (DCCD)					0.05 ppm	50 ppb	
	Dicloxacillin					0.05 ppm	50 ppb	
	Nafcillin						20 ppb	
	Penicillin-G					0.05 ppm	50 ppb	
	Oxacillin					TBD		
Antibiotics : Tetracyclines	Chlortetracycline	7-Plate Bioassay	Bioassay	HPLC	0.01 ppm	0.05 ppm	0.5 ppm	
	Oxytetracycline				0.5 ppm	0.40 ppm		
	Tetracycline							
Antibiotics: Macrolides	Clindamycin	7-Plate Bioassay		HPLC/MS- MS			0.1 ppm	
	Erythromycin		Bioassay			0.05 ppm	0.1 ppm	
	Lincomycin						0.1 ppm	
	Pirlimycin						0.1 ppm	
	Tilmicosin				HPLC- Ion Pairing		300 ppb (M) 600 ppb (L,K)	0.1 ppm
	Tylosin				Bioassay		0.2 ppm	0.1 ppm

**Table AII  
Analytical Methods  
2007 National Residue Program**

Compound Class	Compound	Analytical Method			Minimum Proficiency Level <sup>a</sup>		
		Screen	Determinative (quantitative)	Confirmatory (identification)	Screen	Determinative (quantitative)	Confirmatory (identification)
Antibiotics: Aminoglycosides	Amikacin	7-Plate Bioassay		HPLC/MS- MS			1.0 ppm (L,K), 0.4 ppm (M)
	Apramycin					0.4 ppm (K) 0.1 ppm (L,M)	
	Dihydrostreptomycin		Bioassay			0.5 ppm	0.4 ppm (L,K,M)
	Gentamicin		Bioassay			0.15 ppm	0.1 ppm (K,M), 0.4 (L)
	Hygromycin						1.0 ppm (L,K) 0.4 ppm (M)
	Kanamycin						4.0 ppm(L), 2.0 ppm (K), 0.4 ppm (M)
	Neomycin		Bioassay			0.25 ppm	0.1ppm (K,M), 0.4 (L)
	Spectinomycin					10.0 ppm	1.0 ppm (L) 0.4 ppm (K) 0.25 ppm (M)
	Streptomycin		Bioassay			0.1 ppm	0.4 ppm (L,K,M)
Tobramycin					1.0 ppm (L) 0.1 ppm (K,M)		
Arsenicals	Arsenicals		AAS	AAS		0.2 ppm	0.2 ppm
Avermectins	Ivermectin		HPLC	HPLC/APCI- MS		7.5 ppb	25 ppb
	Doramectin						
	Moxidectin						
<i>beta</i> -Agonists	Cimaterol	LC/MS-MS		LC/MS-MS	6 ppb		
	Clenbuterol	LC/MS-MS		LC/MS-MS	3 ppb		TBD
	Ractopamine	LC/MS-MS	HPLC	LC/MS/MS	21 ppb	1 ppb (M), 25 ppb (L)	1 ppb
	Salbutamol	LC/MS-MS		LC/MS-MS	3 ppb		
	Zilpaterol	LC/MS-MS		LC/MS-MS	6 ppb		
Hormones, synthetic	DES		GC-MS	GC-MS		0.5 ppb	1.0 ppb (L,M)
	Zeranol	ELISA	GC-MS	GC-MS	0.5 ppb	1.0 ppb	5.0 ppb (L)
	<i>alpha</i> -Trenbolone			GC/MS-MS	5.0 ppb		5.0 ppb (L)
	<i>beta</i> -Trenbolone			GC/MS-MS			5.0 ppb (M)
Nitrofurans	Furazolidone	ELISA		LC/MS-MS	1.0 ppb		1.0 ppb (L)
	Furaltadone	ELISA		LC/MS-MS	1.0 ppb		1.0 ppb (L)

**Table AII  
Analytical Methods  
2007 National Residue Program**

Compound Class	Compound	Analytical Method			Minimum Proficiency Level <sup>a</sup>		
		Screen	Determinative (quantitative)	Confirmatory (identification)	Screen	Determinative (quantitative)	Confirmatory (identification)
Nitroimidazole	Hydroxydimetridazole Hydroxyipronidazole		HPLC	HPLC/MS/MS		1 ppb	1 ppb
Nonsteroidal Anti-inflammatory Drugs (NSAIDs)	Dipyrones <sup>b</sup>	HPLC	HPLC		0.2 ppm	0.2 ppm	
	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)
	Phenylbutazone	ELISA		HPLC/ESI-MS-MS	50 ppb		50 ppb
Anabolic Steroids	Melengesterol Acetate (MGA)	ELISA	GC/ECD	HPLC/APCI-MS	5 ppb	10 ppb	12.5 ppb
Sulfonamides	Sulfapyridine		TLC	GC/ESI-MS		0.05 ppm	0.1 ppm
	Sulfadiazine						
	Sulfathiazole						
	Sulfamerazine						
	Sulfamethazine						
	Sulfachloropyridazine						
	Sulfamethoxypryridazine						
	Sulfaquinoxaline						
	Sulfadimethoxine						
	Sulfaethoxypryridazine						
	Sulfaphenazole						
	Sulfatroxazole						
Sulfisoxazole							
Sulfadoxine							
Thyreostats	2-Mercaptobenzimidazole			HPLC/MS-MS			25 ppb
	6-Methyl-2-thiouracil						
	2-Mercapto-1-methylimidazole						
	6-Phenyl-2-thiouracil						

**Table AII  
Analytical Methods  
2007 National Residue Program**

<i>Compound Class</i>	<i>Compound</i>	<i>Analytical Method</i>			<i>Minimum Proficiency Level<sup>a</sup></i>		
		<i>Screen</i>	<i>Determinative (quantitative)</i>	<i>Confirmatory (identification)</i>	<i>Screen</i>	<i>Determinative (quantitative)</i>	<i>Confirmatory (identification)</i>
Thyreostats (continued)	6-Propyl-2-thiouracil			HPLC/MS-MS			25 ppb
	2-Thiouracil						
CHCs/COPs/PCBs	Aldrin		GPC with GC- EC	GC-MS	0.10 ppm	0.10 ppm	
	<i>alpha</i> -BHC				0.10 ppm	0.10 ppm	
	Captan				0.04 ppm		
	Carbophenothion				0.06 ppm		
	Chlorfenvinphos				0.05 ppm	0.05 ppm	
	Chlorpyrifos				0.10 ppm	0.10 ppm	
	<i>cis</i> -chlordane				0.30 ppm	0.30 ppm	
	Coumaphos-O				0.20 ppm		
	Coumaphos-S				0.20 ppm	0.20 ppm	
	Dieldrin				0.10 ppm	0.10 ppm	
	Endosulfan I				0.02 ppm		
	Endosulfan II				0.04 ppm	0.04 ppm	
	Endrin				0.10 ppm		
	HCB				0.10 ppm	0.10 ppm	
	Heptachlor epoxide				0.10 ppm		
	Heptachlor				0.10 ppm		
	Kepone				0.10 ppm	0.10 ppm	
	Lindane				0.10 ppm	0.10 ppm	
Linuron		0.10 ppm	0.10 ppm				
Methoxychlor		0.06 ppm					
Mirex		0.10 ppm	0.10 ppm				

**Table AII  
Analytical Methods  
2007 National Residue Program**

Compound Class	Compound	Analytical Method			Minimum Proficiency Level <sup>a</sup>		
		Screen	Determinative (quantitative)	Confirmatory (identification)	Screen	Determinative (quantitative)	Confirmatory (identification)
CHCs/COPs/PCBs (continued)	Nonachlor		GPC with GC-EC	GC-MS		0.15 ppm	
	o,p'-TDE						
	Oxychlorane						
	p,p'-DDE						
	p,p'-DDT						
	p,p'-TDE						
	PCB 1260						
	PCB 1254						
	PCB 1242						
	PCB 1248						
	Phosalone						
	Ronnel						
	Stirofos						
	Toxaphene						
trans-chlordane							

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).

b. 4-methylaminoantipyrine, 4-formylaminoantipyrine, and 4-aminoantipyrine

**Table AII**  
**Analytical Methods**  
**2007 National Residue Program**

Key:

AA = Atomic Absorption Spectroscopy

APCI = Atmospheric Pressure Chemical Ionization

CHCs = Chlorinated hydrocarbons

COPs = Chlorinated organophosphates

ECD = Electron Capture Detection

ELISA = Enzyme Linked Immunosorbent Assay

GC = Gas Chromatography

GPC = Gel Permeation Chromatography

HPLC = high performance liquid chromatography

K = Kidney

L = Liver

M = Muscle

Method detection limit = The lowest quantity of residue (or sample component) that can be reliably observed or found in the sample matrix by the analytical methodology used.

MS = Mass Spectroscopy

NA = not applicable

PCBs = Polychlorinated biphenyls

ppb = parts per billion

ppm = parts per million

SIM = selected ion mode

TBD = To be determined

TLC = Thin Layer Chromatography

# **Appendix III**

## **Statistical Table**

## Statistical Table

Table AIII, *Statistical Table*, indicates the number of samples required to ensure detection of a violation that affects a given percentage of the sampled population.

Table AIII  
Statistical Table  
2007 FSIS National Residue Program

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