Table 4.1
Scoring Table for Veterinary Drugs
2001 FSIS NRP, Monitoring Plan and Special Projects

COMPOUND/COMPOUND CLASS	Historical Testing Info. on Violations (FSIS) (V)	Regula-tory Concern (CVM) (R)	With-drawal Time (CVM) (W)	Relative Number of Animals Treated (CVM) (N)	Predicted V = (0.19437* R*N) + 0.84625	Predicted V, Except When Actual V is Available	Impact New & Existing Human Disease (CDC) (D)	Acute or Chronic Toxicity Con-cerns (CVM) (T)	Lack of Testing Info. on Viola-tions (FSIS) (L)	Relative Public Health Concern Score = V*[(D+3*T)/4] *{1+[(L-1)*0.05]}
Those antibiotics quantitated by the FSIS Bioassay MRM	4	4	4	4	3.956	4.000	3	4	1	***15.0***
Amikacin (aminoglycoside)	NT	3	4	2	2.012	2.013	3	2	4	***5.2***
Apramycin (aminoglycoside)	NT	4	4	2	2.401	2.401	3	2	4	***6.2***
Kanamycin (aminoglycoside)	NT	3	4	2	2.012	2.013	3	2	4	***5.2***
Spectinomycin (aminoglycoside)	NA-D, M	4	4	3	3.179	3.179	3	2	4	***8.2***
Streptomycin (aminoglycoside)	NA-D	4	4	3	3.179	3.179	3	2	4	***8.2***
Amoxicillin (beta-lactam)	NT	3	2	2	2.012	2.013	3	4	4	***8.7***
Ampicillin (beta-lactam)	NT	3	2	2	2.012	2.013	3	4	4	***8.7***
Cloxacillin (beta-lactam)	NT	3	2	2	2.012	2.013	3	4	4	***8.7***
Hetacillin (beta-lactam)	NT	2	2	2	1.624	1.624	3	4	4	***7.0***
Ticarcillin (beta-lactam)	NT	2	2	2	1.624	1.624	3	4	4	***7.0***
Ceftiofur (cefalosporin)	NT	3	2	3	2.596	2.596	4	2	4	***7.5***
Cefazolin (synthetic cefalosporin)	NT	3	2	2	2.012	2.013	3	2	4	***5.2***
Chloramphenicol	NA-N	4	2	1	1.624	1.624	4	4	4	***7.5***
Florfenicol (chloramphen. deriv.)	NT	3	4	4	3.179	3.179	3	3	4	***11.0***
Thiamphenicol (chloramphen. deriv.)	NT	3	2	1	1.429	1.429	3	3	4	***4.9***
Fluoroquinolones	NA-O [NT]	4	3	3	3.179	3.179	4	2	3	***8.7***
Avoparcin (glycopeptide)	NT	4	2	1	1.624	1.624	4	2	4	***4.7***
Vancomycin (glycopeptide)	NT	4	2	1	1.624	1.624	4	2	4	***4.7***
Clindamycin (lincosamide)	NA-Q	2	2	2	1.624	1.624	3	3	4	***5.6***
Lincomycin (lincosamide)	NA-Q	2	2	2	1.624	1.624	3	3	4	***5.6***
Pirlimycin (lincosamide)	NA-Q	3	4	3	2.596	2.596	4	2	4	***7.5***
Oleandomycin (macrolide)	NA-Q	2	2	2	1.624	1.624	3	3	4	***5.6***
Spiramycin (macrolide)	NA-Q	2	3	2	1.624	1.624	3	2	4	***4.2***
Tilmicosin (macrolide)	NA-O [NA-D]	4	4 [2]	3	3.179	3.179	3	3	3	***10.5***
Tylosin (macrolide)	NA-D	3	3	2	2.012	2.013	3	2	1	***4.5***
Colistin (polypeptide antibiotic)	NT	1 [2]	1	2	1.235	1.235	1	3 [2]	4	***3.6***
Virginiamycin	NT	1	1	3	1.429	1.429	3	1	4	***2.5***

Table 4.1 - *Continued*
Scoring Table for Veterinary Drugs
2001 FSIS NRP, Monitoring Plan and Special Projects

COMPOUND/COMPOUND CLASS	Historical Testing Info. on Violations (FSIS) (V)	Regula-tory Concern (CVM) (R)	With-drawal Time (CVM) (W)	Relative Number of Animals Treated (CVM) (N)	Predicted V = (0.19437* R*N) + 0.84625	Predicted V, Except When Actual V is Available	Impact New & Existing Human Disease (CDC) (D)	Acute or Chronic Toxicity Con-cerns (CVM) (T)	Lack of Testing Info. on Viola-tions (FSIS) (L)	Relative Public Health Concern Score = V*[(D+3*T)/4] *{1+[(L-1)*0.05]}
Amprolium (coccidiostat)	NT	4	2	2	2.401	2.401	3	2	4	***6.2***
Arsenicals (detected as As)	4	4	2	4	3.956	4.000	3	2	1	***9.0***
Avermectins in FSIS MRM (incl. doramectin, ivermectin, moxidectin) (antiparasitics)	3*	3	4	4	3.179	3.000	2	3	3	***9.1***
Eprinomectin (avermectin)	NT	2	2	3	2.012	2.013	2	2	4	***4.6***
Benzimidazoles (anthelmintic)	1	1	3	2	1.235	1.000	1	2	3	***1.9***
Berenil (antiprotozoal, Histomonas)	NA-G, Mx	4	4	1	1.624	1.624	2	3	4	***5.1***
Carbadox (antimicrobial)	NA-O [NA-W]	4	4	3	3.179	3.179	3	4	3	***13.1***
Clenbuterol and other unapproved beta agonists (growth promotants)	NA-O [NA-C]	4	2	1	1.624	1.624	3 [1]	4	3	***6.7***
Ractopamine (beta agonist)	NT	4	2	3	3.179	3.179	2	4	4	***12.8***
Clorsulon (anthelmintic, Trematodes)	NT [1]	2	3	2	1.624	1.624	2	2	4	***3.7***
Dexamethasone (glucocorticoid)	NA-O [NT]	4	2	2	2.401	2.401	1	3	3	***6.6***
Methyl prednisone (glucocorticoid)	NT	4	2	2	2.401	2.401	1	3	4	***6.9***
Prednisone (glucocorticoid)	NT	2	2	1	1.235	1.235	1	3	4	***3.6***
Halofuginone (antiprotozoal, coccidiostat)	2	1	2	2	1.235	2.000	2	2	1	***4.0***
Hormones, naturally-occurring	NT	2	1	4	2.401	2.401	2	2	4	***5.5***
DES (hormone, synthetic)	NA-N	4	4	1	1.624	1.624	3 [2]	4	4	***7.0***
MGA (hormone, synthetic)	NA-N	3	1	4	3.179	3.179	3 [2]	3	4	***11.0***
Trenbolone (hormone, synthetic)	NT	4 [3]	1 [3]	3	3.179	3.179	3 [2]	3	4	***11.0***
Zeranol (hormone, synthetic)	NT [NA-N]	3	1	3	2.596	2.596	3 [2]	3	4	***9.0***
Lasalocid (coccidiostat)	NT	2	1	3	2.012	2.013	3	2	4	***5.2***
Levamisole (anthelmintic, Nematodes)	2	3	3	2	2.012	2.000	1	1	1	***2.0***
Morantel and pyrantel (anthelmintic)	1	1	1	2	1.235	1.000	2	1	3	***1.4***
Nicarbazin (coccidiostat)	1	2	2	1	1.235	1.000	2	1	3	***1.4***
Nitrofurans (incl. furazolidone, nitrofurazone) (antimicrobial)	NT	4	2	1	1.624	1.624	3	4	4	***7.0***
Nitromidazoles in FSIS MRM (dimetridazole, ipronidazole) (antiprotozoals, Histomonas)	NA-O [NA-N]	4	2	1	1.624	1.624	3 [1]	4	3	***6.7***

Table 4.1 - *Continued*
Scoring Table for Veterinary Drugs
2001 FSIS NRP, Monitoring Plan and Special Projects

COMPOUND/COMPOUND CLASS	Historical Testing Info. on Violations (FSIS) (V)	Regula-tory Concern (CVM) (R)	With-drawal Time (CVM) (W)	Relative Number of Animals Treated (CVM) (N)	Predicted V = (0.19437* R*N) + 0.84625	Predicted V, Except When Actual V is Available	Impact New & Existing Human Disease (CDC) (D)	Acute or Chronic Toxicity Con-cerns (CVM) (T)	Lack of Testing Info. on Viola-tions (FSIS) (L)	Relative Public Health Concern Score = V*[(D+3*T)/4] *{1+[(L-1)*0.05]}
Ronidazole (nitroimidazole) (antimicrobial)	NT	2	2	1	1.235	1.235	3 [1]	4	4	***5.3***
Etodolac (NSAID)	NT	3	2	1	1.429	1.429	1	3	4	***4.1***
Flunixin (NSAID)	NA-O [NT]	4 [3]	2	3	3.179	3.179	1	3	2	***8.3***
Phenylbutazone (NSAID)	NA-O [NT]	4	3	2	2.401	2.401	1	4 [3]	2	***8.2***
Dipyrone (NSAID)	NT	3	3	1	1.429	1.429	1	3	4	***4.1***
Sulfonamides (antimicrobials, some are coccidiostats)	4	4	3	4	3.956	4.000	3	3	1	***12.0***
Sulfanitran (antibacterial, coccidiostat)	NT	4	3	4	3.956	3.956	3	3	4	***13.6***
Thyreostats (incl. thiouracil)	NT	4	3	1	1.624	1.624	2	4	4	***6.5***
Veterinary tranquilizers	NT	4	2	2	2.401	2.401	1	1	4	***2.8***

*Scoring based on ivermectin violations only; method not extended to other avermectin compounds until after 1998

Key:

MRM = Multiresidue method

NT = Not Tested by FSIS (1990-1999):

NA = Compound has been tested by FSIS (1990-1999), but the information is Not Applicable

NA-C = compound is of concern in several production classes, but testing has been carried out in only one

NA-D = detected and quantitated, but not uniquely identified, i.e., method cannot distinguish between this compound and one or more other compounds

NA-G = testing carried out in limited geographical area only, and thus does not necessarily represent overall national violation rate, e.g., sampling for berenil in Puerto Rico

NA-M = problem with analytical methodology

NA-Mx = new information indicates that testing was not carried out in the correct matrix, e.g., berenil testing carried out in plasma rather than serum)

NA-N = new information since previous testing, suggesting that the results of this testing may not be representative of the current situation

NA-Q = detected but not quantitated by method

NA-W = withdrawal time for drug has changed

NA-O = data is preliminary, because useable data on this compound (i.e., data not subject to any of the various problems listed immediately above) has been collected for only one year

FSIS = Scores in this column supplied by FSIS

CVM = Scores in this column supplied by CVM

CDC = Scores in this column supplied by CDC

Numbers in parentheses are estimates.

[Where scores have been changed from the 2000 NRP, those from year 2000 are shown in square brackets.]

Table 4.2
Rank and Status for Veterinary Drugs
2001 FSIS NRP, Monitoring Plan and Special Projects

Rank	DRUG	SCORE	STATUS IN 2001 NRP
1	**Antibiotics in FSIS Bioassay MRM** (tetracycline, oxytetracycline, chlortetracycline, beta-lactams (penicillins and cephalosporins; not differentiated within this category), streptomycin/spectinomycin (not differentiated), gentamicin, erythromycin, tilmicosin, tylosin, neomycin, flavomycin, bacitracin, hygromycin, novobiocin, lincomycin*, pirlimycin*, clindamycin*, spiramycin*, oleandomycin*] *identification by follow-up with mass spectrometry; not quantitated	**15.0**	Monitoring Plan, all domestic production classes except egg products; and all import product classes.
2	Sulfanitran (antibacterial, coccidiostat)	**13.6**	NIP, no method - need to add to sulfonamide MRM, or find new method.
3	Carbadox (antimicrobial)	**13.1**	Special Project, roaster pigs and imported fresh pork
4	Ractopamine (beta agonist)	**12.8**	Special Project, market hogs and steers.
5	**Sulfonamides in FSIS MRM** (sulfapyridine, sulfadiazine, sulfathiazole, sulfamerazine, sulfamethazine, sulfachloropyridazine, sulfadoxine, sulfamethoxypyridazine, sulfaquinoxaline, sulfadimethoxine, sulfisoxazole, sulfacetamide, sulfamethoxazole, sulfamethizole, sulfanilamide, sulfaguanidine, sulfabromomethazine, sulfasalazine, sulfaethoxypyridazine, sulfaphenazole, and sulfatroxazole) (antimicrobials, some are coccidiostats)	**12.0**	Monitoring Plan, MRM, all domestic production classes except sheep and rabbits, and all import product classes.
6	Florfenicol (chloramphenicol derivative)	**11.0**	NIP, no method.F DA is currently working on an MRM for chloramphenicol, florfenicol, and thiamphenicol.
7	MGA (hormone, synthetic)	**11.0**	Special Project, heifers. Should also be analyzable by extension of FSIS DES/zeranol method, or by adoption of Swiss MRM.
8	Trenbolone (hormone, synthetic)	**11.0**	Special Project, formula fed veal, *contingent upon successful extension, to trenbolone, of FSIS MRM for DES and zeranol.*
9	Tilmicosin (macrolide)	**10.5**	NIP, laboratory resources not available.
10	**Avermectins in FSIS MRM** (doramectin, ivermectin, and moxidectin) (antiparasitic)	**9.1**	Monitoring Plan, MRM, ratites and all non-avian domestic production classes; and all non-avian fresh import product classes.
11	Arsenicals (detected as As)	**9.0**	Monitoring Plan, beef cows, goats, all porcine production classes, and all avian production classes (including egg products) except ratites and squab; and imported fresh and processed poultry and pork
12	Zeranol (hormone, synthetic)	**9.0**	Special Project, formula fed veal, using FSIS MRM for DES and zeranol.
13	Amoxicillin (beta-lactam)	**8.7**	NIP, no method - need MRM for beta-lactams.
14	Ampicillin (beta-lactam)	**8.7**	NIP, no method - need MRM for beta-lactams.
15	Cloxacillin (beta-lactam)	**8.7**	NIP, no method - need MRM for beta-lactams.
16	**Fluoroquinolones in FSIS MRM** (ciprofloxacin, desethylenecipro floxacin, danofloxacin, difloxacin, enrofloxacin, marbofloxacin, orbifloxacin, sarafloxacin)	**8.7**	Special Project, MRM, dairy cows, and young chickens, and imported fresh poultry.

Table 4.2 - *Continued*
Rank and Status for Veterinary Drugs
2001 FSIS NRP, Monitoring Plan and Special Projects

Rank	DRUG	SCORE	STATUS IN 2001 NRP
17	Flunixin (NSAID)	**8.3**	NIP, laboratory resources not available.
18	Phenylbutazone (NSAID)	**8.2**	Monitoring Plan, all domestic production classes except roaster pigs, and all import product classes, as part of the CHC/COP method.
19	Spectinomycin (aminoglycoside)	**8.2**	NIP, method not operational - ultimately need MRM for aminoglycosides.
20	Streptomycin (aminoglycoside)	**8.2**	NIP, no method - need MRM for aminoglycosides; will need bridging data to use chemical method on streptomycin.
21	Ceftiofur (cefalosporin)	**7.5**	NIP, no method - need MRM for beta-lactams.
22	Chloramphenicol	**7.5**	Monitoring Plan, dairy cattle, formula-fed veal, and non-formula fed veal; and imported fresh beef and veal. FDA is currently working on an MRM for chloramphenicol, florfenicol, and thiamphenicol.
23	Pirlimycin (lincosamide)	**7.5**	NIP, method needs improvement.
24	DES (hormone, synthetic)	**7.0**	Special Project, formula fed veal, using FSIS MRM for DES and zeranol.
25	Hetacillin (beta-lactam)	**7.0**	NIP, no method - need MRM for beta-lactams.
26	**Nitrofurans** (incl. furazolidone and nitrofurazone) (antimicrobial)	**7.0**	NIP, no viable method available.
27	Ticarcillin (beta-lactam)	**7.0**	NIP, no method - need MRM for beta-lactams.
28	Methyl prednisone (glucocorticoid)	**6.9**	NIP, no method, but should be analyzable by extension of FSIS DES/zeranol method, or by adoption of Swiss MRM.
29	**Clenbuterol and other unapproved beta agonists** (growth promotants)*	**6.7**	Special Project, market hogs, steers, and formula-fed veal, by eyeball screen followed by confirmatory method performed by FDA-NCTR; need to test eyeball screen to officially extend to other beta agonists, and install NCTR confirmatory MRM for beta agonists.
30	**Nitromidazoles in FSIS MRM** (dimetridazole and ipronidazole) (antiprotozoal)	**6.7**	NIP, laboratory resources not available.
31	Dexamethasone (glucocorticoid)	**6.6**	NIP, laboratory resources not available.
32	Thyreostats (incl. thiouracil)	**6.5**	NIP, laboratory resources not available.
33	Amprolium (coccidiostat)	**6.2**	NIP, laboratory resources not available.
34	Apramycin (aminoglycoside)	**6.2**	NIP, no method - need MRM for aminoglycosides.
BASED ON CONSULTATION WITH FDA, CDC, AND OTHER AGENCIES, COMPOUNDS BELOW THIS POINT WERE NOT CONSIDERED TO REPRESENT A BROAD POTENTIAL PUBLIC HEALTH RISK. HOWEVER, SOME OF THESE MAY BE SAMPLED ON A SPECIFIC, AS-NEEDED BASIS. NONE OF THE COMPOUNDS ON THE FOLLOWING PAGE WAS SELECTED FOR INCLUSION INTO THE 2001 FSIS NATIONAL RESIDUE PROGRAM (NRP).			
35	Clindamycin (lincosamide)	**5.6**	NIP, no method, low priority.
36	Lincomycin (lincosamide)	**5.6**	NIP, no method, low priority.
37	Oleandomycin (macrolide)	**5.6**	NIP, no method, low priority.
38	**Hormones, naturally-occurring** (17-estradiol, testosterone, and progesterone)	**5.5**	NIP, no method, low priority, but should be analyzable by extension of FSIS DES/zeranol method, or by adoption of Swiss MRM.
39	Ronidazole (nitroimidazole) (antimicrobial)	**5.3**	NIP - may be able to extend MRM for nitroimidazoles to capture this compound.
40	Amikacin (aminoglycoside)	**5.2**	NIP, no method - need MRM for aminoglycosides.

Table 4.2 - *Continued*
Rank and Status for Veterinary Drugs
2001 FSIS NRP, Monitoring Plan and Special Projects

Rank	DRUG	SCORE	STATUS IN 2001 NRP
41	Cefazolin (synthetic cefalosporin)	**5.2**	NIP, no method - need MRM for beta-lactams.
42	Kanamycin (aminoglycoside)	**5.2**	NIP, no method - need MRM for aminoglycosides.
43	Lasalocid (coccidiostat)	**5.2**	NIP, Official FSIS Method available, low priority.
44	Berenil (antiprotozoal)	**5.1**	NIP, scored as low priority, but priority may increase because of recent FDA concerns about misuse in dairy cattle. FSIS method available, but for plasma only. Need to review NADA method for liver.
45	Thiamphenicol (chloramphenicol derivative)	**4.9**	NIP, no method.F DA is currently working on an MRM for chloramphenicol, florfenicol, and thiamphenicol..
46	Avoparcin (glycopeptide)	**4.7**	NIP, no method, low priority.
47	Vancomycin (glycopeptide)	**4.7**	NIP, no method, low priority.
48	Eprinomectin (avermectin)	**4.6**	NIP, no method, low priority.
49	Tylosin (macrolide)	**4.5**	NIP, no method, low priority.
50	Spiramycin (macrolide)	**4.2**	NIP, low priority.
51	Dipyrone (NSAID)	**4.1**	NIP, no method, low priority, but MRM for all NSAID's may be desirable.
52	Etodolac (NSAID)	**4.1**	NIP, no method, low priority, but MRM for all NSAID's may be desirable.
53	Halofuginone (antiprotozoal, coccidiostat)	**4.0**	NIP, Official FSIS Method available, low priority.
54	Clorsulon (anthelmintic)	**3.7**	NIP, Official FSIS Method available, low priority.
55	Colistin (polypeptide antibiotic)	**3.6**	NIP, no method, low priority.
56	Prednisone (glucocorticoid)	**3.6**	NIP, no method, low priority, but should be analyzable by extension of FSIS DES/zeranol method, or by adoption of Swiss MRM.
57	**Veterinary tranquilizers in FSIS MRM** (azaperone and its metabolite azaperol, xylazine, haloperidol, acetopromazine, propionylpromazine, and chlorpromazine)	**2.8**	NIP. Screening method available. Low score, but FDA indicates interest in applying this method to dairy cows, market hogs, and ratites.
58	Virginiamycin	**2.5**	NIP, no method, low priority.
59	Levamisole (anthelmintic)	**2.0**	NIP, Official FSIS Method available, low priority.
60	Benzimidazoles (anthelmintic)	**1.9**	NIP, Official FSIS Method available, low priority.
61	Morantel and pyrantel (anthelmintic)	**1.4**	NIP, Official FSIS Method available, low priority.
62	Nicarbazin (coccidiostat)	**1.4**	NIP, no method, low priority.

*The clenbuterol methodology employs a screen that has been officially validated for clenbuterol only, but has also demonstrated the ability to detect other beta agonists (including fenoterol and cimaterol).This is followed by a confirmatory method that detects eight unapproved beta agonists (clenbuterol, cimaterol, fenoterol, mabuterol, salbutamol, brombuterol, and terbutaline).

Key:

CHC/COP = Chlorinated hydrocarbon/chlorinated organophosphate
MRM = Multiresidue method
NIP = Not included in 2001 FSIS National Residue Program (NRP)
NSAID = Non-steroidal anti-inflammatory drug

In the second column, where multiple compounds have been grouped together for analysis or potential analysis by a single MRM, the title of that group has been bolded (e.g., "Antibiotics in FSIS Bioassay MRM").

Table 4.3
Production Classes to be Considered for Each Veterinary Drug/Drug Class
2001 FSIS NRP, Monitoring Plan and Special Projects

Est. Rel. % Dom. Cons.	DRUG->	Anti-biotics	Car-badox	Racto-pamine	Sulfon-amides	MGA	Tren-bolone	Aver-mecs.	Arsen-icals	Zer-anol	Fluoro quins.	Pheny-lbute.	Chlor-fenicol.	DES	Clen-buterol
	DRUG SCORE->	15.0	13.1	12.8	12.0	11.0	11.0	9.1	9.0	9.0	8.7	8.2	7.5	7.0	6.7
0.038	Horses	★			★			★				★			
0.664	Bulls	★			★			★				★			
1.857	Beef cows	★			★			★	★			★			
1.886	Dairy cows	★			★			★			★	★	★		
10.175	Heifers	★		☒	★	★		★				★		☒	
16.777	Steers	★		★	★	☒		★				★		☒	★
0.048	Bob veal calves	★			★			★				▤	☒		
0.196	Formula-fed veal	★			★	☒	★	★		★		▤	★	★	★
0.008	Non-formula-fed veal	★			★	☒	☒	★		☒		▤	★		
0.020	Heavy calves	★			★			★				★			
0.013	Sheep	★						★				▤			
0.271	Lambs	★			★		☒	★				▤			
0.030	Goats	★			★			★	★			▤			
21.534	Market hogs	★	☒	★	★			★	★		☒	▤			★
0.013	Roaster pigs	★	★	☒	★			★	★						
0.144	Boars/Stags	★	☒		★			★	★			★			
0.749	Sows	★	☒		★			★	★			★			
35.735	Young chickens	★			★				★		★	▤			
0.664	Mature chickens	★			★				★		☒	▤			
6.317	Young turkeys	★		☒	★				★		☒	▤			
0.047	Mature turkeys	★			★				★		☒	▤			
0.130	Ducks	★			★				★			▤			
0.002	Geese	★			★				★			▤			
0.010	Other fowl - ratites	★			★			★				▤			
>>0.010	Squab	★			★							▤			
0.001	Rabbits	★						★				▤			
0.006	Other livestock - bison	★			★			★				▤			
2.659	Egg products	☒			★				★		☒	▤			

Key:

Est. Rel. % Dom. Cons. = Estimated relative percent of domestic consumption, calendar year 1999. 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 4.4). See explanation in text, Section 4, for values used for ratites, bison, and squab.

★ = Scheduled for sampling under the 2001 FSIS NRP.

☒ = Of potential regulatory concern, but could not be sampled under the 2001 FSIS NRP because of laboratory resource constraints.

▤ = Not of regulatory concern, but sampled anyway because comes through during CHC/COP method.

Table 4.4
Estimated Relative Consumption, Domestically Produced Meat, Poultry, and Egg Products
2001 FSIS NRP, Monitoring Plan and Special Projects

PRODUCTION CLASS	NUMBER HEAD SLAUGHTERED	LBS./ ANIMAL, DRESSED WT.	TOTAL LBS., DRESSED WT.	EST. RELATIVE CONSUMPTION
Bulls	627,000	881	552,387,000	0.664
Beef cows	3,030,000	510	1,545,300,000	1.857
Dairy cows	2,573,000	610	1,569,530,000	1.886
Heifers	11,648,000	727	8,468,096,000	10.175
Steers	17,608,000	793	13,963,144,000	16.778
Bob calves	533,086	[75]	39,981,450	0.048
Formula-fed veal calves	664,191	[245]	162,726,795	0.196
Non-formula-fed veal calves	18,386	[350]	6,435,100	0.008
Heavy calves	41,120	[400]	16,448,000	0.020
SUBTOTAL, CATTLE	**36,742,783**		**26,324,048,345**	**31.632**
Market hogs	95,840,000	187	17,922,080,000	21.535
Roaster pigs	160,000	70	11,200,000	0.013
Boars/Stags	404,000	296	119,584,000	0.144
Sows	3,335,000	187	623,645,000	0.749
SUBTOTAL, SWINE	**99,739,000**		**18,676,509,000**	**22.441**
Sheep	188,000	59	11,092,000	0.013
Lambs	3,369,000	67	225,723,000	0.271
SUBTOTAL, OVINE	**4,049,608**		**261,445,400**	**0.314**
Goats	492,608	[50]	24,630,400	0.030
Horses	62,813	[500]	31,406,500	0.038
Other livestock (includes bison)	17,956	[300]	5,386,800	0.006
TOTAL,ALL LIVESTOCK	**140,612,160**		**45,298,796,045**	**54.431**
Young chickens			29,741,380,000	35.738
Mature chickens			552,341,000	0.664
Young turkeys			5,257,801,000	6.318
Mature turkeys			38,715,000	0.047
Ducks			108,148,000	0.130
Geese			1,674,665	0.002
Other fowl (includes ratites)			8,182,000	0.010
SUBTOTAL, POULTRY			**35,708,241,665**	**42.909**
Rabbits	401,718		1,017,856	0.001
Egg products			2,213,090,000	2.659
GRAND TOTAL, ALL PRODUCTION CLASSES			**83,221,145,566**	**100.000**

Notes on Table --- Source of data: The numbers in this table were derived from National Agricultural Statistical Service (NASS) data on animals (and egg products) presented for slaughter (or processing) in federally inspected establishments, for calendar year 1999. **Purpose:** 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 will in turn be used to estimate relative exposures to chemical residues). 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/processing in federally inspected establishments. Dressed weight, which represents the weight of the carcass after hide, hoof and hair 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 domestically produced product consumed domestically, vs. that which is exported).* **Poultry, rabbits, and egg products:** For these production classes, figures for total pounds dressed weight, CY'99, were available directly from NASS. **Livestock:** For livestock, NASS does not provide figures for total pounds dressed weight. Therefore, CY'99 NASS figures for number of head slaughtered were multiplied by CY'99 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.

Table 4.5
Veterinary Drug Compound/Production Class Pairs,
Sorted by Sampling Priority Score, "Full-Resource" Sampling
2001 FSIS NRP, Monitoring Plan and Special Projects

RANK	COMPOUND CLASS	COMPOUND PRIORITY RATING (P)	PRODUCTION CLASS	EST. RELATIVE % DOMESTIC CONSUMPTION (D)	C/PC PAIR PRIORITY SCORE (P x D)	# SAMPLES
1	Antibiotics	15.00	Young chickens	35.738	536.07	460
2	Sulfonamides	12.00	Young chickens	35.738	428.85	460
3	Antibiotics	15.00	Market hogs	21.535	323.03	460
4	Arsenicals	9.00	Young chickens	35.738	321.64	460
5	Sulfonamides	12.00	Market hogs	21.535	258.43	460
6	Antibiotics	15.00	Steers	16.778	251.68	460
7	Sulfonamides	12.00	Steers	16.778	201.34	460
8	Avermectins	9.08	Market hogs	21.535	195.43	460
9	Arsenicals	9.00	Market hogs	21.535	193.82	460
10	Antibiotics	15.00	Heifers	10.175	152.63	460
11	Avermectins	9.08	Steers	16.778	152.26	460
12	Sulfonamides	12.00	Heifers	10.175	122.10	460
13	Antibiotics	15.00	Young turkeys	6.318	94.77	460
14	Avermectins	9.08	Heifers	10.175	92.34	460
15	Sulfonamides	12.00	Young turkeys	6.318	75.81	460
16	Arsenicals	9.00	Young turkeys	6.318	56.86	460
17	Sulfonamides	12.00	Egg products	2.659	31.91	460
18	Antibiotics	15.00	Dairy cows	1.886	28.29	300
19	Antibiotics	15.00	Beef cows	1.857	27.85	300
20	Arsenicals	9.00	Egg products	2.659	23.93	300
21	Sulfonamides	12.00	Dairy cows	1.886	22.63	300
22	Sulfonamides	12.00	Beef cows	1.857	22.28	300
23	Avermectins	9.08	Dairy cows	1.886	17.12	300
24	Avermectins	9.08	Beef cows	1.857	16.85	300
25	Arsenicals	9.00	Beef cows	1.857	16.71	300
26	Antibiotics	15.00	Sows	0.749	11.24	300
27	Antibiotics	15.00	Bulls	0.664	9.96	300
28	Antibiotics	15.00	Mature chickens	0.664	9.96	300
29	Sulfonamides	12.00	Sows	0.749	8.99	300
30	Sulfonamides	12.00	Bulls	0.664	7.97	300
31	Sulfonamides	12.00	Mature chickens	0.664	7.96	300
32	Avermectins	9.08	Sows	0.749	6.80	300
33	Arsenicals	9.00	Sows	0.749	6.74	300
34	Avermectins	9.08	Bulls	0.664	6.02	300
35	Arsenicals	9.00	Mature chickens	0.664	5.97	300
36	Antibiotics	15.00	Lambs	0.271	4.07	300
37	Sulfonamides	12.00	Lambs	0.271	3.25	300
38	Antibiotics	15.00	Formula-fed	0.196	2.93	300
39	Avermectins	9.08	Lambs	0.271	2.46	300
40	Sulfonamides	12.00	Formula-fed	0.196	2.35	300

Table 4.5 - *Continued*
Veterinary Drug Compound/Production Class Pairs,
Sorted by Sampling Priority Score, "Full-Resource" Sampling
2000 FSIS NRP, Monitoring Plan and Special Projects

RANK	COMPOUND CLASS	COMPOUND PRIORITY RATING (P)	PRODUCTION CLASS	EST. RELATIVE % DOMESTIC CONSUMPTION (D)	C/PC PAIR PRIORITY SCORE (P x D)	# SAMPLES
41	Antibiotics	15.00	Boars/Stags	0.144	2.16	230
42	Antibiotics	15.00	Ducks	0.130	1.95	230
43	Avermectins	9.08	Formula-fed	0.196	1.77	230
44	Sulfonamides	12.00	Boars/Stags	0.144	1.72	230
45	Sulfonamides	12.00	Ducks	0.130	1.56	230
46	Avermectins	9.08	Boars/Stags	0.144	1.30	230
47	Arsenicals	9.00	Boars/Stags	0.144	1.29	230
48	Arsenicals	9.00	Ducks	0.130	1.17	230
49	Antibiotics	15.00	Bob calves	0.048	0.72	230
50	Antibiotics	15.00	Mature turkeys	0.047	0.70	230
51	Sulfonamides	12.00	Bob calves	0.048	0.58	230
52	Antibiotics	15.00	Horses	0.038	0.57	230
53	Sulfonamides	12.00	Mature turkeys	0.047	0.56	230
54	Sulfonamides	12.00	Horses	0.038	0.45	230
55	Antibiotics	15.00	Goats	0.030	0.44	230
56	Avermectins	9.08	Bob calves	0.048	0.44	230
57	Arsenicals	9.00	Mature turkeys	0.047	0.42	230
58	Sulfonamides	12.00	Goats	0.030	0.36	230
59	Avermectins	9.08	Horses	0.038	0.34	230
60	Antibiotics	15.00	Heavy calves	0.020	0.30	230
61	Avermectins	9.08	Goats	0.030	0.27	230
62	Arsenicals	9.00	Goats	0.030	0.27	230
63	Sulfonamides	12.00	Heavy calves	0.020	0.24	230
64	Antibiotics	15.00	Roaster pigs	0.013	0.20	230
65	Antibiotics	15.00	Sheep	0.013	0.20	230
66	Avermectins	9.08	Heavy calves	0.020	0.18	230
67	Sulfonamides	12.00	Roaster pigs	0.013	0.16	230
68	Antibiotics	15.00	Other fowl	0.010	0.15	230
69	Avermectins	9.08	Roaster pigs	0.013	0.12	90
70	Arsenicals	9.00	Roaster pigs	0.013	0.12	90
71	Avermectins	9.08	Sheep	0.013	0.12	90
72	Sulfonamides	12.00	Other fowl	0.010	0.12	90
73	Antibiotics	15.00	Non-formula	0.008	0.12	90
74	Antibiotics	15.00	Other livestock	0.006	0.10	90
75	Sulfonamides	12.00	Non-formula	0.008	0.09	90
76	Avermectins	9.08	Other fowl	0.010	0.09	90
77	Sulfonamides	12.00	Other livestock	0.006	0.08	90
78	Avermectins	9.08	Non-formula	0.008	0.07	90
79	Avermectins	9.08	Other livestock	0.006	0.06	90
80	Antibiotics	15.00	Geese	0.002	0.03	90

Table 4.5 - *Continued*
Veterinary Drug Compound/Production Class Pairs,
Sorted by Sampling Priority Score, "Full-Resource" Sampling
2000 FSIS NRP, Monitoring Plan and Special Projects

RANK	COMPOUND CLASS	COMPOUND PRIORITY RATING (P)	PRODUCTION CLASS	EST. RELATIVE % DOMESTIC CONSUMPTION (D)	C/PC PAIR PRIORITY SCORE (P x D)	# SAMPLES
81	Sulfonamides	12.00	Geese	0.002	0.02	90
82	Antibiotics	15.00	Rabbits	0.001	0.02	90
83	Arsenicals	9.00	Geese	0.002	0.02	90
84	Avermectins	9.08	Rabbits	0.001	0.01	90

Table 4.6
Adjusted Number of Analyses for Each Veterinary Drug Compound/Production Class Pair, "Full Resource" Sampling
2001 FSIS NRP Monitoring Plan and Special Projects

COMPOUND CLASS	PRODUCTION CLASS	SCORE	# SAMP.	%VIOL.	UNADJ. #	ADJUST-MENT	INITIAL ADJ.#	ADJUST-MENT	FINAL ADJ.#
Antibiotics	Young chickens	536.067	3816	0.05	460		460		**460**
Antibiotics	Market hogs	323.032	3991	0.58	460	+1	690		**690**
Antibiotics	Steers	251.675	3063	0.07	460		460		**460**
Antibiotics	Heifers	152.631	2548	0.04	460		460		**460**
Antibiotics	Young turkeys	94.768	3952	0.23	460		460		**460**
Antibiotics	Egg products	39.889	304	0.66	460	+2	690	No method	**0**
Antibiotics	Dairy cows	28.290	4676	0.79	300	+2	690		**690**
Antibiotics	Beef cows	27.853	4164	0.22	300		300		**300**
Antibiotics	Sows	11.241	4070	0.27	300		300		**300**
Antibiotics	Bulls	9.956	2100	0.00	300	-1	230		**230**
Antibiotics	Mature chickens	9.956	3532	0.00	300	-1	230		**230**
Antibiotics	Lambs	4.068	3835	0.23	300		300		**300**
Antibiotics	Formula-fed	2.933	6361	0.71	300	+2	690		**690**
Antibiotics	Boars/Stags	2.155	2688	0.26	230		230		**230**
Antibiotics	Ducks	1.949	3058	0.13	230		230		**230**
Antibiotics	Bob calves	0.721	4347	1.29	230	+2	460		**460**
Antibiotics	Mature turkeys	0.698	2143	0.14	230		230		**230**
Antibiotics	Horses	0.566	2097	5.58	230	+2	460		**460**
Antibiotics	Goats	0.444	2913	0.17	230		230		**230**
Antibiotics	Heavy calves	0.296	3358	0.42	230		230		**230**
Antibiotics	Roaster pigs	0.202	197	1.02	230	+1	300		**300**
Antibiotics	Sheep	0.200	2277	0.04	230		230		**230**
Antibiotics	Other fowl - ratites	0.147	NT	NT	230	+1	300		**300**
Antibiotics	Non-formula	0.116	3051	0.59	90	+1	230		**230**
Antibiotics	Other livestock - bison	0.097	NT	NT	90	+1	230		**230**
Antibiotics	Geese	0.030	601	0.00	90	NO ADJ	90		**90**
Antibiotics	Rabbits	0.018	1014	2.56	90	+2	300		**300**
Antibiotics	Squab		NT		45		45		45
TOTAL # SAMPLES					**7565**		**9755**		**9065**

Table 4.6 - *Continued*
Adjusted Number of Analyses for Each Veterinary Drug Compound/Production Class Pair, "Full Resource" Sampling
2000 FSIS NRP Monitoring Plan and Special Projects

COMPOUND CLASS	PRODUCTION CLASS	SCORE	# SAMP.	%VIOL.	UNADJ. #	ADJUST-MENT	INITIAL ADJ.#	ADJUST-MENT	FINAL ADJ.#
Avermectins	Market hogs	195.435	2699	0.00	460	-1	300		**300**
Avermectins	Steers	152.264	3197	0.03	460		460		**460**
Avermectins	Heifers	92.342	2197	0.00	460	-1	300		**300**
Avermectins	Dairy cows	17.115	2855	0.14	300		300		**300**
Avermectins	Beef cows	16.851	3177	0.22	300		300		**300**
Avermectins	Sows	6.801	2179	0.00	300	-1	230		**230**
Avermectins	Bulls	6.024	1612	0.31	300		300		**300**
Avermectins	Lambs	2.461	2608	0.08	300		300		**300**
Avermectins	Formula-fed	1.774	2940	0.14	230		230		**230**
Avermectins	Boars/Stags	1.304	1324	0.00	230	-1	90		**90**
Avermectins	Bob calves	0.436	157	0.00	230		230		**230**
Avermectins	Horses	0.342	1290	0.78	230	+2	460		**460**
Avermectins	Goats	0.269	2812	0.68	230	+1	300		**300**
Avermectins	Heavy calves	0.179	2895	0.45	230		230		**230**
Avermectins	Roaster pigs	0.122	NT	NT	90	+1	230		**230**
Avermectins	Sheep	0.121	1650	0.18	90		90		**90**
Avermectins	Other fowl - ratites	0.089	NT	NT	90	+1	230		**230**
Avermectins	Non-formula	0.070	2219	0.50	90	+1	230		**230**
Avermectins	Other livestock - bison	0.059	NT	NT	90	+1	230		**230**
Avermectins	Rabbits	0.011	NT	NT	90	+1	230		**230**
TOTAL # SAMPLES					**4800**		**5270**		**5270**

Table 4.6 - *Continued*
Adjusted Number of Analyses for Each Veterinary Drug Compound/Production Class Pair, "Full Resource" Sampling
2000 FSIS NRP Monitoring Plan and Special Projects

COMPOUND CLASS	PRODUCTION CLASS	SCORE	# SAMP.	%VIOL.	UNADJ. #	ADJUST-MENT	INITIAL ADJ.#	ADJUST-MENT	FINAL ADJ.#
Sulfonamides	Young chickens	428.853	4170	0.17	460		460	max. 300	300
Sulfonamides	Market hogs	258.426	14510	0.71	460	+2	460	max. 300	300
Sulfonamides	Steers	201.340	2725	0.11	460		460	max. 300	300
Sulfonamides	Heifers	122.105	2346	0.04	460		460	max. 300	300
Sulfonamides	Young turkeys	75.814	3961	0.15	460		460	max. 300	300
Sulfonamides	Egg products	31.911	NT	NT	460	+1	460	max. 300	300
Sulfonamides	Dairy cows	22.632	4157	0.36	300		300		300
Sulfonamides	Beef cows	22.282	3811	0.13	300		300		300
Sulfonamides	Sows	8.993	4394	0.71	300	+2	460	max. 300	300
Sulfonamides	Bulls	7.965	2109	0.09	300		300		300
Sulfonamides	Mature chickens	7.964	3508	0.03	300		300		300
Sulfonamides	Lambs	3.255	2912	0.14	300		300		300
Sulfonamides	Formula-fed	2.346	6021	0.10	300		300		300
Sulfonamides	Boars/Stags	1.724	2760	0.80	230	+2	460	max. 300	300
Sulfonamides	Ducks	1.559	2419	0.08	230		230		230
Sulfonamides	Bob calves	0.577	4459	0.70	230	+2	460	max. 300	300
Sulfonamides	Mature turkeys	0.558	2218	0.50	230	+1	300		300
Sulfonamides	Horses	0.453	1573	0.25	230		230		230
Sulfonamides	Goats	0.355	2309	0.30	230		230		230
Sulfonamides	Heavy calves	0.237	3475	0.17	230		230		230
Sulfonamides	Roaster pigs	0.161	NT	NT	230	+1	300		300
Sulfonamides	Other fowl - ratites	0.118	NT	NT	90	+1	230		230
Sulfonamides	Non-formula	0.093	3028	0.59	90	+1	230		230
Sulfonamides	Other livestock - bison	0.078	NT	NT	90	+1	230		230
Sulfonamides	Geese	0.024	531	0.19	90		90		90
Sulfonamides	Squab		NT	NT	45		45		45
TOTAL # SAMPLES					**7105**		**8285**		**6845**

Table 4.6 - *Continued*
Adjusted Number of Analyses for Each Veterinary Drug Compound/Production Class Pair, "Full Resource" Sampling
2000 FSIS NRP Monitoring Plan and Special Projects

COMPOUND CLASS	PRODUCTION CLASS	SCORE	# SAMP.	%VIOL.	UNADJ. #	ADJUST-MENT	INITIAL ADJ.#	ADJUST-MENT	FINAL ADJ.#
Arsenicals	Young chickens	321.640	3113	0.42	460		460	+740	1200
Arsenicals	Market hogs	193.819	2541	0.00	460	-1	300		300
Arsenicals	Young turkeys	56.861	2502	0.20	460		460		460
Arsenicals	Egg products	23.934	NT	NT	300	+1	460		460
Arsenicals	Beef cows	16.712	765	0.13	300		300		300
Arsenicals	Sows	6.744	1012	0.00	300	-1	230		230
Arsenicals	Mature chickens	5.973	1344	0.00	300	-1	230		230
Arsenicals	Boars/Stags	1.293	871	0.00	230	-1	90		90
Arsenicals	Ducks	1.170	142	0.00	230		230		230
Arsenicals	Mature turkeys	0.419	724	0.00	230	-1	90		90
Arsenicals	Goats	0.266	944	0.64	230	+1	300		300
Arsenicals	Roaster pigs	0.121	NT	NT	90	+1	230		230
Arsenicals	Geese	0.0181	259	0.39	90		90		90
TOTAL # SAMPLES					**3680**		**3470**		**4210**

Key:
#SAMP. = Total number of samples analyzed by the FSIS Monitoring Plan and/or Special Projects (i.e., random sampling only), 1/1/90 - 12/31/99.
%VIOL. = Percent violative, i.e., 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).
UNADJ.# = Unadjusted number of samples, obtained from last column of Table 4.7.
INITIAL ADJ.# = Number of samples proposed following adjustment for historical violation rate information or lack of testing information.
FINAL ADJ.# = Finalized sample numbers, obtained following any adjustments needed to match sample volume to laboratory capacity.
NT = Not Tested.
+1 level, +2 levels, -1 level = There are four different sampling levels: 90, 230, 300 and 460 (five for antibiotics: 90, 230, 300, 460, and 690). Sampling levels were increased or decreased (e.g., changed from 300 samples to 230 samples) based on the rules described in Section 4.
NO ADJ = As explained in Section 4, the number of samples taken from geese is limited to 90 per compound class per year, and thus this number could not be adjusted upward based on the rules applied to the other production class.