

National Residue Program Quarterly Report (July – September 2024)

National Residue Program

In FY 2024 Q4, nine analytical methods were used by FSIS to detect approximately 260 different veterinary drugs, pesticides, and environmental contaminants. Accompanying this report is an Excel spreadsheet. This sheet includes detailed information regarding samples taken by FSIS in both the residue domestic scheduled and inspector-generated sampling programs, in addition to the residue import sampling program results. Additionally, the excel sheet includes quarterly metals and per- and polyfluorinated alkyl substances (PFAS) results. Key observations are below.

Surveillance Sampling Plan

Specified slaughter subclasses are sampled at the time of slaughter, after a carcass has passed antemortem inspection. Of the 1,482 samples analyzed by FSIS (1,420 from U.S. Federal plants and 62 from U.S. State inspected plants), 8 samples contained violative chemical residues. In total, more than 361,000 chemical residue analyses were conducted on the 1,482 samples collected under the surveillance sampling plan.

Table 1: Summary of FY 2024 Q4 Surveillance Sampling Results

FY 2024 Q4 summary of surveillance sampling results from FSIS inspector-collected muscle, kidney, and liver tissue from carcasses and parts is shown.

Animal Category	Animal Class	Total Number of Samples Planned for FY 2024	Number of Samples Analyzed this Quarter			
			Total Samples ¹	Number of Non-Detect Samples	Number of Non-Violative Positives Samples	Number of Violative Samples
Bovine	Beef Cows	800	190	189	1	-
	Bob Veal	400	72	70	-	2
	Dairy Cows	800	194	189	4	1
	Formula-Fed Veal	75	21	21	-	-
	Heifers	400	117	116	-	1
	Non-Formula-Fed Veal	75	14	14	-	-
	Steers	400	105	102	2	1
Porcine	Feral Swine	75	18	18	-	-
	Market Swine	800	156	153	2	1
	Sows	800	203	202	1	-
Poultry	Young Chickens	400	108	106	2	-
	Young Turkeys	400	94	94	-	-
Other Species	Goats	300	77	76	-	1
	Lambs	100	24	23	1	-
	Sheep	100	22	20	1	1
	<i>Siluriformes</i> (Catfish)	200	49	49	-	-
	Egg Products	100	18	18	-	-
Quarter Total		6,225	1,482	1,460	14	8

¹ For raw product, a sample is a representative portion of a meat, poultry, or egg product collected to identify potential microbiological, chemical, or pathological hazards.

Table 2: FY 2024 Q4 Number Collected NRP Surveillance Sampling Residues by Chemical Methods

FY 2024 Q4 number collected surveillance sampling residue sampling summary is shown reflecting the number of samples (carcasses) analyzed per chemical method per animal class.

Animal Category	Animal Class	Aminoglycosides	Antifungal Dyes	Metals	MRM ¹	MEGA ²	Pesticides	Nitrofurans	PFAS ³
Bovine	Beef Cows	190	-	20	188	2	142	-	-
	Bob Veal	72	-	28	71	1	58	-	-
	Dairy Cows	194	-	25	194	-	104	-	-
	Formula-Fed Veal	21	-	-	21	-	11	-	-
	Heifers	117	-	30	116	1	95	-	-
	Non-Formula-Fed Veal	14	-	-	14	-	6	-	-
	Steers	105	-	33	105	-	86	-	-
Porcine	Feral Swine	-	-	-	-	1	18	-	-
	Market Swine	156	-	24	153	3	125	-	-
	Sows	203	-	25	199	4	167	-	-
Poultry	Young Chickens	108	-	36	107	1	90	-	-
	Young Turkeys	94	-	34	92	2	79	-	-
Other Species	Goats	77	-	-	76	1	4	-	-
	Lambs	24	-	-	23	1	21	-	-
	Mature Sheep	22	-	-	21	1	19	-	-
	<i>Siluriformes</i> (Catfish)	-	32	35	49	-	36	13	31
	Egg Products	-	-	-	17	1	18	-	-
Quarter Total		1,397	32	290	1,446	19	1,079	13	31

¹ MRM: multiresidue method

² MEGA: multiresidue method

³ PFAS: polyfluoroalkyl substances

Table 3. FY 2024 Q4 Surveillance Sampling Residue Violations

List of FY 2024 Q4 surveillance sampling residue violations, including specific compound, concentration, tolerance, and regulatory citation by animal class is shown.

Animal Class	Tissue	Compound	Concentration	Units	Tolerance Level Value	Authority (CFR Citation)
Bob Veal	Muscle	Ciprofloxacin	--	--	--	Not Approved ^{/1/}
	Muscle	Enrofloxacin	--	--	--	Not Approved ^{/1/}
	Muscle	Meloxicam	--	--	--	Not Approved ^{/1/}
Dairy Cow	Liver	Flunixin	0.534	ppm	0.125 ppm	21 CFR 556.286
Goat	Muscle	Tulathromycin	--	--	--	Not Approved ^{/1/}
Heifer	Muscle	Piperonyl Butoxide	0.259	ppm	0.1 ppm	40 CFR 180.127
Market Swine	Muscle	Lasalocid	--	--	--	Not Approved ^{/1/}
Sheep	Kidney	Oxytetracycline	90.0	ppm	--	Not Approved ^{/1/}
Steer	Muscle	Piperonyl Butoxide	0.149	ppm	0.1 ppm	40 CFR 180.127

* Violative residue results were detected but not quantified.

^{/1/}Not Approved: the residue detected is not approved in that tissue for the animal class.

ppm – parts per million (mg/kg)

ppb – parts per billion (µg/kg)

CFR – Code of Federal Regulations

Inspector-Generated Sampling Plan

FSIS inspectors conduct inspector-generated sampling when they suspect that animals presented for slaughter may have violative levels of chemical residues. If an inspector suspects that there is misuse of drugs that cannot be detected by the KIS™ test, the samples are sent directly to the laboratory for appropriate analysis. These samples are reported under the Inspector-Generated program. If an inspector suspects that there is misuse of drugs that cannot be detected by the KIS™ test, the samples are sent directly to the laboratory for appropriate analysis. These samples are reported under the Collector-Generated program.

In FY 2024 Q4, of the 24,366 Kidney Inhibition Swab (KIS™) tests conducted on animals selected by FSIS (Table 4), 355 samples were submitted to FSIS field laboratories for further analysis. In total, 58 chemical residue violations were reported in 53 samples (Table 5). Due to multiple analyses per sample submitted, multiple residue violations may be found in the same sample. The predominant violative residues in the inspector-generated samples were Desfuroylceftiofur (23), Penicillin (12), and Ciprofloxacin (5), which account for 43%, 23%, and 9% of total violative residues, respectively.

Table 4. Summary of FY 2024 Q4 Inspector-Generated Sampling (KIS™) Test and Confirmatory Tests

FY 2024 Q4 summary of KIS™ tests, number of in-plant screens with negative results, number of carcasses sent to FSIS laboratory for confirmation, and the number of carcasses (i.e., samples) with violations for each animal class.

Animal Category	Animal Class	KIS™ Test			
		Total Number of In-plant Carcasses	Number of In-plant Negative Carcasses	Number of Samples Analyzed in FSIS Labs	Number of Samples with Confirmed Lab Violations
Bovine	Beef cows	2073	2014	44	8
	Bob Veal	1214	1208	3	2
	Bulls	330	311	12	1
	Dairy Cows	15286	14965	211	33
	Formula-fed Veal	23	23	-	-
	Heavy Calves	47	43	2	-
	Heifers	753	735	17	4
	Non-Formula-fed Veal	15	13	-	-
Porcine	Steers	1485	1431	43	5
	Boar/Stag Swine	16	16	-	-
	Market Swine	1801	1789	6	-
	Roaster Swine	285	285	-	-
Other Species	Sows	609	597	6	-
	Adult Goats	40	30	6	-
	Goats	5	5	-	-
	Young Goats	57	56	1	-
	Mature Sheep	74	74	-	-
	Lambs	253	246	4	-
	Quarter Total	24,366	23,841	355	53

Table 5. FY 2024 Q4 Inspector-Generated Sampling Residue Violation Results by Chemical Residue and Animal Class
 FY 2024 Q4 summary of chemical residue violations reported within the inspector-generated sampling.

Chemical Residue	Beef Cow	Bob Veal	Bull/ Stag	Dairy Cow	Heifer	Steer	Non-Formula- fed Veal	Young Goat	Quarter Total
Ampicillin	1	-	-	2	-	-	-	-	3
Ciprofloxacin	-	-	-	-	1	4	-	-	5
Desfuroylceftiofur	2	1	-	16	3	1	-	-	23
Doramectin	-	-	-	-	-	1	-	-	1
Florfenicol	1	-	-	-	-	-	-	-	1
Flunixin	1	-	-	2	-	1	-	-	4
Gentamycin Sulfate	-	1	-	-	-	-	-	-	1
Meloxicam	-	-	-	2	-	-	-	-	2
Neomycin	-	-	-	1	-	-	-	-	1
Penicillin	3	-	1	8	-	-	-	-	12
Sulfadimethoxine	-	-	-	3	-	-	-	-	3
Sulfamethazine	-	-	-	-	1	-	-	-	1
Tilmicosin	1	-	-	-	-	-	-	-	1
Quarter Total	9	2	1	34	5	7	0	0	58

Table 6. Summary of FY 2024 Q4 Collected-Generated Sampling

FY 2024 Q4 summary of suspect animal samples sent directly to FSIS laboratory (collected-generated sampling) for appropriate analysis.

Animal Category	Animal Class	Total Samples	Number of Non-Detect Samples	Number of Non-Violative Positives Samples	Number of Violative Samples
Bovine	Beef Cow	8	7	1	-
	Bull/Stag	1	1	-	-
	Dairy Cow	7	7	-	-
	Heifer	9	9	-	-
	Steer	207	200	7	-
Porcine	Market Swine	222	218	4	-
Other	Mature Sheep	3	3	-	-
	Lamb	50	49	-	1
	Adult Goat	2	2	-	-
	Goat	4	4	-	-
	Young Goat	21	21	-	-

In addition to the publication of the quarterly FY 2024 Sampling Summary NRP results, FSIS posts the details of each positive non-violative, and positive violative residue result associated with the NRP sampling program in a spreadsheet format on the FSIS Residue Chemistry website.

This spreadsheet includes detailed information regarding samples collected and analyzed by FSIS under both the “scheduled” sampling and the “inspector-generated” sampling programs. Overall, these data indicate levels of metals in FSIS-regulated product, on average, are relatively low and are not likely to cause a human health concern. FSIS plans to update this spreadsheet on an ongoing basis so as to increase program transparency for all stakeholders. The spreadsheet includes the following data fields: sample collection and reviewed date, the project code, the animal class, tissue type, chemical residue name, concentration values, sample results (whether positive non-violative or positive violative), chemical concentration values (if any) and the CFR reference for each chemical listed.

Import Residue Sampling

Imported meat, poultry, and egg products are sampled through the point-of-entry Import Reinspection Sampling Plan. This verifies that foreign inspection systems in exporting countries are equivalent to U.S. standards. A total of 343 samples were analyzed under this program in FY 2024 Q4. During FY 2024 Q4, there were zero violative import samples. The results are summarized in **Table 7**.

Table 7. Summary of FY 2024 Q4 Residue Sampling of Imported Products

FY 2024 Q4 import residue samples by inspection level and production type.

Product Name and Project Code	Analytical Method	Normal			Increased ^{/1/}		Intensified ^{/2/}		Quarter Total
		Number of Samples Analyzed	Non-Violative Positives Samples	Violative Positive Samples	Number of Samples Analyzed	Non-Violative Positive Samples	Number of Samples Analyzed	Non-Violative Positive Samples	
Imported - Metals IMP METALS	Metals	134	-	-	-	-	-	-	134
Imported - Pesticide IMP PESTICIDE	Pesticides	183	1	-	1	-	-	-	184
Imported Egg Products - Chemistry IMP RESEGG	Pesticides	6	-	-	-	-	-	-	6
Imported Processed Products - Residue Eastern Lab IMP RESPR_EL	Avermectins	4	-	-	-	-	-	-	4
Imported Processed Products - Residue Midwestern Lab IMP RESPR_MWL	Sulfonamides	14	-	-	-	-	-	-	14
Quarter Total		341	1	0	1	0	0	0	342

^{/1/}Increased is a level of reinspection above the normal level that is directed by a FSIS management decision. Under increased reinspection, FSIS may hold, on a case-by-case basis, lots of imported meat, poultry, or egg products pending receipt of a laboratory analysis. If FSIS does not place the product on hold, the importer of record is still required to hold product tested for adulterants by FSIS and is not to allow such product to enter commerce unless and until negative results are received.

¹²Intensified is a level of reinspection that is implemented automatically by the Public Health Information System (PHIS) when a Type of Inspection PHIS task is reported as “Fail.” Under intensified reinspection, FSIS holds the sampled lot at the official import inspection establishment pending receipt of laboratory analysis. The sampled lot is not allowed to move off-site to be held. Intensified is a level of reinspection that is implemented automatically by the Public Health Information System (PHIS) when a Type of Inspection PHIS task is reported as “Fail.” Under intensified reinspection, FSIS holds the sampled lot at the official import inspection establishment pending receipt of laboratory analysis. The sampled lot is not allowed to move off-site to be held.