

# National Residue Program Quarterly Report (January-March 2024)

## National Residue Program

In FY 2024 Q2, 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 1,561 samples analyzed by FSIS (1,511 from U.S. Federal plants and 50 from U.S. State inspected plants), 6 sample contained violative chemical residues. In total, more than 361,000 chemical residue analyses were conducted on the 1,561 samples collected under the surveillance sampling plan.

**Table 1: Summary of FY 2024 Q2 Surveillance Sampling Results**

FY 2024 Q2 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 <sup>1</sup>	Number of Non-Detect Samples	Number of Non-Violative Positives Samples	Number of Violative Samples
Bovine	Beef Cows	800	209	206	2	1
	Bob Veal	400	82	80	1	1
	Dairy Cows	800	220	218	1	1
	Formula-Fed Veal	75	22	22	-	-
	Heifers	400	113	111	2	-
	Non-Formula-Fed Veal	75	7	6	1	-
	Steers	400	111	109	2	-
Porcine	Feral Swine	75	16	16	-	-
	Market Swine	800	229	228	-	1
	Sows	800	166	165	1	-
Poultry	Young Chickens	400	102	102	-	-
	Young Turkeys	400	81	81	-	-
Other Species	Goats	300	80	78	-	2
	Lambs	100	24	23	1	-
	Sheep	100	25	25	-	-
	<i>Siluriformes</i> (Catfish)	200	55	52	3	-
	Egg Products	100	19	19	-	-
Quarter Total		6,225	1,561	1,541	14	6

<sup>1</sup> 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 Q2 Number Collected NRP Surveillance Sampling Residues by Chemical Methods**

FY 2024 Q2 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	Number of Samples Analyzed per Chemical Method							
		Avermectins	Aminoglycosides	Antifungal Dyes	Metals	MRM <sup>1</sup>	Pesticides	Nitrofurans	PFAS <sup>2</sup>
Bovine	Beef Cows	1	209	-	34	209	161	-	-
	Bob Veal	-	82	-	36	82	64	-	-
	Dairy Cows	-	220	-	30	220	169	-	-
	Formula-Fed Veal	-	22	-	-	22	7	-	-
	Heifers	-	113	-	32	113	84	-	-
	Non-Formula-Fed Veal	-	7	-	-	7	2	-	-
	Steers	-	111	-	29	111	86	-	-
Porcine	Feral Swine	-	-	-	-	-	16	-	-
	Market Swine	-	229	-	28	229	180	-	-
	Sows	1	166	-	38	166	131	-	-
Poultry	Young Chickens	-	102	-	36	102	82	-	-
	Young Turkeys	-	81	-	38	81	65	-	-
Other Species	Goats	2	80	-	-	80	5	-	-
	Lambs	2	24	-	-	24	19	-	-
	Mature Sheep	-	25	-	-	25	20	-	-
	<i>Siluriformes</i> (Catfish)	-	-	48	48	55	37	7	26
	Egg Products	-	-	-	-	19	19	-	-
Quarter Total		6	1,471	48	349	1,545	1,147	7	26

<sup>1</sup> MRM: multiresidue method

<sup>2</sup> PFAS: polyfluoroalkyl substances

**Table 3. FY 2024 Q2 Surveillance Sampling Residue Violations**

List of FY 2024 Q2 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)
Beef Cow	Muscle	Sulfadimethoxine	0.163	ppm	0.1 ppm	21 CFR 556.640
	Liver	Sulfadimethoxine	0.312	ppm	0.1 ppm	21 CFR 556.640
Bob Veal	Muscle	Ciprofloxacin	--	--	--	Not Approved <sup>/1/</sup>
	Muscle	Enrofloxacin	--	--	--	Not Approved <sup>/1/</sup>
Dairy Cow	Liver	Flunixin	1.95	ppm	0.125 ppm	21 CFR 556.286
Goat	Muscle	Moxidectin	--	--	--	Not Approved <sup>/1/</sup>
	Muscle	Eprinomectin	--	--	--	Not Approved <sup>/1/</sup>
Market Swine	Muscle	Ciprofloxacin	--	--	--	Not Approved <sup>/1/</sup>

\* Violative residue results were detected but not quantified.

<sup>/1/</sup>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 Q2, of the 27,705 Kidney Inhibition Swab (KIS™) tests conducted on animals selected by FSIS (Table 4), 426 samples were submitted to FSIS field laboratories for further analysis. In total, 114 chemical residue violations were reported in 88 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 (31), Penicillin (16), Flunixin (10), and Neomycin (10) which account for 27%, 14%, 9%, and 9% (each) of total violative residues, respectively.

**Table 4. Summary of FY 2024 Q2 Inspector-Generated Sampling (KIS™) Test and Confirmatory Tests**

FY 2024 Q2 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	2478	2416	52	10
	Bob Veal	2237	2206	26	17
	Bulls	242	233	7	-
	Dairy Cows	17228	16892	244	51
	Formula-fed Veal	13	13	-	-
	Heavy Calves	86	80	3	1
	Heifers	1043	1023	19	4
	Non-Formula-fed Veal	24	20	2	1
	Steers	1390	1336	48	3
Porcine	Boar/Stag Swine	13	13	-	-
	Feral Swine	1	1	-	-
	Market Swine	1696	1676	15	-
	Roaster Swine	253	252	1	-
	Sows	720	707	7	-
Other Species	Adult Goats	20	20	-	-
	Goats	3	3	-	-
	Young Goats	53	51	1	1
	Mature Sheep	64	63	1	-
	Lambs	141	141	-	-
	<b>Quarter Total</b>	<b>27,705</b>	<b>27,146</b>	<b>426</b>	<b>88</b>

**Table 5. FY 2024 Q2 Inspector-Generated Sampling Residue Violation Results by Chemical Residue and Animal Class**

FY 2024 Q2 summary of chemical residue violations reported within the inspector-generated sampling.

Chemical Residue	Beef Cow	Bob Veal	Dairy Cow	Heavy Calf	Heifer	Steer	Non-Formula-fed Veal	Young Goat	Quarter Total
Ampicillin	1	-	4	-	-	-	-	-	5
Cefazolin	1	-	-	-	-	-	-	-	1
Ciprofloxacin	-	1	-	-	-	-	-	-	1
Desfuroylceftiofur	2	1	24	1	1	2	-	-	31
Florfenicol	-	-	-	1	1	-	1	-	3
Flunixin	-	2	8	-	-	-	-	-	10
Gentamycin Sulfate	1	-	-	-	-	-	-	-	1
Meloxicam	-	-	4	-	-	-	-	-	4
Neomycin	-	9	1	-	-	-	-	-	10
Oxytetracycline	2	-	2	-	-	-	-	-	4
Penicillin	4	-	10	-	1	1	-	-	16
Spectinomycin	-	1	-	-	-	-	-	-	1
Sulfadiazine	-	2	-	-	-	-	-	-	2
Sulfadimethoxine	-	-	5	-	2	-	-	-	7
Sulfamethazine	1	-	1	-	-	-	-	-	2
Sulfamethoxazole	-	5	-	-	-	-	-	-	5
Sulfanilamide	-	1	-	-	-	-	-	-	1
Sulfathiazole	-	7	-	-	-	-	-	-	7
Tilmicosin	1	-	-	-	-	-	-	-	1
Tulathromycin	-	-	-	-	-	-	-	1	1
Tylosin	-	1	-	-	-	-	-	-	1
<b>Quarter Total</b>	<b>13</b>	<b>30</b>	<b>59</b>	<b>2</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>114</b>

**Table 6. Summary of FY 2024 Q2 Collected-Generated Sampling**

FY 2024 Q2 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
<b>Bovine</b>	Beef Cows	6	4	-	2
	Bulls	1	1	-	-
	Dairy Cows	9	9	-	-
	Non-Formula-fed Veal	1	1	-	-
	Steers	7	5	1	1
<b>Porcine</b>	Market Swine	19	17	1	1
<b>Other</b>	Mature Sheep	1	1	-	-
	Lamb	15	14	1	-
	Young Goat	3	3	-	-

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 248 samples were analyzed under this program in FY 2024 Q2. During FY 2024 Q2, there were zero violative import samples. The results are summarized in **Table 7**.

**Table 7. Summary of FY 2024 Q2 Residue Sampling of Imported Products**

FY 2024 Q2 import residue samples by inspection level and production type.

Product Name and Project Code	Analytical Method	Normal			Increased <sup>/1/</sup>		Intensified <sup>/2/</sup>		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 IMPMETALS	Metals	73	-	-	-	-	-	-	73
Imported - Pesticide IMPPESTICIDE	Pesticides	141	-	-	14	-	-	-	155
Imported Egg Products - Chemistry IMPRESEGG	Pesticides	6	-	-	-	-	-	-	6
Imported Processed Products - Residue Eastern Lab IMPRESPR_EL	Avermectins	3	-	-	1	-	-	-	4
Imported Processed Products - Residue Midwestern Lab IMPRESPR_MWL	Sulfonamides	8	-	-	2	-	-	-	10
<b>Quarter Total</b>		<b>231</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>248</b>

<sup>/1/</sup>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.

<sup>/2/</sup>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. 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.