Food Safety and Inspection Service
Annual Sampling Program Plan
Fiscal Year 2022

United States Department of Agriculture

Food Safety and Inspection Service

Contents

Introduction

The Food Safety and Inspection Service (FSIS) is the food safety regulatory agency within the United States Department of Agriculture (USDA) responsible for ensuring that domestic and imported meat, poultry, and egg products are safe, wholesome, and accurately labeled. Verification activities serve to protect the public from foodborne hazards. A key FSIS inspection verification activity is the sampling and testing of product for microbiological contaminants or chemical residues.

This report identifies changes planned for fiscal year (FY) 2022 to FSIS' various sampling programs and describes the Agency's overall strategy for directing its sampling resources.

Background

FSIS Agency Planning
The FSIS Strategic Plan for FY 2017-2021 includes an objective to strengthen FSIS sampling programs. The planned FY 2022-2026 Strategic Plan and FY 2022 Annual Plan will continue to ensure that sampling allocation remains aligned with Agency goals.

FSIS Process for Scheduling, Collecting, and Analyzing Samples
The Agency's process of scheduling, collecting, and analyzing routine domestic samples typically begins with a sampling task assigned to FSIS inspection program personnel (IPP) through the Public Health Information System (PHIS). The number of sampling tasks IPP can receive at a domestic establishment varies greatly depending on the types and quantities of products produced. Additional non-routine sampling tasks might be assigned to an establishment, or country for imported product sampling, in response to routine results or other establishment performance history. Sampling type of inspection (TOI) tasks are assigned to imported product from each foreign country and product combination based on the number of imported shipments received.

It is important to note there might be a difference between the number of samples that are anticipated to be analyzed and the total number of samples analyzed within the fiscal year. The lack of available products that are eligible for a specific sampling project within the specific sampling tasks' allotted timeframe is one of the biggest challenges IPP face when trying to collect all the samples accounted for in the sampling plan; therefore, the FSIS Annual Sampling Plan is based on the number of samples anticipated to be analyzed instead of those assigned. For those projects that do not have a required monthly frequency, FSIS can adjust the number of samples assigned throughout the year to reach the sample target numbers. Additionally, differences between the planned number and analyzed number of samples may be due to changes in the number of inspected establishments producing eligible products. To collect samples from infrequent producers and optimize the total number of annual planned samples collected and analyzed, FSIS adjusts

the number of samples assigned based on the average number of samples collected throughout the sampling year. The estimates for each sampling program are based on current plans, FSIS policies, and industry practices, and are subject to change over the course of the fiscal year.

After receiving the sampling tasks and verifying eligible product availability, IPP collect and ship the samples to one of three FSIS testing laboratories, where the sample is tested for specified analytes. An analyte is a substance whose constituents are identified and measured, and the FSIS laboratories perform different tests depending on the sampling program and target analytes. The Agency increases sample resource efficiency by maximizing the number of analytes evaluated per sample collection and test.

Data Sharing and Analysis

FSIS routinely analyzes sampling data. The results of these analyses are used in a variety of ways, including verifying whether product is safe and not adulterated; monitoring the effectiveness, where applicable, of Hazard Analysis and Critical Control Point systems; informing Agency policy making; estimating public health impact; and advising strategic and performance planning. FSIS posts most of the sampling data on the Agency's website and shares the data with establishments through quarterly letters, as well as directly sharing sampling results with IPP and establishments.

FSIS engages with Federal partners to use whole genome sequencing (WGS) data for regulatory and public health purposes. FSIS aligns WGS-related projects with the goals and objectives of the FSIS Strategic Plan and other policies. FSIS laboratories perform WGS on all pathogens isolated from FSIS-regulated products. The information gathered from WGS helps FSIS to detect and investigate outbreaks of foodborne illness, identify potential instances of harborage, and identify unique genes, including antimicrobial resistance genes. In FY 2020, FSIS modernized *Salmonella* serotyping by using WGS data to determine the serotype (FSIS Constituent Update, Dec. 6, 2019). This update created efficiencies within the Agency by reducing the number of analyses required to determine the same, if not more, information. Moving forward, FSIS will explore new ways to expand the use of WGS data to support the regulatory and public health efforts of FSIS more effectively. Potential future efforts include exploring how to use genomic data to assess pathogen adaptability and persistence as well as the potential for pathogenicity and virulence of *Salmonella*. These efforts will build on public health, regulatory, and research partners' efforts in support of FSIS Research Priorities.

Microbiological and Chemical Residue Sampling Planned Changes from FY 2020 to FY 2022

Table 1 and Table 2 summarize microbiological and chemical residue programs, respectively, the total planned number of analyses and corresponding planned number of analytes tested for during FY 2020, FY 2021, and FY 2022 by product class. Data is based on the proposed number of samples and actual analyses performed during the previous fiscal years. Results for the fiscal year can be found in FSIS' Annual Sampling Summary Report. A link to past years' reports can be found in the References section.

Table 1: Planned Number of Microbiological Analyses (Tests) and Analytes FY 2020-FY 2022

Product Class	Planned for FY 2020			Planned for FY 2021			Planned for FY 2022			Difference[1] (FY 2022-FY 2021)		
	Samples Planned	Tests Planned	Analytes Planned	Samples Planned	Tests Planned	Analytes Planned	Samples Planned	Tests Planned	Analytes Planned	Samples Planned	Tests Planned	Analytes Planned
Raw Beef	18,762	49,416	94,488	19,233	51,240	99,336	19,999	54,456	112,632	**766**	**3,216**	**13,296**
Raw Pork	11,040	22,080	33,120	11,040	22,080	33,120	11,040	22,080	33,120	**0**	**0**	**0**
Raw Poultry	47,736	64,416	64,416	47,892	64,248	64,248	47,892	64,248	64,248	**0**	**0**	**0**
Raw Siluriformes	660	660	660	660	660	660	660	660	660	**0**	**0**	**0**
RTE/Eggs — RTE	15,919	29,616	29,616	15,919	29,616	29,616	15,919	29,616	29,616	**0**	**0**	**0**
RTE/Eggs — *RLm*	5,437	5,437	5,437	5,437	5,437	5,437	5,437	5,437	5,437	**0**	**0**	**0**
RTE/Eggs — Eggs	1,600	3,200	3,200	1,600	3,200	3,200	1,600	3,200	3,200	**0**	**0**	**0**
NARMS	7,780	18,600	443,100	7,780	18,600	443,100	7,480	17,700	412,144	**-300**	**-900**	**-30,956**
Imports[2]	6,804	14,976	29,376	6,312	13,884	27,893	6,312	13,884	27,893	**0**	**0**	**0**
Total	**115,738**	**208,391**	**703,413**	**115,873**	**208,616**	**706,741**	**116,339**	**211,281**	**688,950**	**466**	**2,316**	**-17,660**

Abbreviations: RTE, ready-to-eat; *RLm*, Routine *Listeria monocytogenes* monitoring; NARMS, National Antimicrobial Resistance Monitoring System.

[1] The differences between FY 2021 and FY 2022 plans include additional sampling for establishments selected for exploratory sampling, and cessation of the NARMS mesenteric lymph node sampling programs. For a full list of allocation changes, please see Table 4.

[2] Import microbiology testing analyses estimates are driven by expected shipment frequency and volume-based TOI assignments.

Table 2: Planned Number of Chemical Residue Analyses and Analytes Reported FY 2020-FY 2022

Product Class	Planned for FY 2020			Planned for FY 2021			Planned for FY 2022			Difference[3] (FY 2022-FY 2021)		
	Samples Planned	Tests Planned	Analytes Planned	Samples Planned	Tests Planned	Analytes Planned	Samples Planned	Tests Planned	Analytes Planned	Samples Planned	Tests Planned	Analytes Planned
Domestic Residues												
Beef Cows	712	3,240	121,320	752	2,646	132,678	752	2,268	130,788	0	-378	-1,890
Bob Veal	356	1,620	60,660	400	1,428	71,604	400	1,224	70,584	0	-204	-1,020
Dairy Cows	712	3,240	121,320	788	3,152	144,992	788	2,376	137,016	0	-776	-7,976
Heifers	356	1,620	60,660	340	1,218	61,074	340	1,044	60,204	0	-174	-870
Steer	356	1,620	60,660	328	1,176	58,968	328	1,008	58,128	0	-168	-840
Sows	712	2,160	111,600	788	3,152	144,992	788	2,772	143,748	0	-380	-1,244
Market Swine	712	2,880	119,880	728	2,912	133,952	728	2,562	132,858	0	-350	-1,094
Young Chickens	356	1,030	55,440	394	1,182	53,190	394	1,584	72,270	0	402	19,080
Whole Chickens	356	1,030	55,440	394	1,576	90,620	394	1,584	72,270	0	8	-18,350
Young Turkeys	712	2,160	110,880	788	2,772	137,808	788	2,772	137,808	0	0	0
Sheep	100	357	16,728	100	300	16,728	100	300	16,728	0	0	0
Lamb	100	357	16,728	100	300	16,728	100	300	16,728	0	0	0
Goats	300	900	35,100	300	600	35,100	300	600	35,100	0	0	0
Roaster Swine	300	300	300	300	150	150	300	150	150	0	0	0
Veal - Other	150	640	19,890	150	588	29,484	150	504	29,064	0	-84	-420
Egg Product	250	500	37,296	250	500	38,637	250	504	39,139	0	4	502
Siluriformes	650	2,130	103,290	650	2,455	116,075	650	2,640	116,160	0	185	85
State-Inspected Establishment Sampling for U.S. National Residue Program[1]	720	2,760	128,208	300	1,050	52,614	300	960	52,740	0	-90	126
Other												
Imports[2]	4,000	20,076	773,892	3,400	18,276	675,805	3,400	17,688	689,857	0	-588	14,052
KIS™	4,000	8,000	424,000	4,000	8,000	468,936	4,000	8,000	468,936	0	0	0
Total	**15,910**	**56,620**	**2,433,292**	**15,250**	**53,433**	**2,480,135**	**15,250**	**50,840**	**2,480,276**	**0**	**-2593**	**141**

Abbreviation: KIS™, Kidney Inhibition Swab.

[1] State sampling adjusted to reflect number of eligible State establishments.

[2] Import residue testing analyses estimates are driven by expected shipment frequency and volume-based TOI assignments.

[3] The differences between the FY 2021 and FY 2022 plans include: Replacing the stand-alone B-agonist screen with the updated multiresidue method (MRM) reduced the number of tests needed and resulting analytes from that additional test because B-agonist testing is now included in the updated MRM method.

Significant Changes for the FY 2022 Plan

Table 3 lists key priorities FSIS plans to implement in FY 2022. Each row describes the challenges that the Agency faces moving into FY 2022, what process is impacted and the objective(s) to achieve during the fiscal year. This table will also include modifications that may have taken place during FY 2021 after the FY 2021 Plan was published.

Table 3: FY 2022 Sampling Priorities

FY 2022 Modification	Impacted Sampling, Related Process, or Analyte	Description of Modification Implemented
Changes to the National Residue Program (NRP)	Beta agonist method	• Improvements to the multi-residue veterinary drug method (MRM) now include all analytes normally screened in the stand-alone Beta agonist method. FSIS will replace the stand-along B-agonist screening method with the MRM method.
Availability of new rapid pathogen enumeration methods	Pathogen Enumeration	• FSIS will evaluate newly available, rapid enumeration methods.

Table 4 lists each sampling program and includes a description of that program, whether changes were made to sampling allocations for each program, and the Agency's reasoning for the changes. The rationale is included for sampling number allocations changes between FY 2021 and FY 2022 sampling plans. Some sampling program allocations did not change as the Agency continues to verify these commodities to ensure effective and efficient food safety verification to protect consumers. There are changes under consideration not noted within this plan because they are going through governance. These changes will be announced throughout the year separately as they become approved.

Table 4: Rationale for Changes in Sampling Allocations

Sampling by Program/Commodity	Program Description	Rationale for Any Changes from the FY 2021 Sampling Allocations
Beef Products	• FSIS conducts Shiga toxin-producing *E. coli* (STEC) sampling for product produced in domestic establishments, imported products, and retail. • Raw non-intact beef products and raw beef products intended for raw non-intact use are eligible for sampling, including ground beef, bench trim, beef manufactured trimmings, and other raw ground beef components. • FSIS analyzes all raw beef products collected under the routine and follow-up sampling programs, including raw ground beef, bench trim, beef manufactured trimmings, and other raw ground beef components for *E. coli* O157:H7 and *Salmonella*. Additionally, FSIS analyzes beef manufacturing trimmings for non-O157 STEC as well.	• Increased allocations for exploratory beef carcass sampling (pre- and post-evisceration) by 208 samples due to additional establishment(s) selected for exploratory project. • Expand non-O157 STEC analysis to all raw beef products analyzed for *E. coli* O157:H7 • Continue to collect MT60_CLOTH samples and evaluate the cloth surface sampling method compared to N60 pathogen detection while conducting an in-lab study to optimize recovery using the cloth. • Investigate options for enumeration of positive *E. coli* O157:H7 and *Salmonella* samples.
Pork Products	• FSIS analyzes raw intact, non-intact, and comminuted domestic and imported pork for *Salmonella*.	• No allocation changes planned for FY 2022. • Investigate the options for enumeration of positive *Salmonella* samples.

Sampling by Program/Commodity	Program Description	Rationale for Any Changes from the FY 2021 Sampling Allocations
Poultry Products	• FSIS analyzes young chicken and turkey carcasses, comminuted chicken and turkey, and chicken parts samples for *Salmonella* and *Campylobacter*.	• No allocation changes planned at this time. • Evaluate options for enumeration of samples positive for S*almonella* and *Campylobacter*.
Siluriformes	• FSIS analyzes raw fish of the order Siluriformes for *Salmonella*.	• No allocation changes planned for FY 2022.
Ready-To-Eat (RTE): Meat, Poultry, and Egg Products	• FSIS conducts microbiological testing for *Listeria monocytogenes* (*Lm*) and *Salmonella* in both domestically produced and imported egg products in addition to other RTE products. • Product sampling is scheduled every month under random sampling and risk-based sampling projects under 2 RTEPROD projects. • R*Lm* sampling program is performed in establishments producing post-lethality exposed RTE product. An R*Lm* sampling event includes samples, consisting of product, contact surfaces, and the processing environment, collected and sampled for *Lm* under 3 R*Lm* project codes. • Intensified Verification Testing (IVT) is performed whenever an eligible establishment has a positive sample collected under the R*Lm* sampling program projects, or either one of the RTEPROD sampling projects.	• Investigate the options for enumeration of positive *Lm* and *Salmonella* samples.

Sampling by Program/Commodity	Program Description	Rationale for Any Changes from the FY 2021 Sampling Allocations
National Residue Program (NRP)	• The NRP sampling plan guides the collection of domestic and imported meat, poultry, and egg product samples. The domestic sampling plan includes surveillance sampling, inspector-generated, and special project sampling in both Federal and State-inspected slaughter establishments. • FSIS IPP perform inspector-generated sampling (KIS) in livestock slaughter species as per FSIS Directive 10,800.1. Per this directive, a positive sample is submitted to the FSIS laboratory for confirmatory testing.	• No allocation changes for FY 2022.

Sampling by Program/Commodity	Program Description	Rationale for Any Changes from the FY 2021 Sampling Allocations
Import Sampling	• FSIS analyzes imported raw beef for *E. coli* O157:H7 and *Salmonella*. • FSIS analyzes imported beef manufacturing trimmings for non-O157 STEC, which includes the following six O-antigen groups: O26, O45, O103, O111, O121, and O145. • FSIS analyzes imported poultry for *Salmonella* and *Campylobacter*. • FSIS analyzes imported raw pork products for *Salmonella*. • FSIS analyzes imported RTE and egg products for *Lm* and *Salmonella*. • FSIS analyzes imported raw fish of the order Siluriformes for *Salmonella*. • FSIS analyzes imported raw meat, poultry products, processed products, and, including imported Siluriformes products for chemical residues.	• No allocation changes for FY 2022.

Sampling by Program/Commodity	Program Description	Rationale for Any Changes from the FY 2021 Sampling Allocations
NARMS Cecal and Expansion Project Sampling	• FSIS analyzes cecal content from beef, swine, young chicken, turkeys, veal, sheep, goat, and lamb for the presence of *Salmonella, Campylobacter,* generic *E. coli,* and *Enterococcus* to monitor trends in antimicrobial resistance. • FSIS analyzes Siluriformes for the presence of generic *E. coli* and *Enterococcus.* • FSIS analyzes cattle mesenteric lymph nodes for the presence of *Salmonella*.	• Discontinue NARMS mesenteric lymph node sampling in beef (300 samples).
Other Sampling	• FSIS performs verification of species claims on domestic and imported product. • FSIS performs label verification sampling for certain labeling claims on domestic product.	• No allocation changes for FY 2022.

Appendices A–C outline the sampling plan grouped by product group and broken out by the individual sampling programs. Information for changes from previous years is provided in the preceding tables. Totals in the appendices' tables have been rounded. Each table contains the following information:

1. Planned number of samples to be analyzed in FY 2021;
2. Number of samples actually analyzed in FY 2021; and
3. Planned number of samples to be analyzed in FY 2022.

Appendix A: Microbial Sampling Numbers by Product

This appendix summarizes the number of samples in FSIS' microbiological sampling program and presents the number of samples planned and actually analyzed in FY 2021, and the number of samples planned to be analyzed in FY 2022, by product type. Raw products are presented first, beginning with beef (Table A2), followed by pork (Table A3), fish of the order Siluriformes (Table A4) and poultry (Table A5). Ready-to-eat (RTE), not ready-to-eat (NRTE), and egg product sampling numbers are presented in Table A6.

Table A1 is a quick reference guide of the microbiological analytes by various FSIS regulated products in FY 2022. For a more in-depth review, the tables in Appendix A contain the stratification of the different analytes by product classes.

Table A1: Summary of Analyte tested by Product

| Product | Microbiological Analyte | | | | | |
	Salmonella	Campylobacter	L. monocytogenes	E. coli O157:H7	Non-O157 STEC	Indicator Organisms
Raw Beef	√			√	√[1]	√[2]
Raw Pork	√					√[2]
Raw Siluriformes	√					
Raw Poultry	√	√				
RTE Products	√		√			
Egg Products	√		√			

[1] Only domestic raw beef manufacturing trim and imported raw beef trim. All other raw beef products are tested for *Salmonella* and *E. coli* O157:H7 only.
[2] Dependent upon the program as not all beef and pork projects are analyzed for indicator organisms.

Table A2: FY 2021 and FY 2022 Sample Numbers for Raw Beef

Product Class	Sampling Project Code	Pathogen(s)	Number of Samples FY 2021		Number of Samples FY 2022
			Planned	Actual	Planned
Raw ground beef	MT43	*E. coli* O157:H7 and *Salmonella*	11,500	10,990	11,500
Follow-up testing to a ground beef *E. coli* positive[1]	MT44 and MT44T	*E. coli* O157:H7 and *Salmonella*	TBD	53	TBD
Raw ground beef components other than trim	MT64	*E. coli* O157:H7 and *Salmonella*	1,250	1,354	1,250
Bench trim	MT65	*E. coli* O157:H7 and *Salmonella*	1,500	1,356	1,500
Beef manufacturing trim	MT60	*E. coli* O157:H7, Non-O157 STEC and S*almonella*	4,000	3,833	4,000
Follow-up testing at supplier establishments following MT43, MT44, or MT65 positive[1]	MT52	*E. coli* O157:H7, Non-O157 STEC and *Salmonella*	TBD	34	TBD
Follow-up testing to an MT60, MT64, MT65, or MT52 positive[1]	MT53	*E. coli* O157:H7, Non-O157 STEC and *Salmonella*	TBD	549	TBD
Raw ground beef at retail stores	MT05	*E. coli* O157:H7 and *Salmonella*	500	520	500
Follow-up testing to a MT05 sample[1]	MT06	*E. coli* O157:H7 and *Salmonella*	TBD	0	TBD
Imported raw ground beef[2]	MT08	*E. coli* O157:H7 and *Salmonella*	50	43	50
Imported trim and other raw ground beef components[2]	MT51	*E. coli* O157:H7, Non-O157 STEC and *Salmonella*	1,200	1,962	1,200
Exploratory beef carcasses pre-evisceration[3]	MT_PSTHR	*Salmonella* and Indicator Organisms (Aerobic Count)	208	186	416
Exploratory beef carcasses post-interventions[3]	MT_PRECH	*Salmonella* and Indicator Organisms (Aerobic Count)	208	186	416

[1] Dependent on positive findings from other *E. coli* O157:H7 or non-O157 STEC sampling projects.

[2] Lab sampling for imports depends on the number of shipments received by country and the product.

[3] Allocations for these sampling projects can fluctuate depending on how many establishments are eligible and selected for the project.

Table A3: FY 2021 and FY 2022 Sample Numbers for Raw Pork

Product Class	Sampling Project Code	Pathogen(s)	Number of Samples FY 2021		Number of Samples FY 2022
			Planned	Actual	Planned
Comminuted Pork	HC_PK_COM01	*Salmonella* and Indicator Organisms (Aerobic Count)	8,640	6,330	8,640
Intact and Non-Intact Cuts	HC_PK_CUT01	*Salmonella* and Indicator Organisms (Aerobic Count)	2,400	2,248	2,400
Imported Pork[1]	IMP_PORK	*Salmonella*	400	434	400

[1] Sampling for imports depends on the number of shipments received by country and product.

Table A4: FY 2021 and FY 2022 Sample Numbers for Raw Siluriformes

Product Class	Sampling Project Code	Analyses	Number of Samples FY 2021		Number of Samples FY 2022
			Planned	Actual	Planned
Domestic Raw Fish of the Order Siluriformes	EXP_FI_MIC01	*Salmonella*	650	583	650
Imported Raw Fish of the Order Siluriformes[1]	IMPFISH_MI	*Salmonella*	700	835	700

[1] Sampling for imports depends on the number of shipments received by country and product. Higher than expected *Siluriformes* shipments received in FY21 resulted in increase in samples analyzed.

Table A5: FY 2021 and FY 2022 Sample Numbers for Raw Poultry

Product Class	Sampling Project Code	Pathogen(s)	Number of Samples FY 2021		Number of Samples FY 2022
			Planned	Actual	Planned
Young Chicken Carcasses	HC_CH_CARC01	*Salmonella, Campylobacter*	9,630	9,667	9,630
Ground and Other Comminuted Chicken (not Mechanically Separated)	HC_CH_COM01	*Salmonella, Campylobacter*	2,500	2,057	2,500

Product Class	Sampling Project Code	Pathogen(s)	Number of Samples FY 2021		Number of Samples FY 2022
			Planned	Actual	Planned
Exploratory - Mechanically Separated Chicken	EXP_CH_MSK01	*Salmonella, Campylobacter*	150	122	150
Chicken Parts – Legs, Breasts, Wings	HC_CPT_LBW01	*Salmonella, Campylobacter*	16,300	14,093	16,300
Chicken Parts – Quarters, Halves	EXP_CPT_QH01	*Salmonella, Campylobacter*	120	81	120
Turkey Carcasses	HC_TU_CARC01	*Salmonella, Campylobacter*	1,730	1,711	1,730
Ground and Other Comminuted Turkey (not Mechanically Separated)	HC_TU_COM01	*Salmonella, Campylobacter*	1,500	1,395	1,500
Exploratory - Mechanically Separated Turkey	EXP_TU_MSK01	*Salmonella, Campylobacter*	150	111	150
Imported Raw Intact Chicken and Turkey[1]	IMP_POULTRY	*Salmonella, Campylobacter*	800	830	800
NPIS Fowl Carcass Exploratory	HC_HF_CAR01	*Salmonella, Campylobacter*	240	173	240
Follow-up Sampling for Chicken Parts, Carcasses, Comminuted Chicken and Turkey[2]	F_CPT_LBW01 F_CH_COM01 F_TU_COM01 F_CH_CARC01 F_TU_CARC01	*Salmonella, Campylobacter*	TBD	1,663	TBD

[1] Sampling for imports depends on the number of shipments received by country and product.
[2] Dependent on findings from other *Salmonella* and *Campylobacter* projects.

Table A6: FY 2021 and FY 2022 Sample Numbers for RTE, NRTE, and Egg Products

Product Class	Sampling Project Code	Pathogen(s)	Number of Samples FY 2021		Number of Samples FY 2022
			Planned	Actual	Planned
Both post lethality-exposed and non-post lethality-exposed RTE products	RTEPROD_RAND	*Lm, Salmonella*	7,400	6,907	7,400
Post lethality-exposed RTE products	RTEPROD_RISK	*Lm, Salmonella*	7,400	7,844	7,400

Product Class	Sampling Project Code	Pathogen(s)	Number of Samples FY 2021		Number of Samples FY 2022
			Planned	Actual	Planned
R*Lm* product samples (composited 5-sample units)	RLMPRODC	*Lm*	423 (2,125)[2]	269(1,345)[2]	422(2,110)[2]
R*Lm* food contact surface samples	RLMCONT	*Lm*	4,218	2,692	4,220
R*Lm* non-food contact environmental samples (composited 5-sample units)	RLMENVC	*Lm*	423 (2,125)[2]	270(1,350)[2]	422(2,110)[2]
Intensified Verification Testing (IVT) product samples[1]	INTPROD	*Lm* or *Salmonella*	TBD	380	TBD
IVT food contact surface samples[1]	INTCONT	*Lm* or *Salmonella*	TBD	736	TBD
IVT non-food contact environmental samples[1]	INTENV	*Lm* or *Salmonella*	TBD	400	TBD
Imported intact RTE product[3]	IMVRTE	*Lm, Salmonella*	3,000	3,172	3,000
Egg Products	EGG_DY_MIC01 EGG_LQ_MIC01	*Lm, Salmonella*	1,600	1,492	1,600
Pasteurized imported liquid, frozen, or dried egg products	EGGIMP	*Lm, Salmonella*	120	102	120

Abbreviations: RTE, ready-to-eat; NRTE, not-ready-to-eat.

[1] Dependent on positive findings from RTEPROD_RAND, RTEPROD_RISK, and R*Lm* sampling projects.

[2] The number in parenthesis represents the number of samples collected by FSIS Office of Field Operations (OFO) IPP to generate the composite number of samples planned.

[3] Sampling for imports depends on the number of shipments received by country and product.

Appendix B: Chemical Residue Sampling Numbers by Product

This appendix summarizes the numbers of samples in FSIS' chemical residue sampling program for FY 2021 and FY 2022. Chemical residues can include both drug residues and environmental contaminants. Table B1 presents the number of samples by production class. Tables B2 and B3 present the number of analyses performed by method used in each production class broken out by domestic and import sampling.

Table B1: FY 2021 and FY 2022 Sample Numbers for Chemical Residues

Production Class	Sampling Project Code	Number of Samples FY 2021		Number of Samples FY 2022
		Planned	Actual	Planned
Beef Cows	NRP_BC	752	787	752
Beef Cow – State[1]	NRP_BC_S	48	34	48
Bob Veal	NRP_BV	400	330	400
Bob Veal – State[1]	NRP_BV_S	0	0	0
Dairy Cows	NRP_DC	788	803	788
Dairy Cows – State[1]	NRP_DC_S	12	15	12
Heifers	NRP_HF	340	369	340
Heifers – State[1]	NRP_HF_S	60	46	60
Steer	NRP_ST	328	354	328
Steer – State[1]	NRP_ST_S	72	70	72
Market Swine	NRP_MS	728	752	728
Market Swine – State[1]	NRP_MS_S	72	57	72
Sows	NRP_SW	788	723	788
Sows – State[1]	NRP_SW_S	12	17	12
Young Chicken	NRP_YC	394	418	394
Young Chicken – State[1]	NRP_YC_S	12	11	12
Whole Chicken	NRP_WC	394	393	394
Young Turkey	NRP_YT	788	829	788
Young Turkey – State[1]	NRP_YT_S	12	5	12
Sheep	NRP_SH	100	105	100
Lambs	NRP_LA	100	95	100
Goats	NRP_GO	300	309	300
Roaster Swine	NRP_RS	300	311	300
Veal other than bob veal	NRP_FFV, NRP_NFFV	150	123	150
Feral Swine	NRP_FS	75	63	75
Egg Products	NRP_EG	250	188	250
Siluriformes – Domestic	RES_FI	650	609	650

| Production Class | Sampling Project Code | Number of Samples FY 2021 | | Number of Samples FY 2022 |
		Planned	Actual	Planned
Siluriformes – Imports[2]	IMPFISH_CH_E and IMPFISH_CH_W	700	1,728	700
KIS™ Test[3]	KIS	NA	154,790	NA
KIS™ Test – Laboratory Confirmation[4]	KIS	NA	1,999	NA
Collector Generated Residues	Various	NA	147	NA
Import Residue	Various	2,000	2,032	2,000

Abbreviations: KIS™, Kidney Inhibition Swab; NA, non-applicable.

[1] FSIS updated allocations for State establishments, which are part of the State meat and poultry inspection program, that produce the same species as those at federally inspected establishments to be based off the number of qualifying establishments and not a standard percentage as done previously.

[2] Sampling for imports depends on the number of shipments received by country and product. Higher than expected *Siluriformes* shipments received in FY 2021 resulted in increase in samples analyzed.

[3] These KIS™ tests are performed by FSIS IPP in the field and not by the laboratories.

[4] FSIS IPP send positive KIS™ tests to FSIS laboratories for confirmation.

Table B2: Planned Number of Chemical Residues Analysis by Production Class: Domestic Residue Plan

Methods	Number of Animals	Aminoglycosides	Antifungal Dyes	Carbadox	Metals	Multi-residue	Nitrofurans	Pesticides	PFAS	Sulfonamides
Beef Cows	800	800	-	-	100	800	-	400	-	-
Bob Veal	400	400	-	-	100	400	-	200	-	-
Dairy Cows	800	800	-	-	100	800	-	400	-	-
Heifers	400	400	-	-	100	400	-	200	-	-
Steers	400	400	-	-	100	400	-	200	-	-
Roaster Swine	300	-	-	300	-	-	-	-	-	-
Market Swine	800	800	-	-	100	800	-	400	200	-
Sows	800	800	-	-	100	800	-	400	200	-
Feral Swine	75	-	-	-	-	-	-	75	-	-
Young Chickens	400	400	-	-	150	400	-	-	-	-
Young Whole Chickens	400	400	-	-	-	400	400	400	400	-
Young Turkeys	800	800	-	-	150	800	400	400	-	-
Goats	300	300	-	-	-	300	-	-	-	-
Siluriformes	650	-	325	-	325	650	325	325	150	-
Egg Products	400	-	-	-	-	250	-	250	-	-

Formula-Fed Veal	**75**	75	-	-	-	75	-	-	-	-
Non-Formula-Fed Veal	**75**	75	-	-	-	75	-	-	-	-
Sheep	**100**	100	-	-	-	100	-	50	-	-
Lamb	**100**	100	-	-	-	100	-	50	-	-
Total	**8,075**	**6,300**	**325**	**300**	**1,325**	**7,200**	**1,125**	**3,575**	**950**	**0**

Table B3: Planned Number of Chemical Residues Analysis by Production Class: Import Residue Plan

Methods	Aminoglycosides	Antifungal Dyes	Avermectins	Carbadox	Metals	Multi-residue	Nitrofurans	Pesticides	PFAS	Sulfonamides
Beef, Raw	200	-	-	-	50	200	-	100	-	-
Beef, Processed	-	-	25	-	12	-	-	-	-	25
Chicken, Raw	50	-	-	-	25	50	25	25	-	-
Chicken, Processed	-	-	-	-	5	-	-	-	-	5
Turkey, Raw	40	-	-	-	10	40	25	25	-	-
Turkey, Processed	-	-	-	-	5	-	-	-	-	5
Veal, Raw	70	-	-	-	-	70	-	35	-	-
Veal, Processed	-	-	5	-	-	-	-	-	-	-
Goat, Raw	25	-	-	-	-	25	-	25	-	-
Goat, Processed	-	-	5	-	-	-	-	-	-	-
Lamb, Raw	20	-	-	-	-	20	-	10	-	-
Lamb, Processed	-	-	5	-	-	-	-	-	-	-
Mutton, Raw	5	-	-	-	-	5	-	5	-	-
Mutton, Processed	-	-	5	-	-	-	-	-	-	-
Pork, Raw	200	-	-	-	50	200	-	100	-	-
Pork, Processed	-	-	25	-	12	-	-	-	-	25
Siluriformes, Raw	-	350	-	-	350	700	350	350	150	-
Egg Products	-	-	-	-	-	-	-	40	-	-
Total	610	350	70	0	519	1,310	400	715	150	60

Appendix C: National Antimicrobial Resistance Monitoring System (NARMS) Programs

The National Antimicrobial Resistance Monitoring System (NARMS) is an interagency, collaborative partnership with State and local public health departments, the U.S. Food and Drug Administration (FDA), the Centers for Disease Control and Prevention (CDC), and the U.S. Department of Agriculture (USDA). This national public health surveillance system tracks changes in antimicrobial susceptibility of select foodborne enteric bacteria found in ill people (CDC), retail meats (FDA), and food animals (USDA FSIS). The NARMS program at USDA focuses on two sampling points: samples collected from intestinal (cecal) content from food animals and carcass or food commodity samples. While the carcass or food commodity results are derived by co-analyzing samples collected for existing sampling programs, the cecal sampling program involves collection of cecal content samples from food animals at slaughter facilities. This appendix summarizes the number of samples needed to execute cecal sampling through a collaborative program with the FDA. The planned number of samples are best estimates for the number of samples needed to execute the cecal program based on how many expected isolates each sample should recover. More samples may be necessary to fully implement the program. Table C1 summarizes how resources are attributed to each commodity.

Table C1: FY 2021 and FY 2022 Sample Numbers for NARMS

Sampling Project Description	Sampling Project Code	Number of Samples FY 2021		Number of Samples FY 2022
		Planned	Actual	Planned
NARMS-Beef Cows	NARMS_BC	456	775	456
NARMS-Veal (Bob Veal, Formula-Fed Veal, and Non-Formula-Fed Veal)	NARMS_BV, NARMS_FFV, NARMS_NFFV	480	1,032	480
NARMS-Dairy Cows	NARMS_DC	980	2,104	980
NARMS-Heifers	NARMS_HF	456	903	456
NARMS-Steers	NARMS_ST	1,368	1,820	1,368
NARMS-Mesenteric Lymph Nodes in Beef Cow, Dairy Cow, Heifer, and Steer	NARMS_BC_MLN, NARMS_DC_MLN, NARMS_HF_MLN, NARMS_ST_MLN	300	381	0
NARMS-Market Swine	NARMS_MS	860	2,056	860
NARMS-Sows	NARMS_SW	410	1,469	410
NARMS-Goat	NARMS_GO	100	201	100
NARMS-Lamb	NARMS_LB	100	244	100
NARMS-Sheep	NARMS_SH	100	230	100
NARMS-Young Chickens	NARMS_YC	690	2,158	690

Sampling Project Description	Sampling Project Code	Number of Samples FY 2021		Number of Samples FY 2022
		Planned	Actual	Planned
NARMS-Young Turkeys	NARMS_YT	435	1,351	435

Appendix D: Other Sampling Programs

Table D1 summarizes the numbers of samples in FSIS' sampling programs other than microbiological and chemical residue sampling programs for FY 2021 and FY 2022.

Table D1: FY 2021 and FY 2022 Sample Numbers for FSIS Sampling Programs other than Microbiological and Chemical Residues

Sampling Project Description	Sampling Project Code	Number of Samples FY 2021		Number of Samples FY 2022
		Planned	Actual	Planned
Domestic AMR – Beef[1]	AMR01	150	79	150
Import AMR – Beef[1]	IMPAMRBEEF	10	0	10
Follow-up AMR01 – Beef[1,2]	FAMR01	NA	8	NA
Foodborne Illness and Outbreak Sampling[3,4]	Various	7,000	630	7,000
Label Verification for Nutrient Content – Raw Ground Beef	EXP_LV_NUTR	200	61	200
Label Verification – Allergens[5]	EXP_LV_SOY	200	4	200
Label Verification – Antibiotic Free[5]	EXP_LV_ABX	400	251	400
Label Verification – Hormone Free[5]	EXP_LV_HORM	200	6	200
Species Identification – Collector Generated	SPECID	NA	0	NA
Import Species Identification	IMPSPECIESID	250	216	250
Food Chemistry – Collector Generated[5]	FOODCHEM	NA	1	NA
Compliance Testing[3,6]	COMPLIAN	NA	153	NA
Pathology – Collector Generated[3,7]	Various	NA	3,726	NA
Import – Abnormal Container	IMPABNCONT and ABNCONT	NA	2	NA

Abbreviation: AMR, advanced meat recovery.

[1] FSIS collects and analyzes samples in regulated establishments to verify that industry is preventing beef spinal cord material from entering the food supply and being misrepresented as meat. If an AMR sample is positive, additional samples are assigned to the establishment in PHIS through the FAMR01 sampling.

[2] Dependent on positive findings from the AMR01 sampling project.

[3] Samples for these projects are not planned in advance, but rather an inspector can collect a sample on the basis of their findings or other circumstances. The planned samples for the Foodborne Illness and Outbreak Sampling are a baseline of 2,000 samples plus a calculated projected number of samples that includes the follow-up sampling. Since follow-up sampling is notated as TBD throughout the appendices, this notates the allocations set aside for all follow-up sampling and outbreak events. Actual values for follow-up sampling are located within their respective product class tables.

[4] FSIS collects and analyzes food samples potentially related to foodborne disease outbreaks. Analyses are conducted to identify and further characterize organisms in outbreak samples.

[5] FSIS performs food and residue chemistry analyses to identify mislabeling, economic fraud, and adulteration of meat, poultry, and egg products.

[6] FSIS investigators collect compliance samples at in-commerce businesses on a "for-cause" basis in response to complaints, allegations, and observations during routine or for-cause surveillance activities.

[7] FSIS carries out diagnostic and consultative pathology services to identify diseases, parasites, and related conditions in response to the needs of field operations.

Appendix E: Terms, Definitions, and References

Terms and Definitions

Analyses: A target detection methodology is applied to a sample based on the sampling project.

Analytes: The target of detection in the analysis, whether it is for microbiological pathogens, chemical residues, pathology diagnoses, or other various analyses.

Analyzed: A sample was processed by the laboratory.

Beef Manufacturing Trimmings: Beef parts of any size, including primal cuts, subprimal cuts, and smaller pieces of trimmings from subprimal cuts, that the producing slaughter establishment intends for raw, non-intact use.

Bench Trim: Beef parts of any size, including primal cuts, subprimal cuts, and smaller pieces of trimmings from subprimal cuts, derived from animals slaughtered at another establishment intended for raw, non-intact use (i.e., not slaughtered onsite).

Comminuted: Product that has been ground, mechanically separated, or mechanically or hand-deboned and further chopped, flaked, minced, or otherwise processed to reduce particle size.

Distributed: FSIS sampling task scheduling algorithm results in a sampling task to appear in PHIS. The algorithm may set to over distribute samples to compensate for predicted under performance in a particular sampling project. This excess distribution is often referred to as "over scheduling."

Follow-up sampling: Sampling that is a result of failed performance standards or incomplete moving windows or positive results.

Moving Window: The results from FSIS sampling over 52 consecutive Sunday-to-Saturday weeks. For more information on moving windows, please see 83 FR 56046.

Performed: A sample was collected and submitted to the laboratory.

Planned: Quantity of samples identified by the workgroup and annual FSIS Sampling Plan.

Routine Sample: Sample collected for sampling projects which are planned with predicted collection frequencies based on establishments' regular operations. Positive routine samples, or other unpredicted events, may trigger additional sample collections whose samples would not be considered "routine."

Sampling Plan: A comprehensive annual Agency issuance which identifies the planned sampling programs, including statistical and policy basis, for a fiscal year. The data-driven strategic planning effort for microbiological and chemical residue sampling activities are aligned with the Agency's Strategic and Annual Plan priorities.

Sample Scheduling Frequency: The sampling frequency targeting the number of samples collected on an annual basis instead of focusing on specific collection rates. To collect samples from infrequent producers and optimize the total number of samples collected and analyzed, FSIS adjusts the number of samples being scheduled based on the average number of samples collected throughout the sampling year.

Scheduled: A sample is specifically designated a collection date by the FSIS user in PHIS. An FSIS user may not be able to schedule all the samples distributed to a particular establishment in PHIS due to factors such as eligible project availability and other inspection activities.

Test: See Analyses definition.

Windows: An established timeframe FSIS uses to calculate categorization. For example, poultry performance standards use the results from the past 52 weeks to determine an establishment's category status.

References

Links to Agency Planning Documents
FY 2017-2021 FSIS Strategic Plan: Food Safety and Inspection Service Strategic Plan 2017-2021 (usda.gov)

Past Annual Plans: Strategic Planning | Food Safety and Inspection Service (usda.gov)

Links to Agency Sampling Plans and Programs
Past Annual Sampling Plans: Sampling Program | Food Safety and Inspection Service (usda.gov) – under the Annual Sampling Reports menu

Food Safety and Inspection Service Microbiological and Residue Sampling Programs: Report on the Food Safety and Inspection Service's Microbiological and Residue Sampling Programs (usda.gov)

Links to Agency Sampling Summary Reports
Past Annual Sampling Summary Reports: Sampling Program | Food Safety and Inspection Service (usda.gov) – under the Sampling Summary Reports menu

Links to Posted Sampling Datasets
FSIS Data Collection and Reports webpage: Sampling Results for FSIS Regulated Products | Food Safety and Inspection Service (usda.gov)

Links to Agency Directives
FSIS Directive 10,400.1: Sample Collection from Cattle Under the Bovine Spongiform Encephalopathy (BSE) Ongoing Surveillance Program - Revision 1 | Food Safety and Inspection Service (usda.gov)

Links to NARMS information
CDC NARMS website: www.cdc.gov/narms/reports/

FDA NARMS website: www.fda.gov/AnimalVeterinary/SafetyHealth/AntimicrobialResistance/NationalAntimicrobialResistanceMonitoringSystem/default.htm

USDA NARMS website:

National Antimicrobial Resistance Monitoring System (NARMS) | Food Safety and Inspection Service (usda.gov)

FSIS Quarterly Antimicrobial Resistance (AMR) Tables:

Microbiology | Food Safety and Inspection Service (usda.gov)