Contents

Introduction ................................................................................................................................................. 3

Background.............................................................................................................................................. 3

Table 1: Planned Number of Microbiological Analyses (tests) and Analytes FY 2019-FY 2021 ........ 5

Table 2: Planned Number of Chemical Residue Analyses and Analytes Reported FY 2019-FY 2021 ... 6

Significant Changes for the FY 2021 Plan..................................................................................................... 7

Table 3: FY 2021 Sampling Priorities ...................................................................................................... 7

Table 4: Rationale for Changes in Sampling Allocations ......................................................................... 9

Appendix A: Microbial Sampling Numbers by Product ........................................................................... 15

Table A2: FY 2020 and FY 2021 Sample Numbers for Raw Beef ........................................................... 16

Table A3: FY 2020 and FY 2021 Sample Numbers for Raw Pork ............................................................. 17

Table A4: FY 2020 and FY 2021 Sample Numbers for Raw Siluriformes ............................................. 17

Table A5: FY 2020 and FY 2021 Sample Numbers for Raw Poultry ....................................................... 18

Appendix B: Chemical Residue Sampling Numbers by Product .............................................................. 20

Table B1: FY 2019 and FY 2020 Sample Numbers for Chemical Residues ......................................... 20

Appendix C: National Antimicrobial Resistance Monitoring System (NARMS) Programs ....................... 25

Table C1: FY 2020 and FY 2021 Sample Numbers for NARMS .............................................................. 25

Appendix D: Other Sampling Programs .................................................................................................... 26

Table D1: FY 2020 and FY 2021 Sample Numbers for FSIS Sampling Programs Other than Microbiological and Chemical Residues ......................................................................................... 26

Appendix E: Terms, Definitions and References ...................................................................................... 27

References ................................................................................................................................................. 28
Introduction

The U.S. Department of Agriculture’s (USDA) Food Safety and Inspection Service (FSIS) inspects meat, poultry, and egg products to verify whether the food produced is safe, wholesome, and properly labeled. Verification activities serve to protect the public from foodborne hazards. A key FSIS inspection verification activity is the sampling of product for microbiological contaminants or chemical residues.

This report identifies changes planned for fiscal year (FY) 2021 to FSIS’ various sampling programs and describes the Agency’s overall strategy for directing its sampling resources.

Background

FSIS Agency Planning
The FSIS published Strategic Plan for FY 2017-2021 includes an objective to strengthen FSIS sampling programs. The activities in the FY 2021 Annual Sampling Plan directly align with the FSIS FY 2021 Annual Plan.

In FY 2019, FSIS concluded a comprehensive internal evaluation of all sampling projects called the Strategic Assessment of Sampling Resources (SASR). During this evaluation, FSIS developed several new tools to help optimize the benefits provided by each sampling project. In conjunction with these tools, the evaluation provided several recommendations that helped improve internal procedures. In FY 2020, FSIS began implementing those recommendations.

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. In FY 2020, FSIS investigated ways to improve Agency sample allocation with certain measures to be implemented in FY 2021. 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 project within the collection window 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. In order 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 therefore 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 monitoring the effectiveness, where applicable, of Hazard Analysis and Critical Control Points programs, 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 establishments.

FSIS engaged 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 performed 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. 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 off public health, regulatory, and research partners’ efforts in support of FSIS Research Priorities.
Microbiological and Chemical Residue Sampling Planned Changes from FY 2019 to FY 2021

Table 1 and Table 2 summarize, for microbiological and chemical residue programs, respectively, the total planned number of analyses and corresponding planned number of analytes tested for during FY 2019, FY 2020, and FY 2021 by product class. Data is based on the proposed number of samples and actual analyses performed during the previous fiscal years.

Table 1: Planned Number of Microbiological Analyses (Tests) and Analytes FY 2019-FY 2021

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Beef</td>
<td>18,762</td>
<td>49,416</td>
<td>197,664</td>
<td>18,762</td>
<td>49,416</td>
<td>94,488</td>
<td>19,233</td>
<td>51,240</td>
<td>99,336</td>
<td>471 1,824 4,848</td>
</tr>
<tr>
<td>Raw Pork</td>
<td>11,040</td>
<td>22,080</td>
<td>110,400</td>
<td>11,040</td>
<td>22,080</td>
<td>33,120</td>
<td>11,040</td>
<td>22,080</td>
<td>33,120</td>
<td>0 0 0</td>
</tr>
<tr>
<td>Raw Poultry</td>
<td>47,736</td>
<td>64,416</td>
<td>64,416</td>
<td>47,736</td>
<td>64,416</td>
<td>64,416</td>
<td>47,892</td>
<td>64,248</td>
<td>64,248</td>
<td>156 -168 -168</td>
</tr>
<tr>
<td>Raw Siluriformes</td>
<td>660</td>
<td>660</td>
<td>660</td>
<td>660</td>
<td>660</td>
<td>660</td>
<td>660</td>
<td>660</td>
<td>660</td>
<td>0 0 0</td>
</tr>
<tr>
<td>RTE/Eggs</td>
<td>15,919</td>
<td>29,616</td>
<td>29,616</td>
<td>15,919</td>
<td>29,616</td>
<td>29,616</td>
<td>15,919</td>
<td>29,616</td>
<td>29,616</td>
<td>0 0 0</td>
</tr>
<tr>
<td>RLM</td>
<td>5,437</td>
<td>5,437</td>
<td>5,437</td>
<td>5,437</td>
<td>5,437</td>
<td>5,437</td>
<td>5,437</td>
<td>5,437</td>
<td>5,437</td>
<td>0 0 0</td>
</tr>
<tr>
<td>Eggs</td>
<td>1,600</td>
<td>3,200</td>
<td>3,216</td>
<td>1,600</td>
<td>3,200</td>
<td>3,200</td>
<td>1,600</td>
<td>3,200</td>
<td>3,200</td>
<td>0 0 0</td>
</tr>
<tr>
<td>NARMS</td>
<td>6,400</td>
<td>16,600</td>
<td>441,100</td>
<td>7,780</td>
<td>18,600</td>
<td>443,100</td>
<td>7,780</td>
<td>18,600</td>
<td>443,100</td>
<td>0 0 0</td>
</tr>
<tr>
<td>Imports²</td>
<td>6,804</td>
<td>16,176</td>
<td>29,376</td>
<td>6,804</td>
<td>14,976</td>
<td>29,376</td>
<td>6,312</td>
<td>13,884</td>
<td>27,893</td>
<td>-492 -1,092 -1,483</td>
</tr>
<tr>
<td>Total</td>
<td>114,358</td>
<td>207,601</td>
<td>881,885</td>
<td>115,738</td>
<td>208,391</td>
<td>703,413</td>
<td>115,873</td>
<td>208,616</td>
<td>706,741</td>
<td>135 564 3,197</td>
</tr>
</tbody>
</table>

1 The differences between FY 2020 and FY 2021 plans include the following: realignment in imports for poultry and Siluriformes, discontinued sampling other raw chicken parts, and cessation of the most probable number enumeration analysis. 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 2019-FY 2021

<table>
<thead>
<tr>
<th>Product Class</th>
<th>Planned for FY 2019</th>
<th>Planned for FY 2020</th>
<th>Planned for FY 2021</th>
<th>Difference^3 (FY 2021-FY 2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Samples Planned</td>
<td>Tests Planned</td>
<td>Analytes Planned</td>
<td>Samples Planned</td>
</tr>
<tr>
<td></td>
<td>FY 2019</td>
<td>FY 2019</td>
<td>FY 2020</td>
<td>FY 2019</td>
</tr>
<tr>
<td>Beef Cows</td>
<td>712</td>
<td>3,240</td>
<td>121,320</td>
<td>712</td>
</tr>
<tr>
<td>Bob Veal</td>
<td>356</td>
<td>1,620</td>
<td>60,660</td>
<td>356</td>
</tr>
<tr>
<td>Dairy Cows</td>
<td>712</td>
<td>3,240</td>
<td>121,320</td>
<td>712</td>
</tr>
<tr>
<td>Heifers</td>
<td>356</td>
<td>1,620</td>
<td>60,660</td>
<td>356</td>
</tr>
<tr>
<td>Steer</td>
<td>356</td>
<td>1,620</td>
<td>60,660</td>
<td>356</td>
</tr>
<tr>
<td>Sows</td>
<td>712</td>
<td>2,160</td>
<td>111,600</td>
<td>712</td>
</tr>
<tr>
<td>Market Swine</td>
<td>712</td>
<td>2,880</td>
<td>119,880</td>
<td>712</td>
</tr>
<tr>
<td>Young Chickens</td>
<td>712</td>
<td>2,160</td>
<td>110,880</td>
<td>712</td>
</tr>
<tr>
<td>Whole Chickens</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>356</td>
</tr>
<tr>
<td>Young Turkeys</td>
<td>712</td>
<td>2,160</td>
<td>110,880</td>
<td>712</td>
</tr>
<tr>
<td>Sheep</td>
<td>150</td>
<td>546</td>
<td>25,584</td>
<td>100</td>
</tr>
<tr>
<td>Lamb</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Goats</td>
<td>300</td>
<td>1,050</td>
<td>49,200</td>
<td>300</td>
</tr>
<tr>
<td>Roaster Swine</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Veal - Other</td>
<td>150</td>
<td>640</td>
<td>19,890</td>
<td>150</td>
</tr>
<tr>
<td>Egg Product</td>
<td>400</td>
<td>400</td>
<td>22,378</td>
<td>250</td>
</tr>
<tr>
<td>Siluriformes</td>
<td>650</td>
<td>2,130</td>
<td>103,290</td>
<td>650</td>
</tr>
<tr>
<td>Domestic Residues</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Difference^2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Import residue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5,600</td>
<td>24,828</td>
<td>963,114</td>
<td>4,000</td>
</tr>
<tr>
<td></td>
<td>KIS™</td>
<td>4,000</td>
<td>8,000</td>
<td>424,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>17,610</td>
<td>61,354</td>
<td>2,613,824</td>
</tr>
</tbody>
</table>

**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 2020 and FY 2021 plans include: adjustment of state sampling allocations, cessation of the avermectin stand-alone method, addition of polyfluoroalkyl substances (PFAS) analysis to more commodities, and the expansion of multi-residue methods to include more analytes.
Significant Changes for the FY 2021 Plan

The following table consists of key priorities FSIS plans to implement in FY 2021. Each row describes the challenges that the Agency faces moving into FY 2021, 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 2020 after the FY 2020 Plan was published.

Table 3: FY 2021 Sampling Priorities

<table>
<thead>
<tr>
<th>Cause or Challenge that Prompted Change</th>
<th>Impacted Sampling, Related Process, or Analyte</th>
<th>FY 2021 Planned Agency Goal, Target Objective, or Activity</th>
</tr>
</thead>
</table>
| Support sampling plan, design, analysis, and future decision-making | Sampling resource planning and allocation | • Explore strategies to modernize sample task assignment in PHIS. This effort will focus on how the Agency can further support sample assignment and collection success at an establishment throughout the year. Focus will be on the low volume establishments as this group faces unique challenges.  
• Evaluate options for reduced *Campylobacter* sample screen test time.  
• Explore strategies for increasing the number of actual risk-based *Listeria monocytogenes* (RLm) sampling events completed to more closely meet the planned targets.  
• Explore options to reduce gaps in establishment profile information to better identify eligible establishments for all label verification projects.  
• Explore options to develop an allergen sampling program. |
<p>| Changes to the National Residue Program (NRP) | PFAS (per- and polyfluoroalkyl substances) | • In FY 2020, FSIS implemented a testing method for per- and polyfluoroalkyl substances (PFAS), a class of persistent organic environmental contaminants that include perfluorooctanoic acid and perfluoro octane sulfonate. The exploratory testing aimed to gather data on the frequency and levels of PFAS in beef muscle. In FY 2021, PFAS monitoring will be expanded to include beef, pork, Siluriformes fish, and chicken sampling. |</p>
<table>
<thead>
<tr>
<th>Cause or Challenge that Prompted Change</th>
<th>Impacted Sampling, Related Process, or Analyte</th>
<th>FY 2021 Planned Agency Goal, Target Objective, or Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>State-inspected establishments in the domestic NRP</td>
<td>• In FY 2020, FSIS evaluated sample tasks distribution to State-inspected establishments in the domestic NRP program and in FY 2021 will modernize distribution of sampling tasks.</td>
<td></td>
</tr>
<tr>
<td>Most Probable Number (MPN) analysis of microbial pathogens</td>
<td>• The current enumeration method (MPN) can underestimate target pathogen numbers, thus reducing the method’s effectiveness as an indicator of process control. • FSIS will discontinue the currently suspended MPN analysis. • FSIS will evaluate modern enumeration methods.</td>
<td></td>
</tr>
<tr>
<td>WGS</td>
<td>• FSIS will deploy the use of long-read sequencing technology to supplement WGS data to completely sequence the genomes and plasmids from isolates of interest. • FSIS will explore transitioning from antimicrobial susceptibility testing to inferred resistance derived from WGS data where possible.</td>
<td></td>
</tr>
<tr>
<td>Result Reporting</td>
<td>• Modernize LIMS Direct reporting. • Increase transparency of how National Antimicrobial Resistance Monitoring System (NARMS) results impact industry.</td>
<td></td>
</tr>
</tbody>
</table>
Table 4 contains the rationale for changes in sampling number allocations between FY 2020 and FY 2021 sampling plans. Each row identifies where the change will occur in the sampling program, a description of that program, and the Agency's reasoning for the changes.

### Table 4: Rationale for Changes in Sampling Allocations

<table>
<thead>
<tr>
<th>Sampling by Program/Commodity</th>
<th>Program Description</th>
<th>Rationale for Any Changes from the FY 2020 Sampling Allocations</th>
</tr>
</thead>
</table>
| Beef Products                | • FSIS conducts Shiga toxin-producing *E. coli* (STEC) sampling for product produced in domestic establishments, imported products, and raw ground beef collected at 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. | • Increase sampling for beef manufacturing trim, MT60, to 4,000 samples. FSIS needs the extra 250 samples to calculate prevalence estimates.  
• Expand non-O157 STEC analysis to all other beef samples in addition to beef manufacturing trimmings.  
• Evaluate alternative surface sampling method to N60 pathogen detection. Assessment analyte options include aerobic counts and *Salmonella*.  
• Evaluate potential alternate beef slaughter inspection procedures comparing carcass microbial load.  
• Evaluate the 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 2021.  
• Evaluate the options for enumeration of positive *Salmonella* samples. |
<table>
<thead>
<tr>
<th>Sampling by Program/Commodity</th>
<th>Program Description</th>
<th>Rationale for Any Changes from the FY 2020 Sampling Allocations</th>
</tr>
</thead>
</table>
| Poultry Products             | • FSIS analyzes young chicken and turkey carcasses, comminuted chicken and turkey, and chicken part samples for *Salmonella* and *Campylobacter*. | • Implemented *Salmonella* and *Campylobacter* analyses of fowl carcasses slaughtered under New Poultry Inspection System (NPIS) with waiver exploratory project in FY 2020.  
• Evaluate product volume calculation to ensure consistency in sample task assignment.  
• Analyze the results of the remaining poultry exploratory sampling projects and determine next steps. This effort will include conducting an analysis to determine uses for mechanically separated poultry.  
• Formally end exploratory sampling for currently suspended other raw poultry parts.  
• Evaluate options for enumeration of samples positive for *Salmonella* and *Campylobacter*. |
<p>| Siluriformes                 | • FSIS analyzes raw fish of the order Siluriformes for <em>Salmonella</em>. | • No allocation changes for FY2021. |</p>
<table>
<thead>
<tr>
<th>Sampling by Program/Commodity</th>
<th>Program Description</th>
<th>Rationale for Any Changes from the FY 2020 Sampling Allocations</th>
</tr>
</thead>
</table>
| Ready-To-Eat (RTE): Meat, Poultry, and Egg Products | • FSIS also 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.  
• *Rlm* sampling program is performed in establishments producing post-lethality exposed RTE product. An *Rlm* sampling event includes samples, consisting of product, contact surfaces, and the processing environment, collected and sampled for *Lm* under 3 *Rlm* project codes.  
• Intensified Verification Testing (IVT) is performed whenever an eligible establishment has a positive sample collected under the *Rlm* sampling program projects, or either one of the RTEPROD sampling projects. | • Modernized egg products sampling by consolidating the seven separate projects into two and allocating samples based on production volume to relieve burden on smaller establishments. The maximum egg product sample allocation reduced from 7 to 3 samples per establishment per month in this project.  
• Evaluate the options for enumeration of positive *Lm* and *Salmonella* samples. |
<table>
<thead>
<tr>
<th>Sampling by Program/Commodity</th>
<th>Program Description</th>
<th>Rationale for Any Changes from the FY 2020 Sampling Allocations</th>
</tr>
</thead>
</table>
| 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. | • PFAS monitoring will be expanded to include beef, pork, Siluriformes fish, and chicken sampling.  
• FSIS will update NRP State sample allocations. |
<table>
<thead>
<tr>
<th>Sampling by Program/Commodity</th>
<th>Program Description</th>
<th>Rationale for Any Changes from the FY 2020 Sampling Allocations</th>
</tr>
</thead>
</table>
| 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 and poultry products and imported Siluriformes products for chemical residues. | • Realign samples allotted for sampling of imported egg products from 150 to 120 to adjust for expected volume and sampling rate.  
  • Realign samples allotted for imported Siluriformes products from 1,000 to 700 to adjust for the expected import volume and sampling rate.  
  • Realign samples allotted for imported raw pork products from 600 to 400 to adjust for the expected volume and sampling rate. |
<table>
<thead>
<tr>
<th>Sampling by Program/Commodity</th>
<th>Program Description</th>
<th>Rationale for Any Changes from the FY 2020 Sampling Allocations</th>
</tr>
</thead>
</table>
| 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*. | • No allocation changes. |

| 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. |
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 to the appendices. Totals in the appendices’ tables have been rounded. Each table contains the following information:

1. Planned number of samples to be analyzed in FY 2020;
2. Number of samples actually analyzed in FY 2020; and
3. Planned number of samples to be analyzed in FY 2021.

Appendix A: Microbial Sampling Numbers by Product

This appendix summarizes the numbers of samples in FSIS’ microbiological sampling program and presents the number of samples planned and actually analyzed in FY 2020, and the number of samples planned to be analyzed in FY 2021, 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 2020. For a more in-depth review, the tables in the “Sampling by Product” section contain the stratification of the different analytes by product classes.

Table A1: Summary of Analyte tested by Product

<table>
<thead>
<tr>
<th>Product</th>
<th>Microbiological Analyte</th>
<th>L. monocytogenes</th>
<th>E. coli O157:H7</th>
<th>Non-O157 STEC</th>
<th>Indicator Organisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Beef</td>
<td>√</td>
<td></td>
<td>✓</td>
<td>✓^1</td>
<td>✓^2</td>
</tr>
<tr>
<td>Raw Pork</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Siluriformes</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Poultry</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTE Products</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Egg Products</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^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, pork, and poultry projects are analyzed for indicator organisms.
### Table A2: FY 2020 and FY 2021 Sample Numbers for Raw Beef

<table>
<thead>
<tr>
<th>Product Class</th>
<th>Sampling Project Code</th>
<th>Pathogen(s)</th>
<th>Number of Samples FY 2020</th>
<th>Number of Samples FY 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Planned</td>
<td>Actual</td>
</tr>
<tr>
<td>Raw ground beef</td>
<td>MT43</td>
<td><em>E. coli</em> O157:H7 and <em>Salmonella</em></td>
<td>11,500</td>
<td>10,539</td>
</tr>
<tr>
<td>Follow-up testing to a ground beef <em>E. coli</em> positive(^1)</td>
<td>MT44 and MT44T</td>
<td><em>E. coli</em> O157:H7 and TBD <em>Salmonella</em></td>
<td>76</td>
<td>TBD</td>
</tr>
<tr>
<td>Raw ground beef components other than trim</td>
<td>MT64</td>
<td><em>E. coli</em> O157:H7 and 1,250 <em>Salmonella</em></td>
<td>1,294</td>
<td>1,250</td>
</tr>
<tr>
<td>Bench trim</td>
<td>MT65</td>
<td><em>E. coli</em> O157:H7 and 1,500 <em>Salmonella</em></td>
<td>1,386</td>
<td>1,500</td>
</tr>
<tr>
<td>Beef manufacturing trim</td>
<td>MT60</td>
<td><em>E. coli</em> O157:H7, Non-O157 STEC and <em>Salmonella</em></td>
<td>4,141</td>
<td>4,000</td>
</tr>
<tr>
<td>Follow-up testing at supplier establishments following MT43, MT44, or MT65 positive(^1)</td>
<td>MT52</td>
<td><em>E. coli</em> O157:H7, Non-O157 STEC and <em>Salmonella</em></td>
<td>TBD</td>
<td>11</td>
</tr>
<tr>
<td>Follow-up testing to an MT60, MT64, MT65, or MT52 positive(^1)</td>
<td>MT53</td>
<td><em>E. coli</em> O157:H7, Non-O157 STEC and <em>Salmonella</em></td>
<td>TBD</td>
<td>756</td>
</tr>
<tr>
<td>Raw ground beef at retail stores</td>
<td>MT05</td>
<td><em>E. coli</em> O157:H7 and 575 <em>Salmonella</em></td>
<td>524</td>
<td>500</td>
</tr>
<tr>
<td>Follow-up testing to a MT05 sample(^1)</td>
<td>MT06</td>
<td><em>E. coli</em> O157:H7 and TBD <em>Salmonella</em></td>
<td>0</td>
<td>TBD</td>
</tr>
<tr>
<td>Imported raw ground beef(^2)</td>
<td>MT08</td>
<td><em>E. coli</em> O157:H7 and 50 <em>Salmonella</em></td>
<td>70</td>
<td>50</td>
</tr>
<tr>
<td>Imported trim and other raw ground beef components(^2)</td>
<td>MT51</td>
<td><em>E. coli</em> O157:H7, 1,200 Non-O157 STEC and <em>Salmonella</em></td>
<td>2,478(^3)</td>
<td>1,200</td>
</tr>
</tbody>
</table>

\(^1\) 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 product.

\(^3\) Two unanticipated, intensified import sampling events increased the number of samples for MT51.
Table A3: FY 2020 and FY 2021 Sample Numbers for Raw Pork

<table>
<thead>
<tr>
<th>Product Class</th>
<th>Sampling Project Code</th>
<th>Pathogen(s)</th>
<th>Number of Samples</th>
<th>Number of Samples</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comminuted Pork Exploratory Sampling 2</td>
<td>EXP_PK_COM02</td>
<td><em>Salmonella</em> and Indicator Organisms</td>
<td>0</td>
<td>132</td>
<td>0</td>
</tr>
<tr>
<td>Comminuted Pork</td>
<td>HC_PK_COM01</td>
<td><em>Salmonella</em> and Indicator Organisms</td>
<td>8,640</td>
<td>5,515</td>
<td>8,640</td>
</tr>
<tr>
<td>Intact Pork Cuts Exploratory Sampling 2</td>
<td>EXP_PK_ICT02</td>
<td><em>Salmonella</em> and Indicator Organisms</td>
<td>0</td>
<td>116</td>
<td>0</td>
</tr>
<tr>
<td>Non-Intact Pork Cuts Exploratory Sampling 2</td>
<td>EXP_PK_NCT02</td>
<td><em>Salmonella</em> and Indicator Organisms</td>
<td>0</td>
<td>94</td>
<td>0</td>
</tr>
<tr>
<td>Intact and Non-Intact Cuts</td>
<td>HC_PK_CUT01</td>
<td><em>Salmonella</em> and Indicator Organisms</td>
<td>2,400</td>
<td>1,800</td>
<td>2,400</td>
</tr>
<tr>
<td>Imported Pork 1</td>
<td>IMP_PORK</td>
<td><em>Salmonella</em></td>
<td>600</td>
<td>327</td>
<td>400</td>
</tr>
</tbody>
</table>

1 Sampling for imports depends on the number of shipments received by country and product.
2 FSIS discontinued exploratory pork sampling early in FY 2020 and replaced them with two new ones.

Table A4: FY 2020 and FY 2021 Sample Numbers for Raw Siluriformes

<table>
<thead>
<tr>
<th>Product Class</th>
<th>Sampling Project Code</th>
<th>Analyses</th>
<th>Number of Samples</th>
<th>Number of Samples</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Raw Fish of the Order Siluriformes</td>
<td>EXP_FI_MIC01</td>
<td><em>Salmonella</em></td>
<td>650</td>
<td>598</td>
<td>650</td>
</tr>
<tr>
<td>Imported Raw Fish of the Order Siluriformes 1</td>
<td>IMPFISH_MI</td>
<td><em>Salmonella</em></td>
<td>1,000</td>
<td>649</td>
<td>700</td>
</tr>
</tbody>
</table>

1 Sampling for imports depends on the number of shipments received by country and product.
### Table A5: FY 2020 and FY 2021 Sample Numbers for Raw Poultry

<table>
<thead>
<tr>
<th>Product Class</th>
<th>Sampling Project Code</th>
<th>Pathogen(s)</th>
<th>Number of Samples FY 2020</th>
<th>Number of Samples FY 2021</th>
<th>Number of Samples FY 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young Chicken Carcasses</td>
<td>HC_CH_CARC01</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>9,630</td>
<td>9,601</td>
<td>9,630</td>
</tr>
<tr>
<td>Ground and Other Comminuted Chicken (not Mechanically Separated)</td>
<td>HC_CH_COM01</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>2,500</td>
<td>2,041</td>
<td>2,500</td>
</tr>
<tr>
<td>Exploratory - Mechanically Separated Chicken Parts – Legs, Breasts, Wings</td>
<td>EXP_CH_MSK01</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>150</td>
<td>82</td>
<td>150</td>
</tr>
<tr>
<td>Chicken Parts – Other Parts</td>
<td>EXP_CPT_OT01</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>80</td>
<td>134</td>
<td>0¹</td>
</tr>
<tr>
<td>Chicken Parts – Quarters, Halves</td>
<td>EXP_CPT_QH01</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>120</td>
<td>63</td>
<td>120</td>
</tr>
<tr>
<td>Turkey Carcasses</td>
<td>HC_TU_CARC01</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>1,730</td>
<td>1,718</td>
<td>1,730</td>
</tr>
<tr>
<td>Ground and Other Comminuted Turkey (not Mechanically Separated)</td>
<td>HC_TU_COM01</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>1,500</td>
<td>1,402</td>
<td>1,500</td>
</tr>
<tr>
<td>Exploratory - Mechanically Separated Turkey</td>
<td>EXP_TU_MSK01</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>150</td>
<td>87</td>
<td>150</td>
</tr>
<tr>
<td>Imported Raw Intact Chicken and Turkey²</td>
<td>IMP_POULTRY</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>800</td>
<td>761</td>
<td>800</td>
</tr>
<tr>
<td>NPIS Fowl Carcass Exploratory</td>
<td>HC_HF_CAR01</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>0</td>
<td>58</td>
<td>240</td>
</tr>
<tr>
<td>Follow-up Sampling for Chicken Parts, Carcasses, Comminuted Chicken and Turkey¹</td>
<td>F_CPT_LBW01, F_CH_COM01, F_TU_COM01, F_CH_CARC01, F_TU_CARC01</td>
<td><em>Salmonella, Campylobacter</em></td>
<td>TBD</td>
<td>2,280</td>
<td>TBD</td>
</tr>
</tbody>
</table>

¹ Dependent on findings from other *Salmonella* and *Campylobacter* projects.
² Sampling for imports depends on the number of shipments received by country and product.
³ FSIS discontinued sampling of other raw chicken parts in FY 2020.
## Table A6: FY 2020 and FY 2021 Sample Numbers for RTE, NRTE, and Egg Products

<table>
<thead>
<tr>
<th>Product Class</th>
<th>Sampling Project Code</th>
<th>Pathogen(s)</th>
<th>Number of Samples FY 2020</th>
<th>Number of Samples FY 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both post lethality-exposed and non-post lethality-exposed RTE products</td>
<td>RTEPROD_Rand</td>
<td><em>Lm &amp; Salmonella</em></td>
<td>7,400</td>
<td>6,620</td>
</tr>
<tr>
<td>Post lethality-exposed RTE products</td>
<td>RTEPROD_Risk</td>
<td><em>Lm &amp; Salmonella</em></td>
<td>7,400</td>
<td>7,538</td>
</tr>
<tr>
<td><em>RLm</em> product samples (Composited 5-sample Units)</td>
<td>RLMPRODC</td>
<td><em>Lm</em></td>
<td>423 (2,125)² 165 (825)⁴</td>
<td>423 (2,125)² 1634⁴</td>
</tr>
<tr>
<td><em>RLm</em> food contact surface samples</td>
<td>RLMCONT</td>
<td><em>Lm</em></td>
<td>4,218</td>
<td>1634⁴</td>
</tr>
<tr>
<td><em>RLm</em> non-food contact environmental samples (Composited 5-sample Units)</td>
<td>RLMENVNC</td>
<td><em>Lm</em></td>
<td>423 (2,125)² 164 (820)⁴</td>
<td>423 (2,125)² 1634⁴</td>
</tr>
<tr>
<td>Intensified Verification Testing (IVT) product samples¹</td>
<td>INTPROD</td>
<td><em>Lm or Salmonella</em></td>
<td>TBD</td>
<td>270</td>
</tr>
<tr>
<td>IVT food contact surface samples¹</td>
<td>INTCONT</td>
<td><em>Lm or Salmonella</em></td>
<td>TBD</td>
<td>558</td>
</tr>
<tr>
<td>IVT non-food contact environmental samples¹</td>
<td>INTENV</td>
<td><em>Lm or Salmonella</em></td>
<td>TBD</td>
<td>305</td>
</tr>
<tr>
<td>Imported intact RTE product³</td>
<td>IMVRTE</td>
<td><em>Lm &amp; Salmonella</em></td>
<td>3,000</td>
<td>2,819</td>
</tr>
<tr>
<td>Follow up testing to imported RTE product</td>
<td>FLISTERIA</td>
<td><em>Lm</em></td>
<td>TBD</td>
<td>0</td>
</tr>
<tr>
<td>Follow up testing to imported RTE product</td>
<td>FRTESALMONEL</td>
<td><em>Salmonella</em></td>
<td>TBD</td>
<td>0</td>
</tr>
<tr>
<td>Egg Products</td>
<td>EM31-EM37</td>
<td><em>Lm &amp; Salmonella</em></td>
<td>1,600</td>
<td>1,072</td>
</tr>
<tr>
<td>Egg Products</td>
<td>EGG_DY_MIC01</td>
<td><em>Lm &amp; Salmonella</em></td>
<td>0</td>
<td>487</td>
</tr>
<tr>
<td>Pasteurized imported liquid, frozen or dried egg products</td>
<td>EGG_LQ_MIC01</td>
<td><em>Lm &amp; Salmonella</em></td>
<td>150</td>
<td>111</td>
</tr>
</tbody>
</table>

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

1 Dependent on positive findings from RTEPROD_RAND, RTEPROD_RISK, and RLm sampling projects.

2 The number in parenthesis represents the number of samples collected by OFO to generate the composite number of samples planned.

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

4 Restrictions put in place due to the COVID-19 pandemic impacted the ability to collect some RLm sampling.

5 Egg product sampling project modernization resulted in the discontinuation of these projects.
Appendix B: Chemical Residue Sampling Numbers by Product

This appendix summarizes the numbers of samples in FSIS’ chemical residue sampling program for FY 2020 and FY 2021. 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 2019 and FY 2020 Sample Numbers for Chemical Residues

<table>
<thead>
<tr>
<th>Production Class</th>
<th>Sampling Project Code</th>
<th>Number of Samples FY 2020</th>
<th>Number of Samples FY 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Planned</td>
<td>Actual</td>
</tr>
<tr>
<td>Beef Cows</td>
<td>NRP_BC</td>
<td>712</td>
<td>731</td>
</tr>
<tr>
<td>Beef Cow – State¹</td>
<td>NRP_BC_S</td>
<td>88</td>
<td>56</td>
</tr>
<tr>
<td>Bob Veal</td>
<td>NRP_BV</td>
<td>356</td>
<td>390</td>
</tr>
<tr>
<td>Bob Veal – State¹</td>
<td>NRP_BV_S</td>
<td>44</td>
<td>0</td>
</tr>
<tr>
<td>Dairy Cows</td>
<td>NRP_DC</td>
<td>712</td>
<td>743</td>
</tr>
<tr>
<td>Dairy Cows – State¹</td>
<td>NRP_DC_S</td>
<td>88</td>
<td>60</td>
</tr>
<tr>
<td>Heifers</td>
<td>NRP_HF</td>
<td>356</td>
<td>418</td>
</tr>
<tr>
<td>Heifers – State¹</td>
<td>NRP_HF_S</td>
<td>44</td>
<td>53</td>
</tr>
<tr>
<td>Steer</td>
<td>NRP_ST</td>
<td>356</td>
<td>390</td>
</tr>
<tr>
<td>Steer - State¹</td>
<td>NRP_ST_S</td>
<td>44</td>
<td>63</td>
</tr>
<tr>
<td>Market Swine</td>
<td>NRP_MS</td>
<td>712</td>
<td>722</td>
</tr>
<tr>
<td>Market Swine - State¹</td>
<td>NRP_MS_S</td>
<td>88</td>
<td>88</td>
</tr>
<tr>
<td>Sows</td>
<td>NRP_SW</td>
<td>712</td>
<td>628</td>
</tr>
<tr>
<td>Sows – State¹</td>
<td>NRP_SW_S</td>
<td>88</td>
<td>45</td>
</tr>
<tr>
<td>Young Chicken</td>
<td>NRP_YC</td>
<td>356</td>
<td>354</td>
</tr>
<tr>
<td>Young Chicken - State¹</td>
<td>NRP_YC_S</td>
<td>88</td>
<td>23</td>
</tr>
<tr>
<td>Whole Chicken</td>
<td>NRP_WC</td>
<td>356</td>
<td>181</td>
</tr>
<tr>
<td>Young Turkey</td>
<td>NRP_YT</td>
<td>712</td>
<td>615</td>
</tr>
<tr>
<td>Young Turkey – State¹</td>
<td>NRP_YT_S</td>
<td>88</td>
<td>7</td>
</tr>
<tr>
<td>Sheep</td>
<td>NRP_SH</td>
<td>100</td>
<td>103</td>
</tr>
<tr>
<td>Lambs</td>
<td>NRP_LA</td>
<td>100</td>
<td>114</td>
</tr>
<tr>
<td>Goats</td>
<td>NRP_GO</td>
<td>300</td>
<td>281</td>
</tr>
<tr>
<td>Roaster Swine</td>
<td>NRP_RS</td>
<td>300</td>
<td>277</td>
</tr>
<tr>
<td>Veal other than bob veal</td>
<td>NRP_FFV, NRP_NFFV</td>
<td>150</td>
<td>116</td>
</tr>
<tr>
<td>Feral Swine</td>
<td>NRP_FS</td>
<td>75</td>
<td>53</td>
</tr>
<tr>
<td>Egg Products</td>
<td>NRP_EG</td>
<td>250</td>
<td>158</td>
</tr>
<tr>
<td>Siluriformes – Domestic</td>
<td>RES_FI</td>
<td>650</td>
<td>578</td>
</tr>
<tr>
<td>Siluriformes – Imports ¹</td>
<td>IMPFISH_CH_E and IMPFISH_CH_W</td>
<td>1,000</td>
<td>1,293</td>
</tr>
<tr>
<td>Production Class</td>
<td>Sampling Project Code</td>
<td>Number of Samples FY 2020</td>
<td>Number of Samples FY 2021</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----------------------</td>
<td>---------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Planned</td>
<td>Actual</td>
</tr>
<tr>
<td>KIS™ Test²</td>
<td>KIS</td>
<td>NA</td>
<td>136,576</td>
</tr>
<tr>
<td>KIS™ Test – Laboratory Confirmation³</td>
<td>KIS</td>
<td>NA</td>
<td>2,779</td>
</tr>
<tr>
<td>Collector Generated Residues</td>
<td>Various</td>
<td>NA</td>
<td>122</td>
</tr>
<tr>
<td>Import Residue</td>
<td>Various</td>
<td>2,000</td>
<td>2,000</td>
</tr>
</tbody>
</table>

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 (MPI) 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 These KIS™ tests are performed by FSIS Office of Field Operations (OFO) IPP in the field and not by the laboratories.

3 FSIS in-plant inspection personnel send positive KIS™ tests to FSIS laboratories for confirmation.

4 Sampling for imports depends on the number of shipments received by country and product.

5 Two unanticipated, intensified import sampling events increased the number of samples for import residue testing.
<table>
<thead>
<tr>
<th>Methods</th>
<th>Number of Animals</th>
<th>Aminoglycosides</th>
<th>Antifungal Dyes</th>
<th>B-agonist</th>
<th>Carbadox</th>
<th>Metals</th>
<th>Multi-residue</th>
<th>Nitrofurans</th>
<th>Pesticides</th>
<th>PFAS</th>
<th>Sulfonamides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef Cows</td>
<td>N= 800</td>
<td>800</td>
<td>-</td>
<td>400</td>
<td>-</td>
<td>100</td>
<td>800</td>
<td>-</td>
<td>400</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bob Veal</td>
<td>N= 400</td>
<td>400</td>
<td>-</td>
<td>200</td>
<td>-</td>
<td>100</td>
<td>400</td>
<td>-</td>
<td>200</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dairy Cows</td>
<td>N= 800</td>
<td>800</td>
<td>-</td>
<td>400</td>
<td>-</td>
<td>100</td>
<td>800</td>
<td>-</td>
<td>400</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Heifers</td>
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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. Table C1 summarizes how resources are attributed to each commodity.

**Table C1: FY 2020 and FY 2021 Sample Numbers for NARMS**

<table>
<thead>
<tr>
<th>Sampling Project Description</th>
<th>Sampling Project Code</th>
<th>Number of Samples FY 2020</th>
<th>Number of Samples FY 2021</th>
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<td>NARMS-BeefCows</td>
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<td>NARMS_BV, NARMS_FFV, NARMS_NFFV</td>
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<td>NARMS_DC</td>
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<td>982</td>
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<td>NARMS-Heifers</td>
<td>NARMS_HF</td>
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<td>494</td>
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<td>NARMS-Steers</td>
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<td>NARMS-Mesenteric Lymph Nodes in Beef Cow, Dairy Cow, Heifer, and</td>
<td>NARMS_BC_MLN, NARMS_DC_MLN, NARMS_HF_MLN, NARMS_ST_MLN</td>
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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 2020 and FY 2021.

### Table D1: FY 2020 and FY 2021 Sample Numbers for FSIS Sampling Programs other than Microbiological and Chemical Residues

<table>
<thead>
<tr>
<th>Sampling Project Description</th>
<th>Sampling Project Code</th>
<th>Number of Samples FY 2020</th>
<th>Number of Samples FY 2021</th>
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<tr>
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<td>Label Verification – Allergens⁵</td>
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<td>Label Verification – Antibiotic Free⁵</td>
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Abbreviation: AMR, advanced meat recovery.

¹ FSIS collects samples in regulated establishments to test for AMR processes 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 in the field 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:** Product trimmings produced from cattle slaughtered onsite.

**Bench Trim:** Product trimmings derived from cattle not slaughtered onsite (i.e., purchased product).

**Comminuted:** Product that has been ground, mechanically separated, or hand- or mechanically 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 in order 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 standards or moving windows.

**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. In order 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. A FSIS user may not be able to schedule all of the samples distributed to a particular establishment due to factors such as eligible project availability and other inspection activities.

**Windows:** An established timeframe FSIS uses to calculate categorization. For example, poultry performance standards use the results from the past 52 weeks to determine what category the establishment is.
References

**Links to Agency Planning Documents**

*FY 2017-2021 FSIS Strategic Plan:*


**Links to Agency Sampling Plans and Programs**


*Food Safety and Inspection Service Microbiological and Residue Sampling Programs:*

**Links to Posted Sampling Datasets**


**Links to Agency Directives**

*FSIS Directive 10,400.1:*

**Links to NARMS information**

CDC NARMS website: [www.cdc.gov/narms/reports/](www.cdc.gov/narms/reports/)

FDA NARMS website: [www.fda.gov/AnimalVeterinary/SafetyHealth/AntimicrobialResistance/NationalAntimicrobialResistanceMonitoringSystem/default.htm](www.fda.gov/AnimalVeterinary/SafetyHealth/AntimicrobialResistance/NationalAntimicrobialResistanceMonitoringSystem/default.htm)