

UNITED STATES DEPARTMENT OF AGRICULTURE
FOOD SAFETY AND INSPECTION SERVICE
WASHINGTON, DC

FSIS DIRECTIVE

10,100.1
Revision 3

4/10/24

FSIS CECAL SAMPLING UNDER THE NATIONAL ANTIMICROBIAL RESISTANCE MONITORING SYSTEM SURVEILLANCE PROGRAM

I. PURPOSE

This directive provides instruction to Veterinary Medical Officers (VMOs), Supervisory Consumer Safety Inspectors (SCSIs) and Consumer Safety Inspectors (CSIs) for the collection of National Antimicrobial Resistance Monitoring System (NARMS) cecal samples at selected slaughter establishments. FSIS is reissuing this directive to specify the personnel who may collect cecal samples. This directive clarifies that the FSIS NARMS program includes isolations of *Salmonella*, *Escherichia coli* (*E. coli*), *Campylobacter*, and *Enterococcus* spp. from intestinal contents and the U.S. Food and Drug Administration's (FDA) Center for Veterinary Medicine (CVM) NARMS program includes the same target organism isolations from products collected at retail. Further, NARMS objectives are supported by FSIS antimicrobial resistance *Salmonella* and *Campylobacter* data isolated from its verification sampling programs.

KEY POINTS:

- *Announces that Supervisory Consumer Safety Inspectors (SCSIs) and Consumer Safety Inspectors (CSIs) are eligible to collect NARMS cecal samples*
- *Refers to Veterinary Medical Officers (VMOs), which includes all 0701 series providing veterinary coverage in establishments*
- *Clarifies that the NARMS program includes isolations of Salmonella, Escherichia coli (E. coli), Campylobacter, and Enterococcus spp. from FSIS intestinal content samples as well as Salmonella and Campylobacter from FSIS raw product verification samples and FDA retail product samples.*

II. CANCELLATION

FSIS Directive 10,100.1 Rev. 2, *FSIS Cecal Sampling Under the National Antimicrobial Resistance Monitoring System (NARMS) Surveillance Program*, 06/29/2022

III. BACKGROUND

A. 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 was established in 1996 to track antimicrobial susceptibility among foodborne enteric bacteria from humans, retail meats, and food animals. The CDC's NARMS program focuses on bacterial isolates from case-patients. The FDA's CVM NARMS program focuses on meat and poultry products available at retail, and the USDA's FSIS NARMS program focuses on food animals at slaughter with intestinal (cecal) content samples and routine

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raw product verification samples. The NARMS programs isolate *Salmonella*, *E. coli*, *Campylobacter*, and *Enterococcus* spp. from these samples. FSIS performs antimicrobial susceptibility testing (AST) and Whole Genome Sequencing (WGS) on these isolates. The antimicrobial resistance data generated from AST or WGS from FSIS isolates supports NARMS programs objectives. Additional information and web links are available on the [FSIS NARMS](#) web page.

B. In addition to monitoring antimicrobial susceptibility, the NARMS partners collaborate on epidemiologic and microbiologic studies and conduct research to better understand the emergence, persistence, and spread of antimicrobial resistance among foodborne bacteria. Additional information on the FDA NARMS program is available at [The National Antimicrobial Resistance Monitoring System](#). Information on the CDC NARMS program is available at [National Antimicrobial Resistance Monitoring System for Enteric Bacteria \(NARMS\)](#).

C. The FSIS NARMS sampling program is being conducted in support of the [National Action Plan for Combating Antibiotic Resistant Bacteria \(CARB\)](#) and [USDA Strategy to Antimicrobial Resistance, 2023](#). This cecal sampling program provides data on the presence and antimicrobial resistance profile of selected enteric microorganisms in food animal slaughter classes. As part of this sampling program, FSIS's Office of Public Health Science's (OPHS) Eastern Laboratory (EL) in Athens, Georgia processes samples of cecal contents collected by VMOs, SCSIs or CSIs to test for the presence of *Salmonella*, *E. coli*, *Campylobacter*, and *Enterococcus* spp. This FSIS laboratory performs the primary isolation and identification of these microorganisms and completes further characterization of the isolates to include AST, WGS, and WGS-based serotype interpretations. Similarly, FSIS conducts AST and/or WGS on *Salmonella* and *Campylobacter* isolates from FSIS verification product samples. Together, the resulting cecal and product AST and/or WGS data are used to monitor trends in antimicrobial resistance and susceptibility among enteric bacteria in food animals. These data are used by the FDA in its animal antimicrobial drug approval and evaluation processes.

IV. ESTABLISHMENT ELIGIBILITY FOR THE FSIS NARMS SAMPLING PROGRAM

A. Livestock and poultry slaughter establishments are eligible for the NARMS sampling program based on slaughter data in the FSIS Public Health Information System (PHIS), including the animal classes slaughtered and annual slaughter volumes. Sampling tasks for the NARMS sampling program will be assigned at the frequencies in the chart below, using the previous 12 months of slaughter data. The number of sampling tasks assigned in PHIS may vary from the monthly targets below to reach annual isolate targets:

Slaughter Volume	Maximum Number of Sampling Tasks per Month per Sampling Project
Top 25% of Slaughter Establishments	4
Second 25% of Slaughter Establishments	2
Lowest 50% of Slaughter Establishments	1

B. VMOs/SCSIs/CSIs will receive sampling tasks through PHIS and are to order supplies for initial sampling event from the EL ([see Section VI](#)). For each event thereafter, supplies will be automatically repacked and sent back to the establishment. VMOs/SCSIs/CSIs are to respond to each sampling task using the instructions provided in this directive.

V. DIRECTIVES AND REVIEW OF TRAINING MATERIALS

VMOs/SCSIs/CSIs assigned to establishments eligible for the FSIS NARMS sampling program are to be familiar with the following FSIS issuances and the information provided in this directive:

1. [FSIS Directive 13000.2](#), *Performing Sampling Tasks in Official Establishments Using the Public Health Information System*;
2. [FSIS Directive 7355.1](#), *Use of Sample Seals for Laboratory Samples*; and
3. [NARMS Training Video](#) - Link will bring up the IPP Help Sampling page. Click on the NARMS Sampling Icon, then the NARMS video.

VI. SAMPLING TASK ASSIGNMENT

A. VMOs/SCSIs/CSIs will receive a PHIS alert when NARMS sampling tasks have been distributed. The sampling tasks are directed tasks on the establishment task list with one or more of the following sampling project codes:

Project Code	Slaughter Class to Sample	Number of Animals/Cecal Contents Represented in Each Sample
NARMS_YC	Young Chicken	5
NARMS_YT	Young Turkey	
NARMS_DC	Dairy Cow	1
NARMS_BC	Beef Cow	
NARMS_ST	Steer	
NARMS_HF	Heifer	
NARMS_MS	Market Swine	
NARMS_SW	Sow	
NARMS_BV	Bob Veal*	1
NARMS_FFV	Formula-Fed Veal*	
NARMS_NFFV	Non-Formula-Fed Veal*	
NARMS_SH	Sheep*	
NARMS_LB	Lamb*	
NARMS_GO	Goat*	

* FSIS may assign sampling of these slaughter classes periodically during certain years; FSIS will notify VMOs/SCSIs/CSIs via an FSIS Notice before assigning these tasks.

B. The poultry slaughter classes (young chicken and turkey), five ceca, from the same lot listed above are

to be composited into the supplied specimen cups as one sample. All of the livestock slaughter classes listed above require one sample of cecal contents from one carcass per sampling task.

C. If a scheduled task will not be collected on the date reserved in the task calendar, the VMOs/SCSIs/CSIs are to remove or reschedule that task as soon as they become aware of the change so that laboratory capacity is as accurate as possible and space is free for additional VMOs/SCSIs/CSIs task scheduling.

D. If sampling tasks remain in the task list at the end of the sampling window, VMOs/SCSIs/CSIs are to cancel them from the task list and provide the correct reason. If none of the listed reasons are appropriate, VMOs/SCSIs/CSIs are to select “Not collected for miscellaneous reasons” and provide additional details in the text box provided (see Figure 1). VMOs/SCSIs/CSIs are not to allow sampling tasks to remain at the end of the sampling window.

Figure 1: Cancellation Window in PHIS

The screenshot shows a web interface for cancelling a task. On the left, there are two labels: "Select Reason:" and "Describe, If Other:". To the right of "Select Reason:" is a dropdown menu. The menu is open, showing a list of reasons. The first option, "Requested sample unavailable during sampling timeframe", is highlighted in yellow. Below it are several other options: "Requested sample/product never slaughtered/produced", "Not collected for miscellaneous reasons", "Plant closed/no kill", "FedEx did not pickup sample", "Inspection withdrawn", "Insufficient time to collect sample", "Inspection suspended officially", and "Other". To the right of the dropdown menu is a text input box.

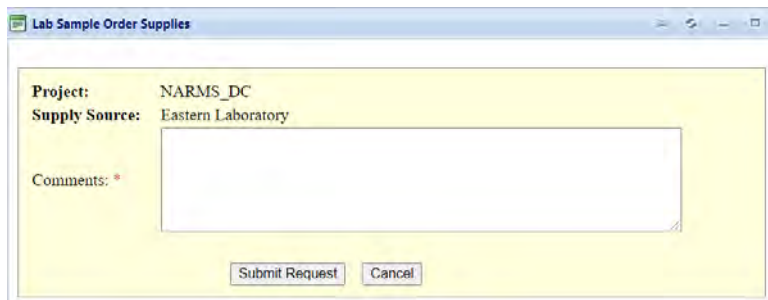
E. Under extenuating scheduling circumstances (e.g., intermittent producers in which there is short notice for a sampling opportunity and there is no lab capacity), VMOs/SCSIs/CSIs are to consult [IPP Help's Requesting Lab Capacity](#) section to determine the solution. VMOs/SCSIs/CSIs are to use the laboratory inquiry mailing list to reach the NARMS point of contact: [FSIS – Laboratory Inquiry – Eastern Lab](#).

VII. ORDERING SAMPLING SUPPLIES

A. VMOs/SCSIs/CSIs are to order sampling supplies through the PHIS task calendar. To order sample supplies, VMOs/SCSIs/CSIs are to right-click on the scheduled NARMS sampling task and select **Order Supplies** from the drop-down menu. A pop-up window will appear that displays the project code and the name of the FSIS Laboratory that will fill the sampling supply request; see Figure 2 below. When necessary, VMOs/SCSIs/CSIs are to enter requests for specific supplies (e.g., extra gloves) in the **Comments** field and click **Submit Request**. If no specific supplies are needed, enter “N/A” into the **Comments** field and click **Submit Request**. A confirmation message will appear.

B. For sampling, VMOs/SCSIs/CSIs are to request NARMS sampling supplies necessary for the slaughter class scheduled to sample at least 72 hours before the scheduled sample collection date. As the laboratory receives samples from VMOs/SCSIs/CSIs, they will automatically repack the box with fresh supplies and send it back to the establishment from which it came. VMOs/SCSIs/CSIs are to use only the sampling supplies provided by the EL that are specific to the slaughter class scheduled for sample collection.

Figure 2. Pop-up Window for Ordering Supplies



Lab Sample Order Supplies

Project: NARMS_DC

Supply Source: Eastern Laboratory

Comments: *

Submit Request Cancel

C. As an alternative in situations where VMOs/SCSIs/CSIs are unable to order supplies through the task calendar (e.g., PHIS connectivity issues), VMOs/SCSIs/CSIs may send a request for sampling supplies using Outlook to the [FSIS - Sampling Supplies - Eastern Lab](#) mailbox. VMOs/SCSIs/CSIs are to include “NARMS Sampling Supplies” in the subject heading of the email. The body should include the establishment’s name and number, the project code, and the VMOs/SCSIs/CSIs’ contact name and telephone number, along with a list of the supplies needed.

D. VMOs/SCSIs/CSIs are to refer to the Sampling Supply List in the [Appendix](#) for a list of sampling supplies provided by the Eastern Laboratory. These supplies do not include isopropyl alcohol, isopropyl alcohol wipes or pads, or a caddy. VMOs/SCSIs/CSIs are to attempt to order these supplies through the Material Management Service Center (MMSC) as available; otherwise, they must be procured locally. VMOs/SCSIs/CSIs are to contact the Frontline Supervisor (FLS) for guidance on obtaining these supplies.

VIII. SAMPLE SELECTION

A. VMOs/SCSIs/CSIs are to refer to the NARMS sampling task for information on the slaughter class to be sampled. VMOs/SCSIs/CSIs are to randomly select from the lots of animals corresponding to the NARMS sampling project codes (found in [Section VI](#)) presented for slaughter on the scheduled sampling day and that have passed ante-mortem inspection. VMOs/SCSIs/CSIs are to note the lot information and animal identification information for the animal(s) selected and record this information in the appropriate data fields in the Sample Collection screen in PHIS for the sampling task.

1. One (1) livestock carcass or five (5) poultry carcasses are to be selected for each NARMS project sample collection event. VMOs/SCSIs/CSIs are to not retain or require that establishments hold carcasses or product produced from the sampled carcass(es).

B. VMOs/SCSIs/CSIs are to perform sample collection in a location and in a manner that ensures their personal safety, maintains sanitary conditions, prevents the contamination of edible product, and does not interfere with inspection activities. Examples of sampling locations may include, but are not limited to, the veterinary disposition area on the kill floor or the intestine harvesting area (in an establishment that harvests intestines for edible purposes).

C. VMOs/SCSIs/CSIs are to work with establishment management to identify:

1. The point in the post-mortem slaughter process where the viscera/large intestines will be available to FSIS for ceca sampling;
2. The location in the establishment where the FSIS sample collection will be performed;

3. The establishment employee designated to provide FSIS with the selected viscera and transport it to the pre-determined sample collection location when the location is an alternative to designated VMO/SCSI/CSI exam and disposition location; and
4. A cleanable work surface (i.e., table) in the sample collection location for staging the sampling supplies and sample collection.

IX. SAMPLE COLLECTION PREPARATION (ALL SLAUGHTER CLASSES)

A. VMOs/SCSIs/CSIs assigned to collect the NARMS cecal sample are responsible for collecting the samples and are not to delegate this task to any establishment employee. VMOs/SCSIs/CSIs are to contact their supervisory chain of command if there is a need to delegate the sampling collection.

B. VMOs/SCSIs/CSIs are to freeze the gel coolant packs and pre-chill the shipping container prior to sample collection.

C. In preparation for cecal sampling, VMOs/SCSIs/CSIs are to review the [NARMS Training video](#) within IPP Help to understand how to use the sampling supplies to retrieve and ship cecal samples to FSIS's EL. When tasks to sample minor species are assigned in PHIS (veal, goat, sheep, etc.), VMOs/SCSIs/CSIs are to review the NARMS Training Cattle Video within IPP Help. Cecal sampling instructions are also available in the [Appendix](#).

D. Sample collection is to be performed Monday through Friday. Samples collected Monday through Thursday can be sent to the laboratory via Next Day Shipping. Samples collected on Fridays are to be held refrigerated under FSIS control until shipping on Monday. More information on shipping of NARMS cecal samples can be found in [Section XI](#) of this directive.

X. COMPLETING THE SAMPLING TASK IN PHIS

A. VMOs/SCSIs/CSIs are to follow the instructions provided in [FSIS Directive 13000.2](#) and in the [PHIS User Guide](#) (level-2 e-authentication is needed to access this site) for accepting, scheduling, and completing the sampling task using PHIS. To assist in the sampling task, VMOs/SCSIs/CSIs may choose to print a copy of the sample form from PHIS for use during sample collection and to document lot information to enter into PHIS.

B. VMOs/SCSIs/CSIs are to enter lot information, the owner/producer's name and address, and animal identification information into the appropriate Sample Collection data fields in PHIS for each sample collected. VMOs/SCSIs/CSIs are to ensure that all requested information is entered into PHIS. When sample collection data entry is completed, VMOs/SCSIs/CSIs are to click the **"Submit to Lab"** button, print a finalized form, and sign and date the form. PHIS will display a message stating that the sample collection information has been successfully submitted. VMOs/SCSIs/CSIs are to place the signed sample form in the sample box under the foam plug with the corresponding sample.

XI. SHIPPING THE SAMPLE

A. VMOs/SCSIs/CSIs are to use only the shipping materials provided by the FSIS laboratory specific to the NARMS sampling program and refer to [FSIS Directive 7355.1](#), for complete instructions on the proper use of sample seals.

B. VMOs/SCSIs/CSIs are to ship samples via overnight FedEx courier the same day as they collect

the sample, when possible. Samples collected that can be properly packed for shipment prior to FedEx pickup time are to be shipped the same calendar day the samples were collected. Samples collected after FedEx pickup are to be held refrigerated under FSIS control until the next FedEx pickup. VMOs/SCSIs/CSIs are not to ship any samples Friday for delivery on Saturday. Any Friday collected samples are to be held in a refrigerator and shipped on Monday. VMOs/SCSIs/CSIs are also not to ship a sample on Saturday or the day before a Federal holiday.

C. Upon completion of the sample collection, VMOs/SCSIs/CSIs are to perform the steps below.

1. Apply one small barcode label from FSIS Form 7355-2A/2B, Laboratory Sample Container Seal Set, to the sample collection container.
2. Place the sample collection container in a quart-size zipper lock bag. Expel excess air from the bag and close the bag using the zipper lock closure. Place the bagged specimen into the gallon-size zipper lock bag, expel the excess air from the bag, and close the bag using the zipper lock closure.
3. Apply the medium sized bar-coded FSIS Laboratory Sample Identification Label (FSIS Form 7355-2B) to the gallon-size zipper lock bag.
4. Affix one small, bar-coded sample label from FSIS Form 7355-2A/2B sample seal set to the completed and signed printed sample form.
5. Affix the bar-coded label in the space provided at the top center of the sampling form.
6. Place the completed sample form in the plastic sleeve provided.
7. Retrieve the frozen gel coolant packs from the freezer and retrieve the pre-chilled shipping container.
8. Place the cardboard separator and absorbent pad on the bottom of the shipping container.
9. Place the frozen gel coolant pack on top of the absorbent pad and then place the corrugated cardboard pad on top of the frozen gel coolant pack. Place the bagged sample on top of the corrugated cardboard pad.

NOTE: When needed in the warmer months, place a second frozen gel coolant pack in the shipping container to ensure that the sample arrives at the laboratory at an acceptable temperature.

10. Review the information on the pre-printed carrier shipping billable stamp (e.g., FedEx billable stamp) provided with the sampling supplies, and ensure that the sample is addressed to the FSIS EL. Enter the return address information, establishment number, and the USDA phone number where the VMOs/SCSIs/CSIs may be reached on the pre-printed billable stamp.
11. Place the completed sample form and any unused sample seals in the container.
12. Insert the foam plug and press down to minimize the space between the sample and foam plug. If the shipping container does not have a foam plug, place the insulated lid on the container. Do not overfill the shipping container.

NOTE: Do not tape or wrap the samples or use any newspaper or similar material as packing material. Use of such materials may result in the sample being discarded by the laboratory.

13. Complete the information on the large, bar-coded seal from the same FSIS Form 7355-2A/2B sample seal set, sign the seal, and affix the signed, large bar code seal across the seam of the closed sample box flap.

- a. For shipping containers with self-sticking closures, apply the seal across the closed inner flap of the box parallel to the edge of the closed flap. Then close the outer flap over the seal.

14. Affix the pre-printed carrier shipping billable stamp on the shipping container and remove any old stamp receipts and carrier shipping bar codes from the container.

15. Ensure that the sample remains under FSIS control until pickup by the carrier (e.g., FedEx).

D. VMOs/SCSIs/CSIs are to ensure that the sample container lid is securely closed prior to shipping. If the sample container is leaking upon arrival, the laboratory may discard the sample. VMOs/SCSIs/CSIs are to avoid storing shipping containers near heaters or in areas exposed to excessive heat.

E. Regarding the return of unused sample supplies:

1. VMOs/SCSIs/CSIs are to **hold** any unused sample supplies for future NARMS sampling tasks unless otherwise advised that no additional NARMS sampling tasks will be assigned to the establishment.
2. If at any time there is a need to return unused sampling supplies, VMOs/SCSIs/CSIs are to send a request for a Ground shipping label by email through the [FSIS - Sampling Supplies - Eastern Lab](#) mailbox in Outlook.
3. VMOs/SCSIs/CSIs are to include the establishment name, establishment number, mailing address, and project code in the email request. VMOs/SCSIs/CSIs are to return any unused sampling supplies for the FSIS NARMS sampling program via ground shipping to the address below.

USDA/FSIS/Eastern Laboratory
Attn: NARMS-Microbiology
Russell Research Center
950 College Station Rd.
Athens, GA 30605-2720

XII. SAMPLE RESULTS

NARMS cecal results are now available through the PHIS Industry Sampling Report. Industry users are now able to access this report through PHIS.

XIII. QUESTIONS

Refer questions regarding this notice to your supervisor or as needed to the Office of Policy and Program Development through [askFSIS](#) or by telephone at 1-800-233-3935. When submitting a question, complete the [web form](#) and select Sampling as the Inquiry Type.

NOTE: Refer to [FSIS Directive 5620.1](#), *Using askFSIS*, for additional information on submitting questions.

A handwritten signature in black ink, appearing to read "Rachel A. Edelstein". The signature is fluid and cursive, with the first name "Rachel" being the most prominent part.

Assistant Administrator
Office of Policy and Program Development

FSIS 10100.1 NARMS Appendix

Cecal Sampling Instructions

Sampling Supplies provided by the FSIS Laboratory:

- Shipping container
- Sterile 120 ml plastic screw-top sample containers (2)
- Gallon-size zipper lock bag (1)
- Quart-size zipper lock bag (1)
- Scissors (1 pair for poultry sample collection, 2 pairs for cattle and swine sample collection) (to be returned to lab with the sample)
- Non-sterile examination gloves (8)
- 2' x 3' plastic pad (1)
- Sterile gauze pads (2)
- 6" x 12" plastic sleeve for sampling form
- FSIS Form 7355-2A/2B (sample seals)
- Absorbent pad for shipping container
- Cardboard separator(s)
- Gel coolant pack (1)
- FedEx billable stamp (pre-printed)

Supplies Locally Procured - submit reimbursement Form 1164 to District Office.

- Bottle of 70% Isopropyl Alcohol
- Isopropyl alcohol wipes or pads
- Caddy or tote - if needed



Upon receipt of the sampling supplies:

1. Verify receipt of all supplies needed to perform the sample collection.
2. Remove gel coolant packs from the shipping container and place them in the freezer at least 24 hours prior to sample collection. Pre-chill the shipping container.



On the day of sample collection:

1. Review the sampling steps for the applicable species.
2. Take supplies to the pre-determined sample collection location using a caddy or tote.
3. If needed, wipe down the table that will be used as the work surface.
4. Lay out the plastic pad on the work surface to provide a clean surface and set out the sampling equipment.





NOTE: The type of scissors provided by the FSIS Laboratory may vary and may not be the same as those shown in the sampling instruction photos.

5. Label the sample container and quart-size zipper lock bag with the form number to match the sample with the sample submission form.




6. Loosen the screw cap on the sample container but do not remove it. Set it on the plastic pad.



<p>7. Lay down a sterile gauze pad on the plastic pad. Carefully clean the tips and blades of scissors by using one or more alcohol wipes and position the blades of the scissors on the sterile gauze pad.</p> <p>For cattle and swine sample collection, repeat this cleaning step on the second pair of scissors provided.</p>	
<p>8. Wash hands with soap and water. Don two pairs of gloves in an aseptic manner.</p> <p>NOTE: Resources for gloving are available on IPP Help</p>	

B. POULTRY SAMPLE COLLECTION (Young Chicken and Young Turkey)

<p>1. Randomly select a set of viscera with intact ceca at the pre-determined sample selection location and take it to the sample collection location. If the selected viscera set is visibly contaminated with feed, ingesta, feces, bile, etc., select the next uncontaminated viscera.</p>	
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2. Rinse gloves with 70% isopropyl alcohol.

NOTE: If one or both pairs of gloves become contaminated during initial collection of the viscera, aseptically remove the outer pair of gloves by carefully rolling them as shown in the second photo of this step, before rinsing the gloves.



3. With one hand, hold both ceca about 1" below their attachment to the ileum. This hand will be stationary and will hold the ceca throughout the procedure. With the other hand, carefully strip away the mesentery from the ceca without separating them from their attachment to the ileum. Milk the contents of the ceca down towards the apex using the same hand.



4. Gently wipe around the sphincter of the cecum using an alcohol wipe or pad.



5. Detach both ceca from their attachments to the small intestine by cutting through the sphincter area of each.



6. Place both ceca into the plastic specimen container without draining them.

NOTE for Turkey Sampling:



Both ceca are to be submitted without draining them. However, if the ceca are too large to fit into the sample container, drain the cecal contents into the sample container as follows:

- a. Milk the contents to the blind pouches.
- b. Rinse the end of the ceca with alcohol and wipe off excess alcohol with sterile gauze.
- c. Position the ceca over the open collection bottle and carefully cut a small opening in the end of the ceca and let contents pour into the collection bottle. Repeat this process for the second ceca.

7. Repeat steps 1 – 6 until samples have been collected from 5 separate carcasses.

NOTE: The samples collected from each carcass are to be placed in the same sample collection container and submitted as a composited sample.



<p>8. Replace the sample container lid and close tightly.</p>	
<p>9. When sample collection is completed, wipe the scissors clean with alcohol wipes. Wrap the scissors in several layers of paper towels and place them into the shipping container with the sample.</p> <p>NOTE: The scissors must be returned to the FSIS Laboratory in the shipping container with the sample.</p> <p>10. Discard the used disposable sampling supplies (wipes, plastic pad, and exam gloves) into an appropriate trash receptacle.</p>	

C. LIVESTOCK SAMPLE COLLECTION (Beef Cow, Dairy Cow, Steer, Heifer, Veal, Sheep, Lamb, Goat)

1. Randomly select an intact intestine without ingesta or bile contamination at the predetermined sample selection location. If the randomly selected intestine is visibly contaminated with feed, ingesta, feces, bile, etc., select the next uncontaminated one.
2. Direct the randomly selected intestine to the sample collection location (See Section VII.C.3)
3. Grasp the apex of the cecum with one hand and detach it by gently breaking down connective tissue with your other hand. Scissors may be needed to cut through the connective tissue. Continue to grasp the cecum with the same hand throughout the sample collection.
4. Elevate the apex to allow the contents to flow into the main body of the cecum.



5. Rinse gloves with 70% isopropyl alcohol.

NOTE: If one or both pairs of gloves become contaminated during initial collection of the viscera, aseptically remove the outer pair of gloves by carefully rolling them as shown in the second photo of this step, before rinsing the gloves.



6. Pour isopropyl alcohol over the apex of the cecum at the selected incision site. Let sit for 10 seconds.





7. Wipe area once with a sterile gauze pad.




8. Using scissors, make a 3-inch longitudinal incision into the cecum so that the cecal contents are easily visible.

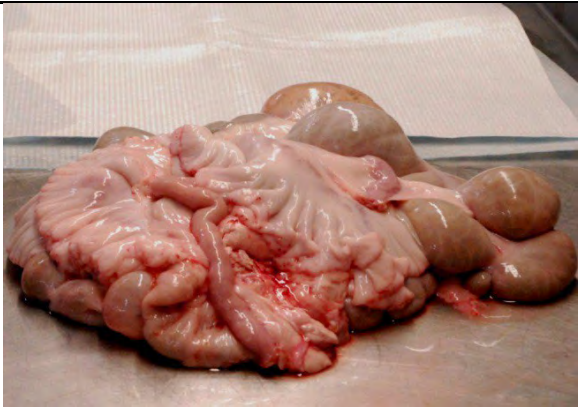

Use the second pair of scissors provided with the sample if the first pair becomes contaminated or is dropped during the course of sample collection.



	
<p>9. Collect at least 30 ml. of cecal contents using one of the following methods, depending upon cecal content consistency:</p> <p>If the contents are a pasty consistency: Aseptically withdraw cecal contents, and place the cecal contents into the sample container. Repeat 3-5 times until at least 30 ml of cecal contents is collected.</p> <p>If the contents are a watery consistency: Position the cecum over the edge of the sampling area. Using a non-bargaining unit assistant, position the open sample container below the cecum and direct the incision area downward to allow the cecal contents to flow out of the incision site and into the container. Cecal contents should flow freely into the specimen container while allowing you to control flow and prevent spillage.</p> <p>Do not allow the cecum to come in direct contact with the inner surface of the sample container.</p>	 <p><i>This photo above shows an assistant holding the sample container during sample collection.</i></p>

<p>10. Replace the sample container lid and close tightly. The container should be $\frac{1}{4}$ to $\frac{1}{2}$ full.</p>	
<p>11. When sample collection is completed, wipe the scissors clean with alcohol wipes. Wrap both scissors in several layers of paper towels and place them into the shipping container with the sample.</p> <p>NOTE: Both scissors must be returned to the FSIS Laboratory in the shipping container with the sample.</p> <p>12. Discard the disposable used sampling supplies (wipes, plastic pad,, and exam gloves) into an appropriate trash receptacle.</p>	

D. SWINE SAMPLE COLLECTION (Market Swine and Sows)

<p>1. Randomly select an intact intestinal tract at the pre-determined sample selection location. If the selected intestinal tract is visibly contaminated with feed, ingesta, feces, or bile, select the next one that is not contaminated.</p>	
<p>2. Direct the randomly selected intestine to the sample collection location. (See Section VII.C.3).</p> <p>3. Rinse gloves with 70% isopropyl alcohol.</p> <p>NOTE: If one or both pairs of gloves become contaminated during initial collection of the viscera, aseptically remove the outer pair of gloves by carefully rolling them as shown in the second photo of this step, before rinsing the gloves.</p>	

	
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4. Grasp the apex of the cecum with one hand and detach it by gently breaking down connective tissue with your other hand. Scissors may be needed to cut through the connective tissue. Continue to grasp the cecum with the same hand throughout the sample collection.



5. Elevate the apex to allow the contents to flow into the main body of the cecum.




6. Pour isopropyl alcohol over the apex of the cecum at the proposed incision site. Let sit for 10 seconds and wipe once with a clean gauze pad.



7. Using scissors, make a one-inch incision into the apex of the cecum along a cecal band.

NOTE: Use the second pair of scissors provided with the sample if the first pair becomes contaminated or is dropped during the course of sample collection.



<p>8. Position the main body of the cecum over the edge of the table. Position the open sample container below the cecum.</p> <p>NOTE: the sample container may be held by a non-bargaining unit assistant or positioned on a lower stationary surface.</p> <p>9. Carefully direct the incision over the sample container to catch the cecal contents and prevent spillage of contents onto the floor. Slowly tilt the cecum downward to allow cecal contents to flow freely into the specimen container.</p> <p>Collect at least 30 ml of cecal contents.</p> <p>If you are unable to obtain enough cecal content through pouring, use your free hand to milk the cecal contents out of the cecum, through the incision area, and into the sample container.</p> <p>Do not allow the cecum to come in direct contact with the inner surface of the sample container.</p>	 <p><i>The photo above shows an assistant holding the sample container during sample collection.</i></p>
<p>10. Replace the sample container lid and close tightly. The sample container should be ¼ to ½ full.</p>	

11. When sample collection is completed, wipe the scissors clean with alcohol wipes. Wrap both scissors in several layers of paper towels and place them into the shipping container with the sample.

NOTE: Both scissors must be returned to the FSIS Laboratory in the shipping container with the sample.

12. Discard the disposable used sampling supplies (wipes, plastic pad, and exam gloves) into an appropriate trash receptacle.

