



FSIS Public Meeting

Control of *E. coli* O157:H7



FSIS Employee Training & Outreach to Small and Very Small Plants



FSIS Employee Training

- Entry level CSIs and PHVs who collect *E. coli* O157:H7 samples receive classroom training on Directive 10,010.1 that includes:
 - Raw ground beef sampling
 - Beef manufacturing trimmings
 - Follow up sampling after positive testing results
 - Testing components other than trim and imported raw ground beef
- For Notice 18-07 on sampling beef manufacturing trimmings, including subprimal cuts frequently used as components of raw ground beef, such as boneless chuck, FSIS employees are instructed to review the training CD-ROM before collecting samples.



Excerpts from CD-ROM FSIS Employee Training on Notice 18-07

Assemble Supplies

Gather all the necessary supplies and transport them to the sampling location.

You may use a cart or table on which to place your supplies. The surface of the table or cart must be sanitized.

Sanitize the table or cart surface the same way you sanitized your caddy, knife, hook and/or tongs.



Aseptically Collect the Sample

Be sure to properly put on the gloves and handle all sanitized surfaces so that you do not contaminate them. Only handle sanitized surfaces and the meat you are collecting.





Collect the Sample N60

Each sample piece dimensions are 1/8" thick by about 4" long (approximate weight is 15 g).

From the top of the container, aseptically collect enough pieces of product to equal approximately 2 pounds total (60 pieces).

Place the sample in the whirl-pak bag.





Collect the Sample N60

From the top of each container, aseptically collect the appropriate number of pieces of trim or subprimal based on the number of containers selected.

After collecting the appropriate number of sample pieces, move to the next container.

The total weight of all 60 pieces* should be about 2 pounds.

*Regardless of how many pieces you collect per container, your final amount should be 60 pieces.



Collect the Sample N60

Use the sanitized hook or tongs to lift a piece of meat off the top of the container.

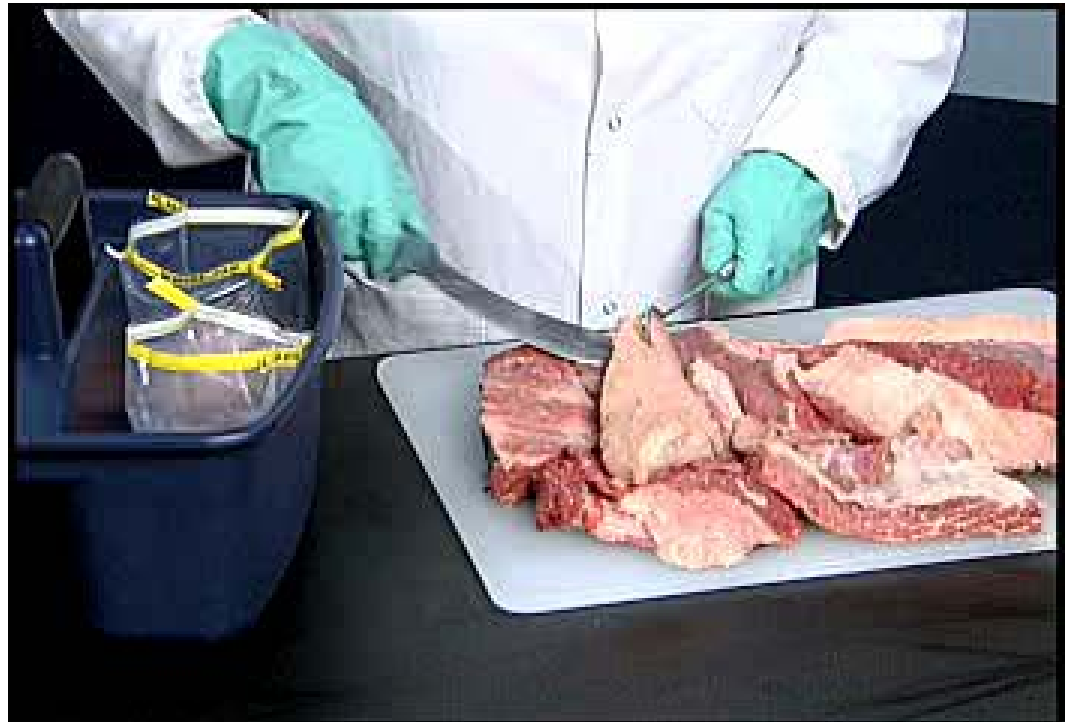
Cut off about a thumb-size sample (4 inches by 1/8 inch). It is very important to get as much of the trim or subprimal outer surface as possible. The surface is more important than how deep you cut.

Put the piece into the sample whirl-pak bag.

Select a different piece of meat and repeat your sampling procedure.

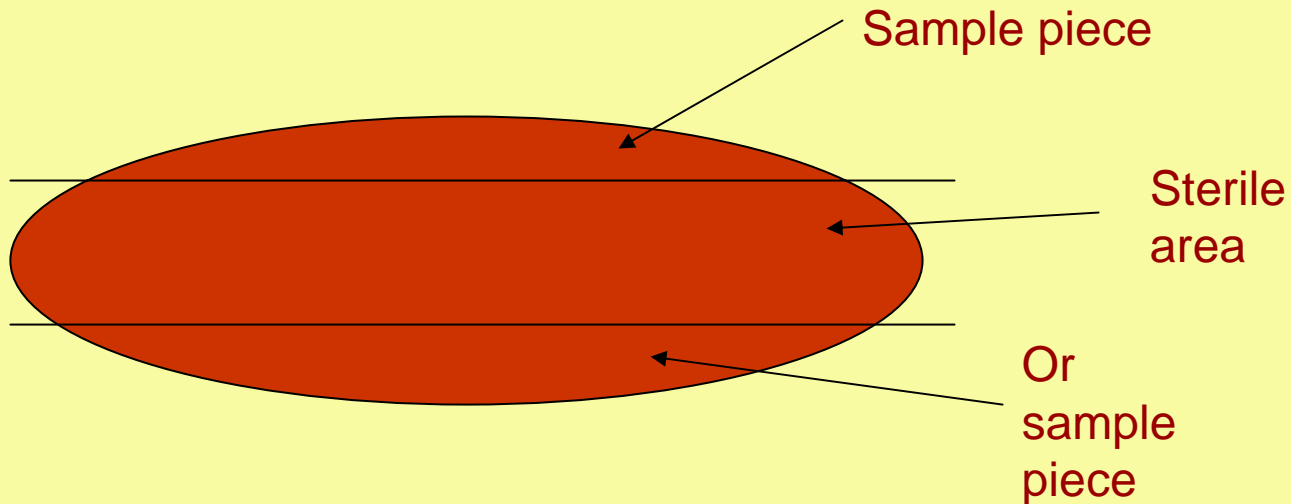


Collect the Sample N60



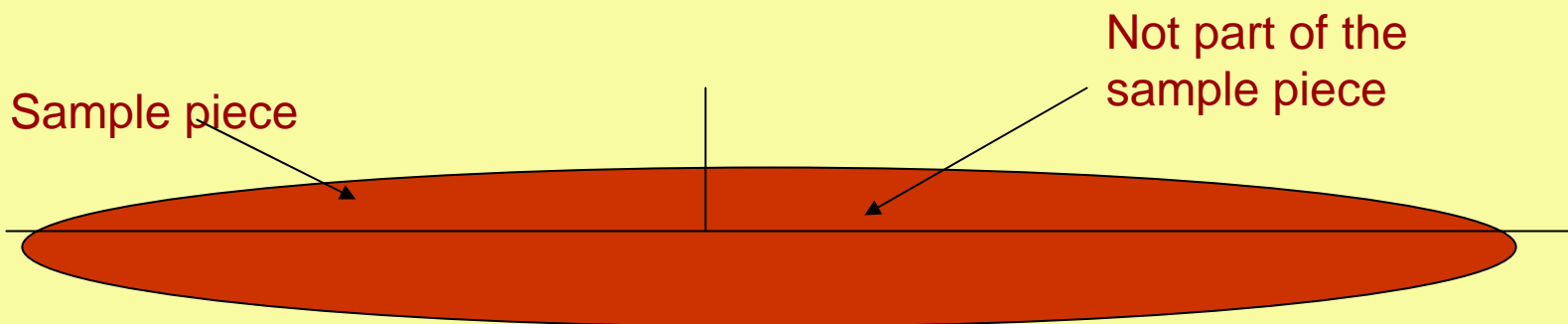


Be sure to get as much “original” surface area as possible. In other words, don't cut a new piece off under where you'd just removed the first slice. That area under, or next to, your cut should be relatively sterile.





If the beef trim or subprimal is large enough, take only part of the surface.





Store the Sample

Check the product temperature of the meat on the top of the container **after** you have collected and bagged the sample.

Do not take the temperature of the actual sample.

If the product is warmer than 40°F, place the bag containing the sample in a cooler to chill before shipping.



Be sure your thermometer is cleaned and sanitized.



Before Packing the Sample

Inspection program personnel are not to wait until the establishment completes pre-shipment review before submitting raw beef samples to the laboratory for *E. coli* 0157:H7 testing.

Rather, before actually collecting and packing the sample for submittal to the lab, be sure the establishment has completed all interventions, except for any intervention that is based on microbiological test results.



Use FSIS Form 7355-2A/B

Fill in the Container Seal, FSIS Form 7355-2A.


Sealed by (signature)

Sealed by (print name)

Date Sealed (current date)

Form No. (number from FSIS Form 10,210-3

that is in the upper right corner of the sample form)

FSIS LABORATORY SAMPLE CONTAINER SEAL	SEALING INSTRUCTIONS	SEAL BY (Signature)
	SEALING INSTRUCTIONS	SEAL BY (Print Name)
	SEALING INSTRUCTIONS	DATE SEALED
	SEALING INSTRUCTIONS	FORM NO.
FSIS FORM 7355-2A (06/15/2001)	CENTER OVER BOX SEAM	366328 



FSIS Outreach to Small & Very Small Plants

- Conducted 22 Regulatory Education Sessions in 20 states with over 375 participants reviewing *E. coli* O157:H7 policies and draft Compliance Guidance.

- Conducted 2 educational net meetings with over 125 participants.

“FSIS Compliance Guidance” – Dr. Ann Hollingsworth

“Risk Management Practices to Control for E. coli O157:H7 in Beef Slaughter Establishments” – Dr. Kerri Harris

(recorded and placed on the FSIS web site at:

[http://www.fsis.usda.gov/news & events/Reg_Education_Videos/index.asp](http://www.fsis.usda.gov/news_and_events/Reg_Education_Videos/index.asp))



*Excerpts from the
Regulatory
Education Session*

E. coli O157:H7

Designing Effective
Sampling & Testing Programs





Microbial sampling and testing:

Essential Points

- CANNOT replace validated interventions designed to control *E. coli* O157:H7 adulteration.
- Not a magic bullet; even a negative test is no guarantee.
- NECESSARY to provide assurance that raw ground beef products are not adulterated with *E. coli* O157:H7.
- WILL NOT prove with 100% certainty that product is safe, but can significantly reduce your risk of producing/shipping adulterated product.



Essential Points

FSIS testing is necessary, but alone will not provide sufficient assurance.

FSIS does not mandate plants to test.

There is no single approach to sampling and testing that will be suitable for all plants (i.e., you have to figure out what is best for your particular operation).



Look For What You Don't Want To Find

A sampling plan must be designed to maximize the likelihood of finding *E. coli* O157:H7, which hinges on:

- Number and distribution of organisms in the lot
- Number of subsamples collected from the lot, and how those subsamples are collected
- The sensitivity of your lab's testing methods

If...

- You have a positive result, you can implement corrective actions to minimize losses.
- Your testing fails to identify adulterated product, the consequences could be devastating.



Minimum Sampling Frequencies

Production Volume (lb/day)	Minimum Sampling Frequency*
➤ 250,000	> 1 sample/month > 12 samples/year
➤ 50,000 but \leq 250,000	1 sample/month 12 samples/year
➤ 1,000 but \leq 50,000	1 sample every 2 nd month 6 samples/year
➤ \leq 1,000	1 sample every 3 rd month 4 samples/year

*FSIS also suggests increasing the sampling frequency by a factor of 2 from April to October, as there tends to be an increase in the percentage of positive samples during warmer months



What must be considered?

The amount and frequency of sampling should consider factors such as:

- Antimicrobial interventions
 - Single or multiple
- Your supplier(s) of raw ground beef components
 - Single or multiple
 - “Best practices” or “risky practices”
- Lotting of product
 - How do you define a lot
 - Product holding procedures
 - Common source/affected product



What products are being tested?



Testing source materials and finished product is more effective than either program alone.

Some source material components may be different in terms of the inherent risk of being contaminated by *E. coli* O157:H7.



What is the lot size?

Establishment must define what constitutes a lot.

If a sample is positive and the “lot” does not actually include all product represented by that sample, then adulterated product may enter commerce.

Affected product is the amount of product actually implicated by the positive sample result; can impact size of recall, if necessary.



How is the product being sampled?

For trim, the organism will be on the surface so the sampling method should maximize this surface area.

Core sampling might produce samples that have a low percentage of surface area, decreasing the likelihood of finding *E. coli* O157:H7.





How are portions selected?

A sample should fully represent the lot.

E. coli O157:H7, when present, is not 'evenly' distributed throughout a lot of trim, other components, or even finished product.

Therefore portions should be collected randomly:

- At different sites (combos for example) within the lot, and/or
- At different times during production

Better to use many small portions rather than few large portions when constructing composite samples .



How many portions make up a sample?

N60

The number of portions (or subsamples) making up a composite sample also affects how representative the sample is of the whole lot.

The greater the number of portions, the greater the opportunity of detecting pockets of contamination.

FSIS considers N60 sampling “robust” because it implies that a sample is made up of not just 60 different portions, but 60 different time points or product locations.



How effective is the testing method?

The plant has responsibility to understand and document how your lab is testing the product.

Methods used should be validated by a recognized government or independent body.

Methods should ensure detection of very low levels of *E. coli* O157:H7 that may be present.

FSIS Testing Methods are available at:

www.fsis.usda.gov/Science/Microbiological_Lab_Guidebook/



What if I get a positive?

Take appropriate corrective actions.

Investigate to find the source.

Define and hold all implicated product.

- Do other lots have source materials in common with sampled lot?

Use good quality control procedures and keep good detailed records regarding product and corrective actions.



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What's next?

FSIS Workforce:

- Reinforce the N60 sampling training.
- Train the workforce on sanitary dressing policies.
- Train the workforce on the use of new sampling methods/tools (pending approval).



FSIS Employee Training & Outreach to Small & Very Small Plants

What's next?

Small and Very Small Plants:

- Share BIFSCO video with small and very small plants.
- Share Compliance Guidance.
- Conduct additional educational net meetings.
- Continue Regulatory Education Sessions.
- Conduct detailed “how to” workshops.