

Guidance Document for Sampling and Lotting of Beef Products and Sample Analysis for Pathogens

Developed by the Beef Industry Food Safety Council

Developed by members of the Beef Industry Food Safety Council

Rationale

This document provides best industry practices for components (lotting, sampling and laboratory analysis) of the pathogen-testing program as a part of an overall food safety system. It is important to recognize that these are just components of the system and their success depends on the proper implementation of the best practices leading to these steps and performance of these steps. It is imperative that the establishment clearly understand the purpose of all testing, how to interpret the results of such testing and most importantly know what to do with the results of the testing.

The objective of this document deals with recommended best practices for lotting, sampling and laboratory analysis for programs conducting microbial testing for *E. coli* O157:H7 in a variety of products produced in a beef processing plant.

I. Sampling System Requirements

- Labeling of Sample, Lot and Container must be consistent and performed in a manner to provide complete traceability.
- Randomly select a representative sample of all products contained in the lot. Each product type must have an equal chance of being selected.
- Lots may be differentiated as produced by time, lean point, source, customer requirements, etc. Regardless of the lotting scheme, it is critical that the tested lot remains intact and can be clearly identified to the end user.
- **Lots must be held intact and in its entirety in house until negative results are received.**
- Sequencing of Production Time and Area produced should be documented in order to allow for sequencing of finished product in the event of a positive pathogen test result or multiple positives test results.
- Product in the same lot is not produced over more than one production day
- Management of rework has to be performed to maintain identity of time and area of production.
- Incoming Raw Material Lot Management Systems must be in place to accurately track raw material lot and source.
- All products must have 100% reconciliation and retention to ensure control of tested lot.
- Products that were part of the sampled lot and were subsequently rejected for quality or other reasons must be tracked and controlled. This includes leakers, damaged boxes, held product for specification review, etc.
- It is advisable to collect samples for frozen material either prior to freezing or by thawing in a manner to allow for proper surface excision as detailed above. If this is not possible, sampling of frozen product should follow USDA Import Procedures, [FSIS Directive 10010.1R3, Attachment 7](#).

II. Carcass

- Lot: A minimum of one carcass should comprise the lot. Each carcass is processed through the slaughter floor and is treated with interventions/processing aids as an individual carcass.
- Sampling: Use the USDA generic *E. coli* sampling method ([9CFR310.25](#)) or the USDA USMARC carcass sampling method.

III. Trim Sampling (Combo)

- Lot: A minimum of one combo but not more than five combos should comprise the lot. Combo trim may be lotted as produced by time, lean point, source, customer requirements, etc.
- Sampling: N60 sampling in which a minimum of 60 individual pieces of trim are sampled targeting outside surfaces (<http://www.bifsc.org/technicalresources.aspx>). The sampling method should yield a sample very close to 375 grams (13.23 oz or .83 lbs).

IV. Box Trim

- Lot: When determining lotting practices for boxed trim, the following should be considered:
 - A minimum box count for a lot can be as small as one box regardless of weight, but the volume of the material in the box should be sufficient to allow for N60 sampling.
 - The maximum box count should not exceed, by weight, the equivalent of 5 combos (~ 10,000 lbs).
- Sampling: N60 sampling should be performed as previously described.

V. Ground Beef

- Lot: The lot is determined by arbitrary timeframe when packaged in final form. This must be logistically feasible, traceable, and maintainable.
 - Rework must be accounted for in the lotting scheme.
 - No finished product (ground material) should be carried over into a new production day.
- Sampling: Samples MUST be collected at a point in the process after the final blender (can be before or after freezing).
 - Samples may be composited to represent a time period of production as 1 lot.
 - When sampling ground beef companion samples are drawn. Only one of the two is analyzed for the initial screen.
 - If a positive initial screen occurs, then analyze the companion set of samples. Product disposition may be based on the companion results in accordance with FSIS protocols (FSIS must be notified of all positive findings).

VI. Box Primal

- Lot: Each individual package of product should be considered microbiologically independent unless the sampling encompasses more than one package.
 - In selecting lots, detailed collection of all data available with the primal(s) selected must be maintained in order to clearly identify what was sampled, such as establishment number, pack date, product code, pack time, packaging information, etc.
- Sampling can be conducted in one of two ways:
 - Combo Naked Test –N60 sampling should be performed as previously described.
 - Product going directly to package – This method would follow the boxed trim method as detailed above, but each primal piece would require a small piece to be incised from individual primal pieces.
- Sampling: N60 sampling should be performed as previously described. In the event that more than 60 boxes are produced, more than 60 pieces would be selected. In order to maintain the sample weight for lots greater than 60 boxes, it is permissible to reduce the length of the piece of trim to ensure maximum surface area and not exceed the 375 gram (13.23 oz or .82 lbs.) sample standard.

VII. Bench Trim

- Lot: If a sub-primal is made into a non-intact product the sub-primal should be held as part of the lot until bench trim results are received unless the sub-primals (post trimming, pre-tenderization, cubing or enhancement) are treated with an antimicrobial after trimming and prior to making non-intact product.
- Sampling: N60 sampling should be performed as previously described.

VIII. Box Offal

- Lot: When determining lotting of offal an establishment must be able to clearly define and support the microbial independence of the lot, if the lot is not clean up to clean up.
- Sampling: N60 sampling should be performed as previously described.

IX. AMR

- Lot: All product produced from a clean-up to clean-up must be considered a lot unless an establishment can support alternative lotting and disposition decisions.
 - Sampling: Select a small sample from each box as it is being produced ensuring that at least 60 random (6-7 grams) samples are taken.

X. Sample Analysis Laboratory Essentials

- The laboratory must be accredited to the ISO / IEC 17025 standard for testing laboratories.
- Laboratory should manage data appropriately and provide technical assistance including data interpretation.
- Test methods must be acceptable to FSIS and/or customer(s).
- Proper Testing execution should be evident.
- Results turn around time must meet operational needs.
- The test methods should provide the limit of detection to meet operational, customer and/or regulatory expectations.
- An establishment should feel they have a good working relationship with their laboratory.
- Credit terms must be mutually agreeable.