

**TEXAS DEPARTMENT OF STATE HEALTH SERVICES
MEAT SAFETY ASSURANCE
AUSTIN, TEXAS**

<h1 style="margin:0;">MSA Directive</h1>	6420.2 Rev. 1	4/27/17
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**VERIFICATION OF PROCEDURES FOR CONTROLLING FECAL
MATERIAL, INGESTA, AND MILK IN LIVESTOCK SLAUGHTER
OPERATIONS**

CHAPTER I -- GENERAL

I. PURPOSE

This directive provides inspection program personnel (IPP) with the current methodology for protecting public health by verifying, documenting, and enforcing the requirement that there be no visible fecal material, milk, or ingesta on livestock carcasses at or immediately after the final rail, and for verifying that feces, ingesta, and milk are not present on head, cheek, and weasand meat at packing. This version of this directive removes poultry instructions and updates instructions on documenting livestock verification procedure results using the Public Health Information System (PHIS).

II. CANCELLATION

MSA Directive 6420.2, Verification of Procedures for Controlling Fecal Material, Ingesta, and Milk in Slaughter Operations, 4/11/11

III. BACKGROUND

A. In slaughter establishments, contamination of carcasses and parts from feces, ingesta, and milk are primary avenues for the spread of pathogens. Pathogens may reside in fecal material, both in the gastrointestinal tract and on the exterior surfaces of the animal going to slaughter. Without care being taken in handling and dressing procedures during slaughter and processing, the edible portions of the carcass can become contaminated with bacteria capable of causing illness in humans. Once introduced into the establishment environment, the organisms may be spread from carcass to carcass or by other means. MSA enforces a "zero tolerance" standard for visible fecal material, ingesta, or milk on carcasses and parts at the time of inspection.

B. One approach that MSA takes to minimize the occurrence of pathogens such as *E. coli* O157:H7 on meat is to verify that feces, ingesta, and milk do not contaminate beef carcasses and parts, or if they do, that they are properly removed. MSA is now providing instructions to IPP on how to verify that meat from heads, cheeks, and weasands - beef carcass parts - that may become contaminated with feces, ingesta, or milk - are not contaminated with these substances. Meat from these parts is frequently used in ground beef products. If the meat from these parts is contaminated, it represents a way of introducing pathogens, including *E. coli* O157:H7, into ground beef. MSA is reissuing this directive as one of a number of steps that it is taking to ensure that the possibility of *E. coli* O157:H7 contamination is reduced to the extent possible.

C. Head, cheek, and weasand meat are parts that may not be attached to the carcass at the time that the carcass passes the final rail. IPP are to verify that these parts are not contaminated by fecal material, ingesta, or milk at the end of the harvesting process e.g., at the packaging step or when the product is placed into a container for storage.

D. MSA has instructed IPP that they have access to the results of any testing and of any monitoring activities that are performed that may have an impact on the establishment's hazard analysis (See MSA Directive 5000.2). IPP must review results on at least a weekly basis.

E. In addition to zero tolerance verification, IPP verify compliance with HACCP requirements and verify that establishment controls incorporated into the establishment's HACCP system ensure all meat and meat by-products (e.g. offals) are safe, wholesome, clean, and free of contamination using the Slaughter HACCP Verification task. See instructions in MSA Directive 5000.1, *Verifying an Establishment's Food Safety System*.

F. Previous instructions regarding poultry zero tolerance verification within this directive can now be found in MSA 6420.5, *Verifying Poultry Slaughter Establishments Maintain Adequate Procedures for Preventing Contamination with Feces and Enteric Pathogens*.

CHAPTER II -- LIVESTOCK FECAL MATERIAL, INGESTA, AND MILK INSPECTION

I. GENERAL

9 CFR 310.18(a) states: *Carcasses, organs, and other parts shall be handled in a sanitary manner to prevent contamination with fecal material, urine, bile,*

hair, dirt, or foreign matter; however, if contamination occurs, it shall be promptly removed in a manner satisfactory to the inspector.

A. Under 9 CFR 417, a HACCP plan must include, as appropriate, critical control points (CCPs) that are designed to control identified food safety hazards (9 CFR 417.2(c)(2)). Because fecal material is a vehicle for pathogens, and because virtually all slaughter establishments recognize that contamination of meat by pathogenic microorganisms from fecal material, ingesta, or milk is a food safety hazard that is reasonably likely to occur in the slaughter production process, IPP are to verify that slaughter establishments have adopted controls that they can demonstrate are effective in reducing the occurrence of pathogens, including controls that prevent contamination of carcasses with fecal contamination, milk and ingesta.

B. In each establishment slaughtering livestock, the activities of IPP include checks to determine whether the establishment is producing carcasses and head, cheek, and weasand meat that are not contaminated with fecal material, ingesta, or milk. (See 9 CFR 307.2(g), 310.3, 310.17(a), 310.18(a), and 318.2(b) and (d).)

II. IPP INSPECTION RESPONSIBILITIES

A. IPP verify removal of contamination during examination of carcasses and parts as part of post-mortem inspection.

B. When the IPP find feces, ingesta, or milk, they are to stop the slaughter line to allow for trimming of the carcass **by establishment personnel** and reinspection of the carcass by the inspector unless the establishment has provided a rail-out loop:

1. For the purpose of moving contaminated carcasses off-line for trimming, reexamination, and positioning back on the line for final inspection; and
2. Determined by the IPP to be adequate to prevent accumulation of contaminated carcasses or cross-contamination of other carcasses.

C. IPP who retain a carcass for veterinary disposition for pathology are not to authorize establishment trimming until after disposition by a veterinary circuit manager

D. IPP are to notify their supervisor when they believe that:

1. An establishment's rail-out procedure is inadequate to prevent carcass accumulation or cross-contamination of other carcasses; or

2. An establishment's slaughter or dressing processes are not under control based on repeated presentation of contaminated carcasses for post-mortem inspection.

E. If the head or viscera inspector finds contamination, the establishment must remove the contamination before the head or affected viscera or part can be passed. If the head or viscera inspector repeatedly finds contamination, he or she is to notify their supervisor.

III. LIVESTOCK VERIFICATION PROCEDURES

A. IPP verify the adequacy of the establishment's procedures to ensure that carcasses are not contaminated with fecal material, ingesta, or milk by the post-mortem rail inspection station, and that head, cheek, and weasand meat are not contaminated with fecal material, ingesta, or milk at the completion of the harvesting process using the Livestock Zero Tolerance Verification task. Livestock Zero Tolerance Verification tasks are to be scheduled at a minimum of once daily for each shift in PHIS. Additional directed tasks may be performed by the off-line inspector at the direction of the IPP when there appears to be a loss of establishment process control (e. g. after notification by IPP).

B. When performing a Livestock Zero Tolerance Verification task and verifying that carcasses are free of fecal material, ingesta, and milk, IPP are to select carcass units at the post-mortem rail inspection station for examination on-line, or after the post-mortem rail inspection station (see [Attachment 1](#) for selection of carcass units) and before the final wash.

NOTE: To address any issues related to less than ideal slaughter floor design, worker safety, or presentation of carcasses or parts, the IPP and Circuit Manager (CM) can develop appropriate temporary or alternate procedures or arrangements with establishment management for this inspection to be properly conducted per [9 CFR 307.2](#).

C. If IPP are performing the Livestock Zero Tolerance Verification task verifying that the HACCP process is controlling fecal material, ingesta, or milk contamination during the carcass production process, these personnel should:

1. Determine the expected slaughter volume for that day;
2. Determine the number of carcass units based on daily slaughter volume (see [Attachment 1](#));

3. Randomly select the appropriate number of carcass units during each shift;
4. Examine the entire carcass of each selected carcass using the technique that IPP use at the post-mortem rail inspection station;
5. Identify foreign material as fecal material or ingesta only when both the color and texture characteristics are identifiable (see [Attachment 2](#)); and
6. Identify foreign material as milk only when both the color and consistency characteristics are identifiable (see [Attachment 2](#)).

D. When verifying that head, cheek, and weasand meat are free of fecal material, ingesta, and milk, IPP are to select product at the end of the harvesting process, after all of the establishment controls and interventions. This verification may occur at the time of packaging or when the product is placed in a container for storage. 9 CFR 417.5(a)(2) requires that the establishment maintain a written HACCP plan, including decision-making documents associated with the selection and development of the CCPs and critical limits, and documents that support both the monitoring and verification procedures, sample size, and the frequency of those procedures. Because the establishment is required to have documents to support the monitoring procedures (amount of product examined), IPP are to examine no less than the amount of product as the establishment has listed in the HACCP plan for the monitoring procedure.

E. When IPP perform the Livestock Zero Tolerance Verification task and find fecal contamination, milk, or ingesta on carcasses or head, cheek, or weasand meat, IPP are to verify that the establishment implements corrective actions that meet the requirements of 417.3 using the Slaughter HACCP Verification task. See MSA Directive 5000.1, *Verifying an Establishment's Food Safety System*.

Per 9 CFR 417.3, IPP are to verify that the establishment implements corrective action to:

1. Identify and eliminate the cause of the deviation;
2. Ensure that the CCP is under control after the action is taken;
3. Establish measures to prevent recurrence; and

4. Ensure that no product that is injurious to health back to the last acceptable check enters commerce.

CHAPTER IV-- DOCUMENTATION

A. If IPP are performing a Livestock Zero Tolerance Verification task and they do not observe any fecal material, ingesta, or milk on livestock carcasses or head, cheek, or weasand meat from sampled carcasses, IPP are to mark the task as performed on the task schedule.

B. If IPP find identifiable fecal material, ingesta, or milk on any carcass or head, cheek, or weasand meat when performing a Livestock Zero Tolerance Verification task, IPP are to notify the establishment, complete the task, and then document noncompliance using PHIS.

NOTE: 9 CFR 310.18 is the only mandatory regulation to verify when performing the Livestock Zero Tolerance Verification task.

C. If IPP are aware of a history of multiple zero tolerance noncompliances being documented while performing the Livestock Zero Tolerance Verification task, IPP are to review instructions regarding association of NRs in MSA Directive 5000.1, *Verifying an Establishment's Food Safety System, Chapter V, Part VII, Trends of Noncompliance*. Prior to completing an NR representing a potential noncompliance trend, IPP are to review additional instructions under Chapter V - Enforcement below.

D. If IPP have determined noncompliance while performing the Livestock Zero Tolerance Verification task, IPP are to verify any remaining corrective actions by performing the Slaughter HACCP Verification task. See MSA Directive 5000.1, *Verifying an Establishment's Food Safety System*.

CHAPTER V -- ENFORCEMENT

A. When repeated noncompliance findings are associated (i.e. related, connected) and indicative of systemic problem with the establishment's slaughter HACCP system, the IPP is responsible for communicating such findings with the establishment during weekly meetings and with the CM at the next opportunity? When evaluating the justification for additional enforcement actions to be discussed with the CM, the IPP should seek answers to questions such as:

1. What is the rate of noncompliance? Has the rate increased or decreased over various time periods?

2. Has the establishment implemented meaningful preventive measures?
3. Does establishment testing for pathogens or indicator organisms indicate a problem with the sanitary dressing procedures or overall sanitation in the establishment? See MSA Directive 5000.2, *Review of Establishment Data by Inspection Personnel*.
4. Are there indications that other parts of the HACCP system are not appropriately designed to prevent food safety hazards?
5. Are all parts of the HACCP system being implemented as designed?
6. Are there indications that the establishment's antimicrobial interventions are not operating as intended or corrective actions are not effective?

B. If the IPP determines that repetitive findings of fecal material, ingesta, and milk might represent a developing trend and lead to further enforcement actions, the IPP and CM are to ensure noncompliance determinations and documentation support such enforcement actions.

CHAPTER VI -- QUESTIONS

Refer questions through supervisory channels.



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Livestock Carcass Examination

Based on the expected slaughter volume for that shift (number of animals), inspection program personnel (IPP) are to determine the number of carcasses or carcass sides to be examined using the following table.

Livestock Carcass Sample Size		
Number of Animals Slaughtered per Shift	Number of Carcasses to be Sampled per Shift	Number of Sides (hind and forequarters) to be Sampled per Shift
100 or fewer	2	4
101 to 250	4	8
251 to 500	7	14
More than 500	11	22

- a. Select the appropriate number of carcass units randomly.
- b. Examine the selected carcass units using the same systematic inspection technique that IPP use at the post-mortem rail inspection station in MSA Directive 6100.2.
- c. IPP performing zero tolerance verification may separately and independently examine the designated number of hind quarters and forequarters to verify the appropriate number of sides or carcasses.

Identification of Contaminants for Livestock

To verify carcasses and parts are free of feces, ingesta, or milk contamination known to be vectors for pathogens that represent food safety hazards, inspection program personnel (IPP) are expected to first identify the contamination. Feces, ingesta, or milk can be identified by color, texture, and consistency.

The actual appearance of feces and ingesta reflect the diet, age of the animal, type of animal (functioning rumen; non-ruminant) and regional feeding practices. Therefore, the descriptions below are guidelines and are not absolute. The Circuit Manager is the final arbiter regarding any disputed findings of feces, ingesta, or milk representing zero tolerance noncompliance.

A. Livestock Feces and Ingesta

IPP are to identify foreign material as feces or ingesta based on two factors: color and texture.

Basic Criteria for Identification of Feces on Livestock Carcasses				
	Cattle		Swine	Sheep and Goat
	Cattle; and Heavy Calf (ruminating)	Calf (non-ruminating)		
Color	Yellow, green, or brown.	White, yellow, tan.	Yellow, green, tan, or brown.	Green, brown, to black.
Texture	Fibrous or plant-like texture; may include grain particles depending on diet.	Pasty	May include identifiable grain particles, or fibrous plant material.	Fibrous or plant-like; feces or ingesta may also be tarry.
Size:	The size or quantity of feces or ingesta is largely unimportant in identifying fecal or ingesta contamination. However, as size decreases, color and texture become more difficult to discern.			

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NOTE: Bile is a contaminant on carcasses and parts per 9 CFR 310.18 but is not counted as a zero tolerance defect.

B. Milk

IPP are to identify foreign material as milk based on two factors: color and consistency.

Milk, if present, tends to be found on the midline, during or after removal of mammary glands (udder) from lactating animals.

Criteria for Identification of Milk on Livestock Carcasses			
	Cattle	Swine	Sheep and Goat
Color	Clear to white to light yellow.		
Consistency	Watery to ropy or curdy.		