



Meat Messenger

North Dakota State Meat and Poultry Inspection Program

2013 Quarter 2

Livestock producers warned of anthrax danger

North Dakota's state veterinarian is urging livestock producers in areas with a past history of anthrax to take action to protect their animals from the disease.

"A case of anthrax in an unvaccinated beef cow has been confirmed in Hettinger County near the Adams County line, the first confirmed case in the state this year," said Dr. Susan Keller. "Producers should consult with their veterinarians to make sure the vaccination schedule for their animals is up to date."

Keller said effective anthrax vaccines are readily available, but that it takes about a week for immunity to be established, and it must be administered annually. She also said

producers should monitor their herds for unexpected deaths and report them to their veterinarians.

"Anthrax has been most frequently reported in northeast, southeast and south central North Dakota, but it has been found in almost every part of the state," she said. "With the precipitation we have had, conditions are right for the disease to occur," she said.

North Dakota often records a few anthrax cases every year, but in 2005, more than 500 confirmed deaths from anthrax were reported with total losses estimated at more than 1,000 head. The dead animals included cattle, bison, horses, sheep, llamas, farmed deer and elk.

An anthrax factsheet is available on the home page of the North Dakota Department of Agriculture website at <http://www.nd.gov/ndda/>.

Anthrax is caused by the bacteria *Bacillus anthracis*. Spores of the bacteria can lie dormant in the ground for decades and becomes active under ideal conditions, such as heavy rainfall, flooding and drought. When animals graze or consume forage or water contaminated with the spores, they are exposed to the disease.

For more information, please call Dr. Susan Keller or Dr. Beth Carlson at (701) 328-2655.

FSIS offers newsletter, guidebook series

Small Plant News is a monthly, four-page newsletter published by the U.S. Department of Agriculture's Food Safety and Inspection Service (FSIS) for small and very small federal- and state-inspected establishment owners and operators who produce meat, poultry, and processed egg products.

The newsletter's goals include:

- Providing owner/operators with meaningful and coherent information in an easy-to-read format.
- Helping plant owners/ operators implement FSIS rules and regulations into their daily operational practices with "plain language" information.

- Fostering plants' ability to stay in business and produce safe food by providing tips to encourage the highest sanitation standards, paperwork compliance and cost-savings.
- Promoting a two-way dialogue between plants and the agency.

Back issues are available at www.fsis.usda.gov or by calling the Small Plant Help Desk at (877) 374-7435 or by e-mailing InfoSource@fsis.usda.gov.

The online version of the recall plan booklet is now available at www.fsis.usda.gov/PDF/RecallPlanBooklet_0513.pdf.

Meat Messenger

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Regulation reminder

North Dakota Administrative Code
Chapter 7-13-05-04 Condemned and inedible

7-13-05-04. Condemned and inedible. All animal carcasses or parts thereof, meat, and meat food products found by an inspector to be adulterated in any establishment must be condemned and must be destroyed for human food purposes under the supervision of an inspector and in a manner prescribed by the commissioner. But such carcass or part, meat, or meat food product that may, by reprocessing, be made not adulterated, need not be condemned and destroyed if reprocessed under the supervision of an inspector and thereafter found to be unadulterated. The commissioner may remove inspectors from an establishment that fails to destroy a condemned animal carcass or part. A person may not sell, donate, transport, or offer or receive for sale or transportation, in this state, any such carcasses or parts thereof, meat, or meat food products which are not intended for use as human food unless they are denatured or otherwise identified as required by the commissioner or are naturally inedible by humans.

History: Effective August 1, 2000

General Authority: NDCC 36-24-17

What this regulation means:

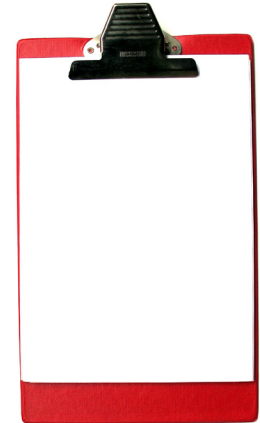
The North Dakota Meat and Poultry Inspection Program (NDMPIP) may initiate action to seize and condemn a whole carcass, part of a carcass, or meat food product, if said items are found unsuitable for human consumption.

If an article or animal is condemned, it must be disposed of by destruction while the inspector is present.

Whole carcasses or parts of a carcass will be placed in an inedible container, slashed and denatured, while an inspector is present.

Packaged meat food products must be opened, placed in an inedible container and denaturant applied to all surfaces, while an inspector is present.

If the adulteration can be removed by trimming while the inspector is present, and the product then is re-inspected and found unadulterated, the product does not have to be condemned.



Validation a vital part of HACCP plan

Validation is required in HACCP regulations, 9 CFR 417.4(a)(1). It is the element of verification focused on collecting and evaluating scientific and technical information to determine whether the HACCP plan, when properly implemented, will effectively control the relevant hazards.

Thus, appropriate validation is essential if an establishment is to have a successful HACCP program.

In definition there are two parts to validation.

- Scientifically demonstrate that HACCP system is designed to address effectively the relevant hazards.
- In-plant observations, measurements, and evaluations, or scientific studies, to demonstrate that system will function as designed.

An establishment needs to have verification records that establish it consistently meets the parameters specified in the document upon which it relies for scientific support. To rely on Appendix A, for example, the establishment would need to have records that demonstrate that its process is achieving the critical parameters (e.g., dwell time, humidity) identified in Appendix A. Establishments can rely on these and similar documents to meet the first aspect of validation. These documents are well-accepted.

FSIS prepared guidance document because it determined that validation needs greater attention in FSIS verification activities. Purpose of guidance document was to ensure that establishments had as good an understanding of what the validation requirement entails as possible.

Weblinks

- Ohio State University – www.ag.ohio-state.edu/~meatsci/HACCPsupport.html
- University of Wisconsin, Center for Meat Process Validation – www.meathaccp.wisc.edu
- Penn State University, Food Science – <http://foodsafety.psu.edu/extension-people.html>

HACCP Alliance – <http://www.haccpalliance.org/sub/index.html>

http://www.fsis.usda.gov/PDF/HACCP_Systems_Validation_Draft_Guide_2010.pdf

Recall numbers

Imagine eating something and having a reaction that made it so difficult to breathe that you lose consciousness, go into shock, or even die. This is the risk that people with food allergies live with every day.

For some people, simply being in the same room with a particular food is enough to induce an allergic reaction. People with food allergies must rely on being able to read the declared ingredients on labels to keep themselves safe. This has become a great concern to FSIS because the Agency issued a large number of recalls in 2011 due to allergens.

In 2011, there were 48 recalls issued for undeclared ingredients. Undeclared allergens, potential public health hazards, accounted for 40 of those recalls. In 2010, 18 recalls were issued due to undeclared allergens; and, in 2009, 14 were issued. Many of these recalls could be traced back to when the product formulation was changed, or there was a change in a supplier's ingredient formulation that was not reflected on the labeling of the finished meat or poultry.

The U.S. Department of Agriculture's (USDA) Food Safety and Inspection Service (FSIS) has identified root causes when recalls due to undeclared ingredients occur:

- The chemical (allergen) food safety hazard in a plant's hazard analysis has not been addressed;
- The establishment has failed to support the decision in the hazard analysis;
- The hazard analysis has not been reassessed; and
- Controls identified to mitigate the hazard have not been implemented.

http://www.fsis.usda.gov/PDF/Small_Plant_News_Vol5_No7.pdf --USDA Labeling and Program Delivery Division Food Safety and Inspection Service (FSIS), and http://www.fsis.usda.gov/Fsis_Recalls/index.asp

Salmonella risks in the lymph nodes

By Dayna Harhay

Bacterial contamination is responsible for vast numbers of foodborne illnesses each year in the United States. *Salmonella enterica* is one of the leading bacterial agents of foodborne disease, causing approximately 40,000 documented cases in the U.S. each year.

Although poultry products and, more recently, contaminated fresh produce are well-established vectors for *S. enterica*, several food-borne disease case studies have shown undercooked ground beef to be sources of sporadic and outbreak cases of salmonellosis.

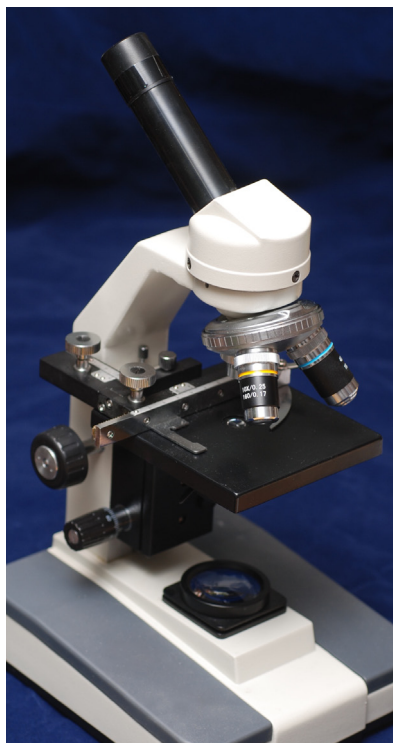
According to the Centers for Disease Control and Prevention, approximately one in 10 foodborne disease outbreaks, attributed to beef as a single commodity, is due to *S. enterica* contamination. To mitigate contamination of food products and aid epidemiological investigation, it is necessary to identify sources of contamination.

How Salmonella enters the beef food chain

Hides of cattle are likely the primary source of *Salmonella* contamination of carcass surfaces during harvest. Accordingly, substantial effort is afforded to preventing carcasses contamination, and these intervention strategies appear quite effective, as *Salmonella* prevalence after intervention is typically undetectable or less than 1 percent. However, despite successful control of surface contamination, it is still possible for *Salmonella* to be

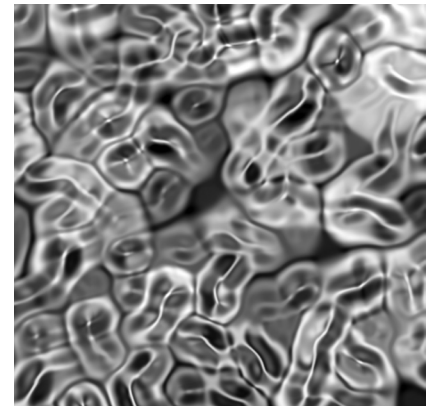
recovered from ground beef. In a study of commercial ground beef from seven regions of the U.S. (n=4,136 samples collected over two years), *Salmonella* was recovered from 4.2 percent of ground beef samples.

Similarly, government testing of ground beef indicates *Salmonella* contamination averages around 2.1 percent and that little improvement in contamination has been achieved over the past decade, even while the prevalence of *E. coli* O157:H7 in ground beef has declined more than 70 percent (to 0.23 percent in 2010 from 0.80 percent in 2001).



Another potential source

Recent studies have identified another potential source of *S. enterica* in the beef food chain as fat trim containing contaminated lymph nodes. Lymph nodes function



as a filtering mechanism to sequester bacteria, viruses and other infectious agents for eventual destruction by lymphocytes. However, certain bacteria, like *Salmonella*, are able to evade the host immune response by invading and surviving within immune cells such as macrophages. Several studies have reported on the isolation of *S. enterica* from cattle lymph nodes.

However, most of these have focused on *S. enterica* contamination of mesenteric LNs that would not be included in ground beef, as they are discarded during the evisceration process. Other lymph nodes located within the adipose tissue of muscle cuts (such as the flank and chuck) are of concern as a potential pathogen source for ground beef. When present in lymph nodes, *Salmonella* are protected from chemical and thermal antimicrobial carcass interventions and as a consequence sanitary harvest procedures may not address this potential source of contamination.

A recent survey of the prevalence of *Salmonella* contamination in cattle lymph nodes showed that median point estimates of *S. enterica* contamination were generally low

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(1.3 percent). However, *Salmonella* prevalence was found to be greater in subiliac lymph nodes of feedlot cattle (11.8 percent) compared to those of cull cattle (0.65 percent). Moreover, *Salmonella* harborage was observed to be affected by season and region, with prevalence being greater in the summer and fall and in the southern regions of the U.S.

This study also showed that contaminated lymph nodes may be a substantial source of *Salmonella*, as enumeration analysis revealed that contaminated lymph nodes harbored *Salmonella* at concentrations ranging from <0.1 to >3.8 Log₁₀ CFU/g.

Mitigating lymph nodes as a source of contamination

Identifying that cattle peripheral lymph nodes can serve as a vehicle for *Salmonella* contamination (if fat trim containing these nodes is incorporated into ground beef) is the first step to understanding how to mitigate this pathogen source.

Although further study is needed to confirm the observed trends of recent surveys, these data nevertheless raise intriguing questions regarding the mechanism of *Salmonella* entry into bovine peripheral lymph nodes, as well as the factors influencing this phenomenon. The observed seasonal and regional prevalence of *Salmonella* contamination in lymph nodes mirrors that observed previously in cattle environments. These similarities suggest the potential for an environmental component to the mechanism of how *Salmonella* gains entry to peripheral nodes.



It is known that subiliac lymph nodes receive afferent lymph from the skin of the abdominal wall, pelvis and hind limbs. Therefore it is possible that *Salmonella* recovered from these peripheral lymph nodes may have entered via a transdermal route through abrasions or biting insects. This idea has been suggested previously, and given that cattle hides are a common reservoir for *Salmonella*, the observed correlation between *Salmonella* prevalence on cattle hides, in cattle environments and in peripheral lymph nodes is perhaps not surprising.

In keeping with this hypothesis, a recent study by Harris et al, demonstrated substantial feedlot-to-feedlot variation in peripheral lymph node contamination. These data suggest that differences in production practices likely impact *Salmonella* prevalence in feedlot environments and that these differences can strongly affect peripheral lymph node contamination levels.

Observations such as these bode well for the prospect of identifying

and implementing pre-harvest interventions to effectively mitigate this potential pathogen source.

Challenging the dogma

Salmonella serotypes predominantly identified from ground beef are Montevideo and Anatum; yet those attributed to outbreaks, Typhimurium and Newport, are much less frequently identified.

Thus, although Montevideo and Anatum are present in ground beef, they do not appear to be leading causes of salmonellosis outbreaks. These observations challenge the dogma that all *S. enterica* are equally capable of causing disease and suggest the need for research into understanding variation in virulence potential among *S. enterica*.

The author is a microbiologist and molecular biologist with the Meat Safety and Quality Research Unit at the U.S. Meat Animal Research Center (MARC) in Clay Center, NE

<http://www.meatingplace.com/Industry/TechnicalArticles/Details/37969>

Processors accountable for labeling allergens, gluten

More than one-third of U.S. consumers require diets that are free of specific allergens or gluten. Food processors and manufacturers have an obligation to help these consumers through proper labeling.

Federal law requires most packaged foods marketed in the U.S. be labeled in easy-to-understand terms if they are made with a “major food allergen.”

Eight foods and ingredients containing their proteins are defined as major food allergens and account for 90 percent of all food allergies. They are *milk, eggs, fish, crustacean shellfish, tree nuts, wheat, peanuts and soybeans.*

The law allows manufacturers to choose how they identify the specific “food source names,” such as “milk,” “cod,” “shrimp,” or “walnuts,” of the major food allergens on the label. They must be declared either in:

- the ingredient list, such as “casein (milk)” or “nonfat dry milk,” or
- a separate “Contains” statement, such as “Contains milk,” placed immediately after or next to the ingredient list.

Many different ingredients contain the same major food allergen, but sometimes the ingredients’ names do not indicate their specific food sources. For example, casein,



sodium caseinate and whey are all milk proteins. Although the same allergen can be present in multiple ingredients, its “food source name” (for example, milk) must appear in the ingredient list just once to comply with labeling requirements.

“Contains” and “May Contain”

If a “Contains” statement appears on a food label, it must include the food source names of all major food allergens used as ingredients. For example, if “whey,” “egg yolks” and a “natural flavor” that contains peanut proteins are listed as ingredients, the “Contains” statement must identify the words “milk,” “egg,” and “peanuts.”

Some manufacturers voluntarily include a “may contain” statement on their labels when there is a chance that a food allergen could be present. A manufacturer might use the same equipment to make different products. Even after cleaning this equipment, a small amount of an allergen (such as peanuts) that was used to make one product (such as cookies) may become part of

another product (such as crackers). In this case, the cracker label might state “may contain peanuts.”

Establishments should regularly review the labels of all ingredients they purchase for making their own products. Ingredient manufacturers change their recipes for many reasons, including taste and quality improvement, cost savings and consumer demands. By reviewing these labels, establishments can make necessary changes to their own labels to better protect their customers.

Establishments should also take extra care to prevent cross-contamination. Equipment and gadgets used to produce a variety of products can be a major source of allergen and gluten contamination. Cutting boards, measuring utensils, product tubs or platters, racks, grinder/mixers, stuffers, and scales and other equipment must be kept clean.



More information on labeling, food allergens and gluten intolerance is available on the following webpages.

www.fda.gov/ForConsumers/ConsumerUpdates/ucm254504.htm for food allergens.

www.fda.gov/ForConsumers/ConsumerUpdates/ucm265212.htm: A Glimpse at ‘Gluten-Free’ Food Labeling

www.mayoclinic.com/health/gluten-free-diet/MY01140

Classified ads

We are always looking for industry related items to advertise in the Meat Messenger. We post sale and want ads FREE. If you would like to put something in the Meat Messenger classifieds contact Julie Nilges at 701-204-3248 or e-mail description with contact information to jnilges@nd.gov.

Offal (gut) cart: Made of galvanized steel, two wheels, good condition. Please contact Kelly for price and more information at 701-254-4950. Located in Linton.

Sipromac one truck smokehouse: Smokehouse has a Juno microprocessor and liquid smoke attachment. Included are two trucks and many sticks and screens. \$20,000, Please contact Calvin or Alex for more information at 701-743-4451. Located in Parshall.

True Brand cooler: Cooler has two sliding doors and was manufactured in 2001. \$1,000, Please contact Calvin or Alex for more information at 701-743-4451. Located in Parshall.

One-quart plastic containers with lids: Containers and lids are brand new, never been used. \$20 per lot of 50, Please contact Calvin or Alex for more information at 701-743-4451. Located in Parshall.

Prairie Packing Inc.: Slaughter and processing plant in Williston, ND. USDA #7644. 10.43 acres of land with 20,000 sq. ft. building and garage. 15,000 sq. ft. is leased. City sewer and water. Work is divided into 70% rancher/producer and 30% retail sales. 10 employees. Please contact Dave Slais for more information at dslais04@live.com.

Slaughter/processing business: Located near Maddock, ND. Fully operational meat processing facility, all equipment and supplies included. Currently custom-exempt, with option for retail and/or state inspected status, many equipment/facility upgrades last 4 years. Very strong customer base. Please contact Denise for more information at: 701-438-2334.

Walk-in freezer and components: Three phase Copeland compressor Hp p62 Freon, new 2005. Model 4RA3-100A-TSK-800, serial 05A66497R.

Single phase Bohn cooling unit model 2402B serial DCD4540.

Larkin single phase outside evaporator.

Walk-in freezer with shelves/baskets, sharp freeze shelves & cooling unit, has 4-glass doors, free standing unit, walls snap together. Please contact Denise for more information at: 701-438-2334. Located in Esmond.

Berkel Commercial Automatic Meat Slicer: Newly reconditioned. For price or more information contact Larry Brenno at 701-996-2733. Located in Sheyenne.

Find us on Facebook

The new Facebook page benefits both consumers and processors with facts about inspection, rules for producers who want to direct market their products, and tips for safely preparing meat and poultry products.

Please check out our new page and feel free to ask a question by signing into Facebook and searching for North Dakota Meat and Poultry Inspection Program.



The new Meat and Poultry Inspection Program Facebook Page

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