



Meat Messenger

North Dakota State Meat and Poultry Inspection Program

2014 Quarter 2

New livestock division director appointed

Agriculture Commissioner Doug Goehring has appointed Shaun Quissell as the director of the Livestock Development Division of the North Dakota Department of Agriculture.

“Shaun has done an outstanding job in his previous role as a senior inspector in the State Meat and Poultry Inspection Program, and he has a broad understanding of the programs and services we deliver,” Goehring said. “His skills, experience and enthusiasm will be valuable as the department works to expand North

Dakota’s livestock industry.”

In his new position, Quissell will oversee NDDA’s livestock programs, including dairy and poultry inspection, auction and dealer licensing and bonding, livestock development, state meat inspection, livestock pollution prevention and feed registration.

A South Dakota native, Quissell graduated from South Dakota State University with a degree in animal science. He joined NDDA as an inspector in the State Meat and

Poultry Inspection Program in 2007, and was promoted to senior inspector in 2010. He lives near New Salem.



Quissell succeeds Wayne Carlson, who has retired after 21 years as NDDA’s livestock development director.

Control of allergens in meat products

By Nathan Kroh

Allergens are a serious concern not just for allergy sufferers but also for food processors and regulators. More than 170 foods are known allergens, but only eight account for 90 percent of all allergic reactions.

The most common allergens are: wheat, crustacean shellfish, eggs, fish, peanuts, milk, tree nuts, and soybeans. Since avoiding certain foods is the only option for food allergy sufferers, all allergens must be clearly displayed on the ingredient label. According to the Federal Meat Inspection Act of 1906, one of the circumstances

that shall deem a carcass or meat food product “misbranded” is any false or misleading label; therefore, any product shipped into commerce without every allergenic ingredient disclosed on the label is considered misbranded.

By failing to disclose any allergens in a meat product, a processing plant has unwittingly misbranded the product, potentially forcing a recall of that product. All undeclared allergen recalls receive the highest relative health risk rating of Class 1, because reactions to allergens cannot be determined by the amount of

allergenic material present.

In an article, “How much gluten can make me sick?”, appearing on the website, *About.com*, freelance writer Jane Anderson (herself a celiac disease sufferer) says the most sensitive gluten-intolerant individuals may suffer symptoms with a gluten presence of 0.015 mg (less than 5 ppm) in a piece of bread, less than 1/233,333th of a slice, no more than a crumb. Others with the same disease may eat up to 50 mg or 1/70 of a slice of bread. Food allergies symptoms may include a tingling sensation in the mouth, swelling of the tongue

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Regulation Reminder

North Dakota Administrative Code

Chapter 7-13-04-04: Sanitary Requirements

A person or facility may not conduct custom slaughtering, custom processing, or custom-exempt operations unless such operations are conducted in accordance with the sanitary requirements under title 9, Code of Federal Regulations, parts 303 and 381.

History: Effective August 1, 2000; amended effective January 1, 2004.

General Authority: NDCC 36-24-24

Law Implemented: NDCC 36-24-11

What this regulation means:

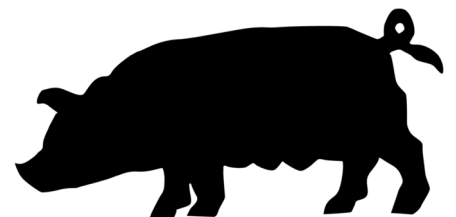
9 CFR parts 303 and 381 are the regulations for custom exemption of inspection, (meat and poultry, respectively) and states that custom exempt operations must:

- Meet the minimum facility requirements stated in 9 CFR 416.1 through 416.6 on Sanitation.
- Prepare products and handle them in a manner to prevent adulteration.
- Clean and sanitize, before and after use, all equipment and utensils.
- Keep all products meant for sale separate and apart from custom prepared products at all times (i.e. prevent the cross-contamination of retail and custom products).



Did you Know?

Free roaming hogs were notorious for rampaging through the precious grain fields of colonial New York City farmers. The Manhattan Island residents chose to limit the forays of these riotous hogs by erecting a long, permanent wall on the northern edge of what is now Lower Manhattan. A street came to border this wall, aptly enough named Wall Street.



Source: The Pork Checkoff's Quick Facts Book, (2010) National Pork Board. Retrieved 3:56, September 17, 2013, from <http://www.pork.org/MediaLibrary/FlipBooks/QuickFacts2010/index.html>

Basic elements of effective food plant cleaning and sanitizing

Part 2 of 3

This is a continuation of Part 1, in the last Meat Messenger, where sanitation effectiveness was expressed through design of the plan, equipment and the facility. This issue, the article will focus on the seven steps for daily sanitation.

By Rory Redemann

In general, the sanitation process should be documented and sequenced such that protocols can be sustained. This means determining the necessary tasks, when and at what frequency those tasks should happen and in what specific order they should occur in order to ensure that sanitation methods are applied consistently. Training is key and should be conducted consistently to enhance the proper application of sanitation protocols.

The main objective is to maintain a state of continuous improvement of sanitation practices. In the short term, implementation of protocols and procedures may be the most difficult. A sanitary state is easier to achieve, if employees know how to disassemble equipment and clean it properly. Achieving long-term improvement involves improving upon equipment design to make it easy for people to do the right thing. In other words, if a task is difficult to do, the likelihood that it will be done consistently is significantly reduced. The ultimate goal in terms of long-term continuous improvement is to simplify equipment to have fewer components, an open design and make it easily accessible for cleaning to a microbiological level.

Documentation of Sanitation Practices and Protocols

- Sustains effective sanitation
- Lay out expected frequency and order of tasks
 - more efficient
- Training is improved
- Consistency of sanitation improves

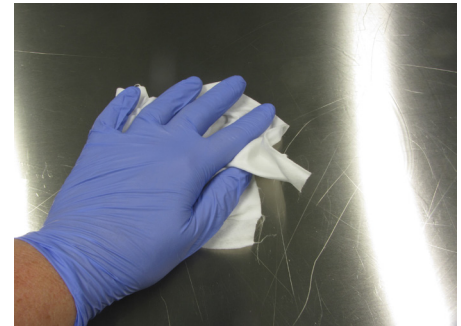
Continuous improvement is very important to effective sanitation.

Seven Steps of Daily Sanitation

To create a common foundation in the sanitation processes, we have identified the following seven steps from which to build specific cleaning requirements for equipment in wet/cleaned processes. It is important to understand that sanitation is a sequence of steps and these build from the successful completion of the previous steps. Sanitation practices are ineffective when steps are not taken in sequence. If there are multiple individuals working in the same area but they are not all working in the same step, the risk of cross-contamination is increased. For example, if one individual in that area is doing a final rinse while another person is doing a pre-rinse and the equipment is adjacent to each other, there is a risk of overspray from the un-sanitized surface to the sanitary one. Following daily sanitation steps in sequence and at the same time minimizes such risks.

Step 1: Dry Clean

The dry clean step involves making sure that pre-sanitation tasks are completed consistently. This includes



sweeping floors, removing materials, tools, loose or bulk soils and debris from the area to be cleaned, and covering equipment as necessary. In this step, equipment is disassembled to provide accessibility for cleaning and sanitizing.

The dry clean is completed before the sanitation crew begins to use water hoses. By removing bulk soil and debris before applying water pressure, the possibility of overspray to adjacent pieces of equipment, walls and floors is reduced. Also, the removal of bulk soil from the area before hosing, results in less drain pooling and backups, which poses a potentially high-risk situation.

Step 2: Pre-Rinse

The area and equipment surfaces are rinsed until they are visually free of soils, using the lowest effective pressure to reduce the risk of cross-contamination associated with aerosol migration and overspray. Lower

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pressure reduces the risk of cross-contamination and machine damage. Some operations may require the use of extra pressure in order to remove soils from surfaces. In cases in which the operator must rely on some impingement action generated by higher pressure water spray, it should be done during this step only.

Step 3: Soap and Scrub

At this point, the walls, floors and equipment should look clean from a distance, given that the majority all of the visible soils have been removed. The essential elements of cleaning—the right detergent at the right concentration, use of mechanical action, the appropriate water temperature and adequate contact time—now come into play. If the equipment surfaces are well prepared for detergent application (i.e., there should be no gross physical soils present or excessive water on the parts), the full benefit of the cleaning chemical at the correct concentration will be achieved. However, chemicals are not a substitute for mechanical action. Daily scrubbing of product contact surfaces is essential to remove the layer of invisible contaminants that may remain after the application of detergent. (Framework should be scoured weekly, at minimum.) At the same time, adequate contact time between the detergent and the equipment and other surfaces is necessary to achieve a high level of confidence that the cleaning procedure is actually working. If all four of these cleaning parameters are consistently followed, biofilm formation on surfaces is greatly reduced.

Again, the order of application is



important. At the soap step, cleaning agents should be applied to the walls and floors first and then applied to the equipment to reduce the potential for cross-contamination and to prevent detergent from drying on equipment surfaces. This sets the stage for effective rinsing at Step 4.

Step 4: Post Rinse

Only the lowest effective pressure and volume of water should be used during the post-rinse step to avoid risks associated with aerosols and overspray. Sanitation personnel should rinse the walls and floors, then the equipment, to avoid the potential risk of overspray or splashing on equipment that no longer has detergent. Similarly, personnel should minimize spraying the floor once rinsing of the equipment begins.

Step 5: Remove and Assemble

At this point, the equipment is clean and GMPs are employed as required. Sanitation personnel will ensure that condensate and standing moisture are removed, as well as any tools utilized during the cleaning process. The crew will conduct pre-operational procedures and sanitize

any equipment components that are not accessible once reassembled.

Step 6: Inspect

Pre-operational inspection provides added assurance that sanitation goals have been achieved in Steps 1 through 5. If deficiencies are found at this point, they can be corrected. (i.e. recleaned by a detergent, rinsed and reinspected).

Step 7: Sanitize

The final daily sanitation step is to sanitize the walls, floor and equipment surfaces. A typical method is to foam walls and floors with the equivalent of 800-1000 parts per million (ppm) of quaternary ammonium as the sanitizing agent. Foam allows the operator to visually confirm good coverage of the sanitizing agent. Walls, floors and the equipment should undergo a flood rinse using a no-rinse contact solution, applied according to the label. The target contact time for equipment is a minimum of 2 minutes. Wall and floor sanitizer should not be diluted prior to a minimum of 10 minutes of contact time.

Part 3 of 3 will be continued on the next Meat Messenger newsletter. This article has been slightly edited for brevity; the entire article is available at <http://www.foodsafetymagazine.com/magazine-archive1/aprilmay-2005/basic-elements-of-effective-food-plant-cleaning-and-sanitizing/>

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Salmonella resists disinfectants in study of food processing

By Meatingplace Editors

Once Salmonella bacteria get into a food processing facility and have an opportunity to form a biofilm on surfaces, it is difficult, if not impossible, to kill it, according to research published online in the journal Applied and Environmental Microbiology.

Researchers from National University of Ireland, Galway, conducted a study in which they attempted to kill Salmonella biofilms on various hard surfaces with three common types of disinfectant.

The disinfectants — sodium hypochlorite, sodium hydroxide and ben-

zalkonium chloride — were examined against an early (48 hours) and relatively mature (168 hours) Salmonella biofilm. All three agents reduced the counts of Salmonella, but only sodium hydroxide eradicated the early biofilm. None of the agents killed the mature biofilm, even after 90 minutes of soaking in disinfectant.

The impetus for the study was a European outbreak in which 160 people in 10 countries became ill from the Agona serotype of Salmonella. That outbreak was traced to meat from a food-processing facility.

The researchers said they were interested in determining if the Salmonella

that caused the outbreak might have something special about it that made it better at surviving in a food processing facility but uncovered nothing special about the specific strain.

“We found that all of the types of Salmonella we looked at were able to adopt the specialized biofilm lifestyle on all of the surfaces we looked at, including glass, stainless steel, glazed tile, and plastic, and that the biofilm of Salmonella gets more dense over time, and becomes more firmly attached to the surface,” said Mary Corcoran, a researcher on the study.

Source: <http://www.meatingplace.com/Industry/News/Details/47671>

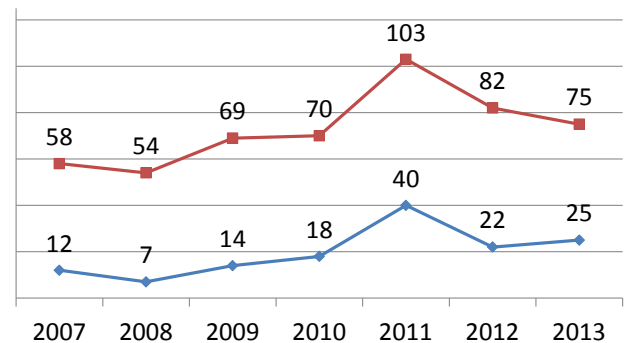
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and throat, difficulty in breathing, hives, vomiting, abdominal cramps, diarrhea, drop in blood pressure, unconsciousness, and in severe cases, death. Severe, life-threatening allergic responses are called anaphylactic reactions. The range of exposures needed to stimulate symptoms is so broad that the Food Safety and Inspection Services (FSIS) and North Dakota Meat and Poultry Inspection Program do not set a limit on allowable maximum concentrations for allergens. Any allergenic materials could pose a problem if not properly disclosed on the label.

Undeclared allergens in products shipped into commerce can only be controlled by recall. A large number of recalls are initiated every year due to undeclared allergens. Table 1 illustrates how recalls due to undeclared allergens comprise a large proportion of the total recalls. The cause of allergen recalls is often label review oversight or failure to reassess the HACCP plan when reformulating or changing seasoning suppliers. Other common causes of undeclared allergens include undisclosed changes in seasoning blends by the supplier, unapproved or misprinted labels, or product reformulation.

The increase in recalls due to undeclared allergens spurred publication of FSIS Compliance Guidelines, “Allergens and Ingredients of Public Health Concern: Identification,

Table 1: Allergen Recalls for 2007-2013 — Allergens (blue line), Total Recalls (red line)



Prevention and Control, and Declaration through Labeling.” This guidance document is a valuable resource to assist with identification of allergens, methods of control and prevention, handling of allergenic materials and declaring allergens present in a product. Links to the guideline are included in FSIS Notice 22-14 on the fsis.usda.gov website.

Anderson, Jane. “How much gluten can make me sick?” <http://celiacdisease.about.com/od/PreventingCrossContamination/f/How-Much-Gluten-Can-Make-Me-Sick.htm>; About.com.; Celiac Disease & Gluten Sensitivity; 3/26/2014

Cross-contamination control starts at slaughter

By Nathan Kroh

Cross-contamination – the transfer of bacteria, microorganisms, or other harmful substances indirectly from one surface to another through improper or unsterile equipment, procedures or products – can happen in many ways.

In a study published in the *Applied and Environmental Microbiology Journal*, marker bacteria inoculated on a small number of cattle hides entering the slaughterhouse were used to demonstrate that the bacteria become widely disseminated throughout the slaughterhouse environment. More than half of the animals had contaminated hides post-exsanguination. Another study showed that hide contamination increased from 50.3 to 94.4% percent from sampling pre-transport at the feedlot to sampling post-stunning and exsanguination at the processing plant, indicating cross-contamination during transport and penning at the plant.

The issue of cross-contamination starts well before the slaughter floor, but slaughter personnel must understand other forms of cross-contamination to control hide to carcass contamination. Bacteria can be transferred by direct contact from one surface to another, or bacteria can be carried through the air the same way dust is carried by air flow. A dry, dusty animal may shed billions of bacteria into the air, and employees may collect some of those bacteria on their jackets, pants, or hats. Air currents flowing from the holding pens toward the slaughter floor deposit dust and pathogens on exposed carcasses.

Contamination from the holding pens to the slaughter floor can be limited by careful control of employee hygiene and sanitation. Do not allow workers to wear any frocks, aprons, boots, or hats used on the carcass processing side into the holding pens. Ensure that employees wash hands and arms, change frocks, and scrub their boots thoroughly upon entering the slaughter room.

Spraying down hide-on carcasses helps keep the dust down but will not remove a significant number of pathogen bacteria. Using low-pressure hoses should keep splashing and overspray onto adjacent equipment. Skinning is a common point of cross-contamination, and excessively wet hides may splatter, so allow the carcass to drip dry a few minutes.

The hide can have billions of bacteria on it, so employees should assume that any contact with the exterior surface of the hide will result in contamination and subsequent cross-contamination introduced to the exposed carcass. Try implementing a two-knife system. The first knife makes the initial cut into the hide, down the shanks and along the belly. The second knife is to separate the membranes as the hide is peeled off. It is also very important to avoid letting the hide flap loosely, as the resulting splattering effect will contaminate the carcass. Wash both hands and sterilize all equipment before handling another animal.

Evisceration can be a source of contamination, so employees need to

develop skill and perfect a technique to avoid rupturing and exposing any of fecal material to the carcass. Any visible contamination must be trimmed, because antimicrobial interventions will not penetrate the surface of the carcass or into the foreign material. Spraying or wiping the foreign material, may actually spread the bacterial contamination by smearing the bacteria around. If using a hot water wash intervention, enough pressure to dislodge bacteria from its attachments is important, but avoid using excessive pressure, which can worsen overspray cross-contamination. Many plants have an organic acid antimicrobial intervention spray to reduce contamination, but if the carcass contamination is too great, the intervention will be overwhelmed and ineffective.

Preventing bacteria from entering any slaughter plant is impossible, so it is up to plant operators to prevent further cross-contamination from hide to carcass and from viscera to carcass. Controlling cross-contamination does not end after slaughter either. Allergenic ingredients, bacteria (*Listeria*, *Staph a.*), viruses (Norovirus), fungi (mold), and general filth are all other forms of potential contaminants, so care must be taken to limit any type of cross-contamination until the product is in its final packaging.

Mather, Reid, et al. *Factors Associated with Cross-Contamination of Hides of Scottish Cattle* by *Escherichia coli* O157:H7. *Applied and Environmental Microbiology*. 2008, 74(20):6313. Web access April 24, 2014.

Classified ads

We are always looking for industry related items to advertise in the Meat Messenger. We post sale and want ads **FREE**. Contact Julie Nilges (701-204-3248) at jnilges@nd.gov or Nathan Kroh (701-328-4767) at nkroh@nd.gov with product description and contact information.

Dean's Meat Market, Dickinson, ND: Turnkey business. Well established, custom-exempt processing with retail meats, cheeses and 30 different homemade sausages, recipes included. Large, fresh, retail meats counter and retail freezers. Includes all the working equipment, mostly stainless steel. Also includes walk-in coolers and freezer. Building not included but possibly negotiable. For more information, call Dean Evenson at 701-483-8461 and see the website at www.deansmeatmarket.com.

Sipromac one truck smokehouse: Smokehouse has a Juno microprocessor and liquid smoke attachment. Included are two trucks and many sticks and screens. \$20,000; **True Brand cooler:** Cooler has two sliding doors and was manufactured in 2001. \$1,000; **New one-quart plastic containers with lids:** \$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.

Walk-in freezer and components (4 items): (1) Three-phase Copeland compressor Hp p62 Freon, new in 2005. (Model 4RA3-100A-TSK-800, serial 05A66497R). (2) Single-phase Bohn cooling unit (Model 2402B serial DCD4540). (3) Larkin single-phase outside evaporator. (4) Walk-in freezer with shelves/baskets, sharp freeze shelves and cooling unit, has four-glass doors, free standing unit, walls snap together. Please contact Denise for more information at 701-438-2334. Located in Esmond.

Slaughter/processing business: Located in Esmond, 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 four years. Very strong customer base. Please contact Denise for more information at: 701-438-2334 or 701-351-1231.

Find us on Facebook

Our 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 page or 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

In this Meat Messenger

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