

# Food Safety Sentinel

**SPECIAL EDITION**

Newsletter for Alberta Agriculture's Provincially Licensed Meat Operators

## How to Control and Reduce *E. coli* O157:H7 in Meat Facilities

Alberta Agriculture and Rural Development has put together a special edition of the Food Safety Sentinel on how to control and reduce *E. coli* O157:H7 in meat facilities.

### What is *E. coli* O157:H7 and where does it come from?

*Escherichia coli* (*E. coli*) is a bacterium commonly found in the digestive tract of warm-blooded animals. Most *E. coli* types are harmless, but it is the pathogenic types such as *E. coli* O157:H7 that can cause illness and potentially death in humans.

### How can we control and reduce *E. coli* O157:H7?

Controlling and reducing *E. coli* O157:H7 in meat products involves many steps throughout the food chain (i.e. farm-to-fork). Here are some specific examples to help reduce and control *E. coli* O157:H7 at the abattoir.

#### 1. Choose Your Suppliers

Purchase animals from farms and/or feedlots that have little or no tag (clumps of mud and manure on the hide). Heavily tagged animals increases the risk of hide-to-carcass transfer of *E. coli* O157:H7 during dressing.

#### 2. Receiving/Unloading and Holding Pens

Unloading areas/chutes/equipment and holding pens should be cleaned regularly. This helps reduce environment-to-animal *E. coli* O157:H7 contamination.

#### 3. Check Your Water Source

Ensure you have potable water used for cleaning and sanitizing equipment, and used in production—including ice. This is done by testing your water and/or contacting your local municipality for test results. Private wells are a greater cause for concern because they often do not have a disinfecting system. This is especially important during run-off season and/or after a heavy rain storm.

**Note:** Because cattle are considered one of the main carriers of *E. coli* O157:H7, we will include the dressing procedures specific to this animal.

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#### 4. Sanitary Dressing Procedures

If there is *E. coli* O157:H7 on the cow's hide or in its digestive tract, the carcass may become contaminated during the dressing process which involves sticking, de-hiding, and evisceration.

- **Sticking/Bleeding**

Make as small of an opening as possible when exposing the jugular. The actual bleeding should be done with a second knife to avoid cross contamination from the hide to the carcass. A two knife system allows for one knife to remain in the sanitizer while the other is being used. If a one knife system is used, sanitize the knife after bleeding each animal. **Remember to trim the stick wound area.**

- **De-hiding (Hide removal)**

Contamination from the hide surface to the carcass can happen due to the nature of the hide removal process. It can occur by direct contact between hide and the carcass or by transfer from workers' hands, clothes, tools or equipment which have had previous contact with the hide. Here are some steps to consider to reduce the amount of contamination from the hide to the carcass:

- ⇒ The initial opening of the exterior of the hide should be as clean of an area as possible to reduce contamination to the carcass.
  - ⇒ Procedures for cutting through the hide should allow for the use of clean and sanitized equipment to prevent contamination onto the carcass surface.
  - ⇒ Carefully cut the hide away from the carcass.
  - ⇒ Trim the cut line area after the initial opening of the midline.
  - ⇒ Remove the hide above and below the place where the legs are to be cut. Do not cut through the hide.
  - ⇒ Trim any area that the hide has come into contact with the exposed carcass.
  - ⇒ Sanitize (82°C) the knife (both blade and handle) after each contact with hide or other contamination.
  - ⇒ Perform a final inspection of the carcass and remove any visible fecal contamination by trimming.
- It is important to trim fecal contamination and not wash with water as this does not remove the pathogen.**
- ⇒ Further recommended steps are to decontaminate the carcass with hot water (82°C or hotter) or with an approved antimicrobial product.

For more information on antimicrobial spray, visit [www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex14341](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex14341)

- **Evisceration**

Contamination from the viscera is prevented by rodding the weasand, bagging the bung and the intact removal of the visceral components. If performed correctly visceral contents do not contribute significantly to the overall contamination of the carcass. If visceral contents do contaminate the carcass, **remove by trimming**. Perform a final inspection of the carcass and remove any visible contamination by trimming.

#### 5. Carcass Chilling

Carcasses must be refrigerated immediately after dressing to reduce the risk of potential pathogen growth.

#### 6. Personal Hygiene

- Wash hands frequently, using proper hand washing procedures (i.e. wash with liquid soap and very warm water for the duration it takes to sing the 'Happy Birthday' song).
- Hands must be washed every time:
  - ⇒ an employee enters the production areas (kill floor, processing area, etc.),
  - ⇒ an employee returns from break (i.e. bathroom, lunch),
  - ⇒ when moving from dirty to clean areas,
  - ⇒ hands become contaminated.
- Frequently wash and sanitize aprons, especially when they become contaminated.
- Routinely clean and sanitize equipment and hand tools (i.e. knives, hooks, etc.) used to remove contamination and/or to make cuts in the carcass.
- Frequently clean hand held hoses to avoid cross contamination.
- Use gloves when handling ready-to-eat products and change them as often as you would wash your hands.



- Change footwear and clothing when moving from dirty to clean areas and from raw to cooked areas.

## 7. Facilities, Flow and Overall Sanitary Considerations

Ensure flow and overall production contributes to the production of safe product.

- Facilities and equipment involved in the slaughter and further processing operations should be thoroughly cleaned before the startup of the operations and maintained in a sanitary manner during operations.
- Design traffic/people flow to prevent cross contamination. (i.e. people working in the further processing operations should not work or travel through slaughter operations and vice-versa.)
- Arrange equipment to prevent the contact of carcasses with contaminated equipment.
- Monitor employee hygienic practices, hand washing practices, cleanliness, use of equipment, etc.
- Provide employees with the knowledge and the tools to conduct their jobs as efficiently and effectively as possible.
- Airflow in the facilities should go from the cleanest areas to less clean areas. This includes personal fans on the kill floor and in processing areas.
- Maintain adequate separation of raw and cooked product.

Use boot dips when moving from dirty to clean areas and from raw to cooked areas. Routinely check the concentration of the boots dips.



## 8. Transportation

It is important to ensure meat products are transported in a way to reduce the risk of contamination and to limit bacterial growth. Here are some steps to follow to help ensure safe meat products during transportation:

- Ensure temperatures of meat products are controlled during transport (i.e. refrigerated product kept at 4<sup>0</sup>C or colder).
- Keep transport vehicles in good condition to ensure contamination does not occur in meat products. Also, transport vehicles should be constructed so that the interior lining of the vehicle is smooth, water resistant and washable.
- Consider the previous truck load and ensure the truck is suitable to transport meat products. It is good practice to make sure the truck is washed frequently.
- Make sure the pallets used in transporting meat products are clean and in good repair. It is important to use protective covering on the pallets. Product should not directly contact pallets.
- Vehicles with rails used to transport carcasses should be positioned so that carcasses don't contact floors or walls of the carrier.

## 9. Recall Program

In the event that *E. coli* O157:H7 is detected or suspected in your product, it is required that abattoir operators have a recall program in place to retrieve all affected product as soon as possible. Part of a recall system includes a product coding system that involves all meat products having permanent, legible code marks or lot numbers on the packages or some other way of being tracked.

- The code identifies the establishment and the day, month and year in which the food was produced;
- When the code marks are used, the exact meaning of the code is available; and
- Where used, case codes are legible and represent the container code within.

## Did you know...

There are minimum requirements for employers' for first aid in their workplaces. Some of the requirements include a minimum number of staff being trained in first aid and minimum requirements for first aid supplies in a facility.

For more information, visit Alberta's Occupational Health and Safety Code 2009, Part 11 at: [http://work.alberta.ca/documents/WHS-LEG\\_ohsc\\_2009.pdf](http://work.alberta.ca/documents/WHS-LEG_ohsc_2009.pdf)

## Alberta Agriculture is Conducting a Microbiological Baseline Survey on Beef Carcasses

Alberta Agriculture and Rural Development (ARD) will conduct a microbiological baseline survey on beef carcasses processed at provincially licensed abattoirs beginning February 2015. This project is part of a Federal/Provincial/Territorial Pathogen Reduction Initiative that aims to:

- assess current pathogen levels in Canadian meat and poultry
- establish pathogen reduction targets
- identify and implement strategies to monitor and reduce pathogen levels.

The Pathogen Reduction Initiative aims to complete baseline studies in 3 areas: chicken, beef and ready-to-eat meats. The provincial chicken baseline study was completed in 2013, after which the planning began for the beef baseline study.

**Objective:** To determine the numbers and levels of pathogens on beef carcasses processed at provincially licensed abattoirs.

**Sampling:** Over a 1 year period, ARD staff will collect carcass swabs from post-hide removal/pre-evisceration and post-evisceration/pre-chill carcasses. The number of samples will be proportional to annual slaughter volumes.

**Results:** All results will be shared with the abattoir as soon as they are available. In the event a pathogenic *E. coli* is identified, support will be provided by ARD to work with the facility to ensure no public health risk arises from the product.

The results and knowledge from this initiative will be used to develop pathogen reduction strategies with the beef industry and lessen the risk and burden associated with foodborne illness.

For more information on the Federal/Provincial/Territorial Pathogen Reduction Initiative visit:

<http://www.inspection.gc.ca/food/meat-and-poultry-products/program-changes/pathogen-reduction/eng/1338819927004/1338819992816>

For more information about the provincial baseline survey, contact Dr. Natisha Stashko at 780-415-9791, toll free dial 310-0000 or email at: [natisha.stashko@gov.ab.ca](mailto:natisha.stashko@gov.ab.ca).

## The Interactive Map is up and Running!

The new interactive map will help consumers find local meat and meat products in their area. There is no cost to you to participate, and it will provide an exciting marketing opportunity for all Alberta Agriculture and Rural Development's provincially licensed meat facilities.

To participate in this opportunity, please contact Kimberly Comeau at 403-381-5114, toll free dial 310-0000 or email at: [kimberly.comeau@gov.ab.ca](mailto:kimberly.comeau@gov.ab.ca)

To view the interactive map go to:

[http://www.agric.gov.ab.ca/app68/listings/meat\\_facilities/meat\\_facilities\\_map.jsp](http://www.agric.gov.ab.ca/app68/listings/meat_facilities/meat_facilities_map.jsp)

## UPCOMING EVENTS AND COURSE

### 3rd Agriculture Career Fair

February 26, 2015

Lethbridge, Alberta

For more information on labour recruitment, contact Scott Dundas at [scott.dundas@gov.ab.ca](mailto:scott.dundas@gov.ab.ca)



### Banff Pork Seminar

January 20—22, 2015

Banff, Alberta

For more information visit [www.banffpork.ca](http://www.banffpork.ca)



### Animal Welfare & Humane Slaughter

Online Course

Olds College

For more information visit [www.oldscollege.ca/continuing-education/national-meat-training-centre/animal-welfare-humane-slaughter/index](http://www.oldscollege.ca/continuing-education/national-meat-training-centre/animal-welfare-humane-slaughter/index)

