

Ready to Eat Cooked Meats

Fact Sheet / December 2015

There are several provincially and federally approved meat processing facilities and food establishments that process ready to eat (RTE) cooked meats for commercial sale and distribution. Whether these foods are prepared for personal or commercial use, significant food safety issues can arise if improper food safety practices occur prior to, during, or after processing.

The specific risk factors covered in this factsheet are based on the science of the survival, growth, and toxin production of disease causing (pathogenic) microorganisms that can cause food-borne illness.

There is a wide variety of RTE cooked meat products available in the marketplace which include:

- Whole muscle meats (fully cooked hams)
- Sliced deli meats
- Sausages, hot dogs, pepperoni & salami
- Jerky
- Paté
- Some fermented meat products

RISKS AND CONTROLS FOR RTE COOKED MEATS:

RISK #1 Incoming raw meat typically has moderate to high microbial loads. Some of these microbes can lead to food-borne illness.

Control the risk:

Avoid cross-contamination - When preparing meat products; use appropriate cleaning and sanitizing methods for both raw and RTE food contact surfaces; practice frequent and thorough handwashing.

RISK #2 Potential growth of *Clostridium botulinum*

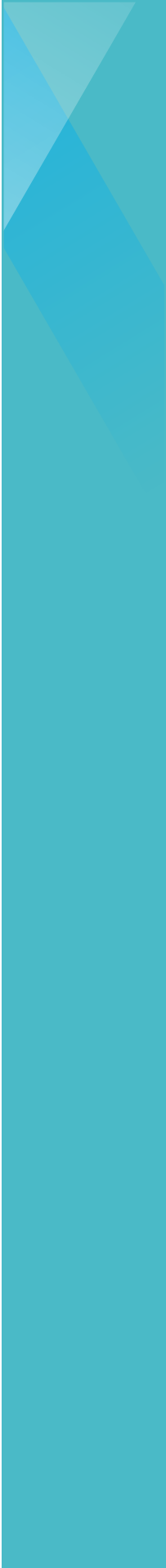
Control the risk: Curing meat products properly can aid in controlling *C. botulinum*. In most cases RTE cooked meats are formulated as a cured product and contain salt and sodium nitrite which act to prohibit the growth of *C. botulinum*, extend shelf-life and add colour to the product. Product formulations (calculations/testing) shall be used to ensure that maximum levels of restrictive additives are not exceeded.

Some RTE cooked meats do not contain nitrites due to the nature of the product (non-cured RTE cooked meats). In these scenarios, additional controls should be implemented to ensure the safety of the product.

Some of the RTE cooked meats have special preservatives that enhance the safety with respect to *Listeria monocytogenes* and are used to inhibit the growth if it is present.

RISK #3 Raw meats typically have moderate to high microbial loads. Some of these microbes can lead to food-borne illness.





Control the risk: Cooking can be accomplished by a variety of different processes such as steaming, boiling, smoking, or the use of an oven. Using a calibrated probe thermometer, cook products to the following internal temperatures found in the NS Food Retail and Food Services Code:

- Ground meats 71 C (160F)
- Beef 70 C (158F)
- Pork 70C (158F)
- Lamb 70 C (158F)
- Poultry products 85C (185F)

Temperatures can be verified by inserting the thermometer into the center of the largest piece of meat, in the coldest part of the unit.

RTE cooked meat processing may not always involve a maximum temperature with instantaneous lethality. By using a lethality table, a lower temperature with a set holding time may be accepted. For more information on lethality tables please see: *CFIA's Meat Hygiene Manual*

Although the cooking process kills bacteria, spores may survive. Given the right conditions, spores can germinate into active vegetative cells, and then begin to reproduce. The presence of salt and sodium nitrite greatly reduces germination of these spores.

Any deviation from the processes above must be assessed by the Food Safety Specialist for validation. Scientific evidence, provided by the facility operator, to support the decision of using alternate time/temperature combinations, is required.

RISK #4 Inadequate cooling can allow microbes to grow and spores to germinate.

Control the risk: Adequate and timely cooling can be achieved through various methods and is often dependent on the

individual product characteristics. Cooling curve information can be found in Section 17 of the NS Agriculture Guidelines for Food Processors; or the *CFIA Meat Hygiene Manual*.

Any deviation from the approved process must be assessed by the Food Safety Specialist for validation. Scientific evidence, provided by the facility operator, to support the decision of using an alternative cooling process, is required.

RISK # 5 Improper handling, paired with inadequate storage temperatures of contaminated RTE cooked food products could provide the ideal environment for pathogens to grow to numbers that may cause harm. This is especially true in RTE food items which will not undergo any further microbial destruction through additional heating.

Control the risk:

Refrigeration - Adequate temperatures of 4 C (40F) or below slows the growth of pathogenic microorganisms. Consumption of RTE cooked meats past the shelf life could be a health risk due to the potential presence of *Listeria monocytogenes*, a microorganism that can grow at refrigeration temperatures.

Control the risk:

Shelf life - Shelf life is determined scientifically based upon quality and safety parameters. Such parameters can include:

- Salt & nitrite content
- Anti-Listerial preservatives
- Moisture content & water activity
- pH

Any RTE cooked meat product without shelf stability testing and verification must be kept at controlled refrigeration temperatures.

Control the risk:

Production -

- Practice adequate hand washing
- Separate raw and RTE processing areas
- Consider post-packaging interventions to destroy microbes such as post production pasteurization or additives approved to reduce microbial activity in food.

RISK #6 Consumer related issues

Control the risk:

High risk populations- High-risk individuals (i.e. seniors, pregnant women) should avoid eating the following RTE cooked meat products:

- hot dogs, deli meats, etc. unless reheated to steaming
- pâté and meat spreads, unless frozen, canned or shelf-stable

Control the risk:

Allergens - Some ingredients classified as allergens may be present in RTE cooked meat products. Processors and consumers have a shared role in managing the risks associated with allergens. To avoid the risks, individuals should be aware of all ingredients before consumption. Processors must ensure that all food sold meet adequate labelling requirements for allergens as outlined on CFIA's website.

REFERENCES:

<http://www.inspection.gc.ca/food/meat-and-poultry-products/manual-of-procedures/chapter-4/annex-deng/1370527526866/1370527574493>

<http://www.inspection.gc.ca/food/labelling/eng/1299879892810/1299879939872>

<http://www.inspection.gc.ca/food/meat-and-poultry-products/manual-of-procedures/chapter-4/eng/1367622697439/1367622787568?chap=7>

For more information, please call your local Food Safety Specialist or visit our website at:

novascotia.ca/agri/programs-and-services/food-protection/