

CURING AT RETAIL INDUSTRY GUIDANCE

Section 5K-4.0050, Florida Administrative Code (F.A.C.)

Curing is the addition of salt, sugar and nitrite or nitrate for the purposes of preservation, flavor enhancement and color development. A Food Establishment must obtain written permission from the regulatory authority before curing foods. Curing simply means preserving meat. USDA's definition of 'cured' is meat soaked or injected with a brine solution to extend shelf life and secondly, to impart the flavors of the curing agents.

Nitrates and nitrites are short names for sodium nitrate and sodium or potassium nitrite which are forms of salt. Salts have been used to extend the shelf life of meats as it prevents rancidity and by also controlling the growth of bacteria. They are classified as curing ingredients and preservatives by USDA. Nitrite, when added to meat at the allowed levels set forth by USDA, completely inhibits *Clostridium botulinum* growth, almost completely inhibits *Clostridium perfringens*, and slows the growth of many other pathogenic bacteria such as *Listeria monocytogenes*.

Salt is used for flavoring, preservative effect, antimicrobial properties (control growth, does not kill bacteria) and to enhance the cure transport by osmosis through meat. It can be in granular or rock forms.

Sugar is used for flavor, counteracts harshness of salt and energy for bacteria that change nitrate to nitrogen dioxide, and lowers the acidity of the cure.

Also, nitrate and nitrite are used for flavor. They prevent warmed-over flavor in reheated products, retard rancidity during storage, add a cured-pink color to the product as well as bacteriostatic and anti-botulinal effects.

Application of Cure Ingredients:

Dry curing: The oldest way of curing meats. Curing ingredients are rubbed on the surface of the meat to be cured.

Stich pumping: A long needle with multiple holes around the shaft is used. The needle is inserted into meat and the curing solution is pumped into the product.

Artery injection: A large needle with only one hole in it is inserted into the brachial or femoral artery and the cure solution is injected into the arterial system.

Needle injection: A machine with multiple needles that injects, automatically, meats cuts with the curing solution. The most common way meat is cured today.

Massaging and Tumbling: Occurs after pumping to extract muscle proteins to bind the muscles together and allows for increased pickup and retention of moisture. Its function is the disruption of tissue structure and hastens the cure-ingredient distribution and the solubilization of muscle proteins. The Massaging relies on frictional energy, minimizes the tearing of muscles and minimizes particle size reduction. The Tumbling relies on impact energy and extracts myofibrillar proteins.



The Department requires that a Special Process Approval (SPA) application be completed and submitted with all supporting documentation as stated in the instructions for evaluation and acceptance. For all curing processes a validated process is required along with an acceptable HACCP plan and other required documents. All other applicable laws and rules apply.

Documentation Requirements:

- **SPA application**
- **HACCP plan:** Provide an adequate HACCP plan with copies of potential monitoring records.
- **Validated Process:** This is a document obtained from a certified laboratory, called a Process Authority, which will test both your process and your food to see if the result is safe and wholesome. Please go to www.afdo.org/foodprocessing to locate a Process Authority.
- **Food Process Flow Diagram:** This will illustrate the flow of food throughout the process. It must include the food ingredients and their amounts as well as their CCP points.
- **Standard Operating Procedures (SOPs):** Step-by-step description of the entire process from start to the finished food product. Include ingredients/amounts, each preparation step, method(s) of storage/distribution and display for sale, labels (include use by date, etc.), lot identification code system and how you track each lot, and calibration of applicable instruments.
- **Sanitation Standard Operating Procedures (SSOP):** These are the cross-contamination strategies and sanitation practices for your operation. State how things will be cleaned, how often, with what sanitizer and at what concentration, etc. Be careful to include all surfaces (tables, cutting boards), as well as all pieces of equipment and utensils required for making the product.
- **Food employee and supervisory training plan:** This is a document which outlines how those involved in this special process will be trained in all procedures and plans associated with this process.
- **Floorplan:** Layout of the processing area; include equipment placement involved in the process. Does not have to be professionally created but should be as accurate as possible.
- **Any other pertinent, applicable documentation to ensure the safety of the finished product.**

Please submit all required materials along with a completed Special Process Approval application to:
RetailHACCPspa@FDACS.gov

If after review all submitted materials are acceptable, the operator will receive written notification from the Department stating the SPA has been granted and what supporting documents the Department has accepted. These documents must be kept on site where curing is taking place and made available to the regulatory authority upon request. The inspector will review the documentation and ensure the establishment is implementing the accepted plans/procedures and retaining monitoring records as required to document proof of control.

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