Curing and Aging Country Hams

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Country cured meat products are quite prominent in the Southeastern United States, however, they are produced and consumed to a lesser extent throughout the United States and in other countries. This paper will mainly deal with how to set up a program and the processing of country cured hams. A certain type of facility is needed which will vary with the quantity of product to be produced. Generally, the basic requirements are: a 40°F curing room, a salt equalization room — 40-50°F, a processing room, and two aging rooms — 80-95°F. Other areas such as office, dry storage, inspector's office, rest rooms, etc., will be needed.

It will, no doubt, be advisable to purchase green hams rather than to set up a slaughter plant as a source of supply for green hams. When green hams are delivered to a plant they need to be fresh, not frozen. Hams delivered that have been salted should be rejected. Put hams in cure as soon as possible after receiving them at the plant.

There are many ways to dry cure hams, most of the procedures are satisfactory. The procedure discussed in this paper is one that has worked quite satisfactorily many times with a minimum of spoilage. It is generally stated that if there is more than one-half of one percent spoilage, the curing and aging procedure needs some adjustment.

It is better to cure country hams in lots of a specific number than to put hams into cure two or three times a week. When green hams arrive at the plant the internal temperature should be from 38-40°F. The temperature of the curing room should be 38-40°F with approximately 85 percent relative humidity.

Curing Procedure

The curing formula can vary considerably and still have a very acceptable product. The formula listed in the bulletin "Curing Georgia Hams Country Style" is 10-1-2-1: ten pounds of salt, one pound sugar, two ounces of nitrate and one ounce of nitrite. Another popular curing formula is 8-3-2-1: eight pounds of salt, three pounds of brown sugar, two ounces of nitrate and one ounce of nitrite. All curing formulas need to be thoroughly mixed. Apply the formula at the rate of one and one-half ounces of cure per pound of ham at three applications. One-third on the first day, one-third on the seventh day, and one-third on the fourteenth day. Hams should not be stacked over five high as the bottom hams in the stack will become flat. Hams can be rearranged at each rubbing to prevent some of this problem. Pressure on the bottom hams of the stack does not interfere with cure penetration. Hams should be stacked one directly on top of the other — do not stack hams in cure as bricks are laid in building construction.

Very little cure penetrates the area of the ham covered with skin and fat. The majority of the cure needs to be placed on the face and butt of the ham where most of the lean is exposed. Be careful not to jar the cure off the face of the ham when stacking in bins. Some commercial ham curers only rework hams once. They apply one-half of the cure on the first day and the other half of the cure on the sixteenth to eighteenth day. Leave the hams in cure for forty days. After this time wash the hams to remove the excess cure and put back under refrigeration at 40-50°F for salt equalization for an additional 20 days. The green hams will shrink approximately seven percent in cure and salt equalization. Hams can be put into cotton or plastic stockinet material and hung on a rack for salt equalization. The rate of cure penetration is at the rate of seven days per inch of thickness. At the end of salt equalization the hams can then be hung on a rack in the aging rooms. Hang hams one foot on center, make sure they do not touch the racks or each other as mold will likely develop at these points.

It is generally recommended that these hams be aged for forty days at 85°F. An exhaust fan is needed in the aging room to remove the excess moisture. During aging, a ham will shrink another ten to twelve percent. In order to label a country ham there must be eighteen percent shrink from green weight during curing and aging, and have not less than four percent salt. There are many time-temperature procedures for curing country hams. Meat Inspection requires that country hams be treated for Trichinella spiralis. At 85°F, a period of 15-22 days are required for Trichinella destruction. The additional time recommended for a total of forty days is needed to develop the tangy aged flavor.

Mold growth is controlled by air circulation and relative humidity control. After the forty days in aging at 85°F, the heat is turned off. The hams are stored in this room until sold. If mold growth is a problem, turn the heat on periodically and exhaust the moist air. This will dry the hams and prevent mold growth. Do not wrap and bag hams and keep them in storage for a period of time as mold growth becomes a problem.

Most country hams are not smoked. The amber color develops as a result of the heat and time in aging. Some commercial ham producers will rub the cured hams with a spice mixture just before wrapping and bagging hams that are ready for distribution.

When spoilage occurs in country cured hams and shoulders, some part of the curing and aging procedure was mismanaged.

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1. Not enough cure (cure bounced off when stacking)
2. Poor quality, high microbial count on and inside the green ham
3. Curing temperature too high or too low
4. Not long enough time in cure
5. Not long enough time in salt equalization

When country hams are to be smoked, it should be done after the aging period. In some cases liquid smoke is used. All precautions must be taken to prevent insect infestation on country cured meats. The main problems are blow fly, maggots, cheese skipper and ham miles. Good management can control these problems. If there is an insect infestation, the ham house, including hams, can be fumigated with methyl bromide. This is a deadly poison and should be used only by an experienced pest control operator.

Most country cured hams are further processed for the retail market. Perhaps the largest volume of sales is one-pound or twelve-ounce vacuum packed center cut and end slices. There is a rather large volume of country ham and biscuits sold at fast food outlets.

For further detailed information please write to the Extension Food Science Department, Cooperative Extension Service, The University of Georgia, Athens, Georgia 30602, and request the bulletin "Curing Georgia Hams Country Style."