

DRY-CURING *Virginia Style* HAM



VIRGINIA POLYTECHNIC INSTITUTE
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DRY-CURING
Virginia Style
HAM

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**It is against the law to sell uninspected home-cured hams either
commercially or privately.**

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Historical Background

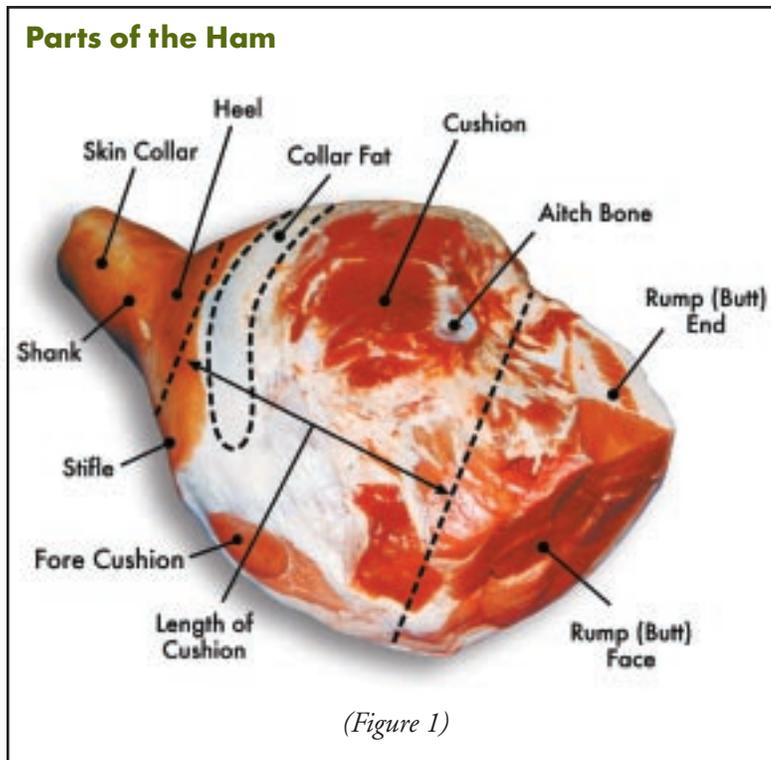
Virginia ham was one of the first agricultural products exported from North America. The Reverend Mr. Andrew Burnaby enthusiastically reported that Virginia pork was superior in flavor to any in the world.¹ Another early clergyman, the Reverend Mr. John Clayton, wrote the Royal Society in England that Virginia ham was as good as any in Westphalia.²

Start With a Good Ham

A high quality cured ham requires that you start with the proper type and a high quality fresh ham. Such fresh hams come from young, healthy, fast-growing hogs with a desirable lean-to-fat ratio. Fresh hams can be purchased from a retail store or a local meat packer who is under constant inspection by the USDA or the Virginia State Meat Inspection Service. This practice ensures that the meat product comes from a healthy hog.

Today, after more than three centuries of progress, Virginia ham is still considered a superb product because of its distinctive savory taste. For those who want to “do-it-yourself” cure and age a ham that will recapture the delightful flavor so highly cherished by these early clergymen, certain rules must be followed. This publication provides basic steps that can be applied to home curing or commercial operations.

Hams for curing should have a long thick cushion (Figure 1), a deep and wide butt face, minimal seam and external fat as seen on the collar (Figure 1) and alongside the butt face (Figure 3A) and weigh less than 24 pounds. Heavier hams are normally fatter and are more likely to spoil before the cure adjuncts penetrate to prevent deterioration. Therefore, one’s capability to control temperature and relative humidity determines the type of ham to cure.



(Figure 1)

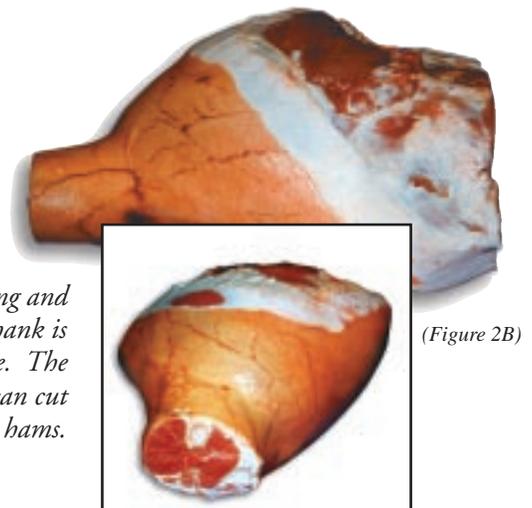
Figure 2B is a “Regular” cut ham. This style of cut is satisfactory for curing and aging hams under conditions of **controlled temperature and humidity**. The shank is cut short, exposing an open bone with marrow and lean tissue around the bone. The butt is cut between the 2nd and 3rd Sacral Vertebrae which results in a larger lean cut butt face than on “Country Style” hams.

Types of Fresh Hams



(Figure 2A)

Figure 2A is a “Country Style” ham. This ham has a long shank (solid bone) and a butt cut at the sacral joint. This style of cutting leaves less lean meat exposed in the shank and butt areas, which reduces the possibility of spoilage.



(Figure 2B)

¹Travels through the Middle Settlements of North America, 1749-1760, 16.

²Letter to the Royal Society, May 12, 1688. Tracts and Other Papers Relating Principally to the Origin, Settlement, and Progress of the Colonies in North America to the Year 1776. Compiled by Peter Force. Vol. III, No. 12, 36.

How to Identify a Quality Fresh Ham

A High Quality Ham

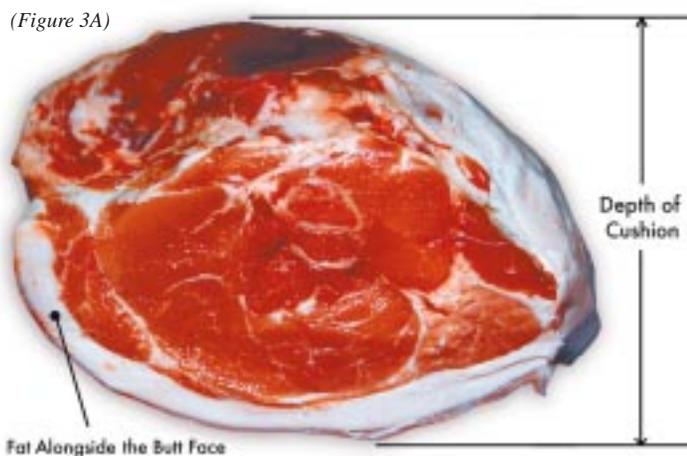


Figure 3A illustrates a high quality ham that has a firm, bright-colored lean with at least a small amount of marbling (specks of fat in the lean) in the butt face.

A Low Quality Ham

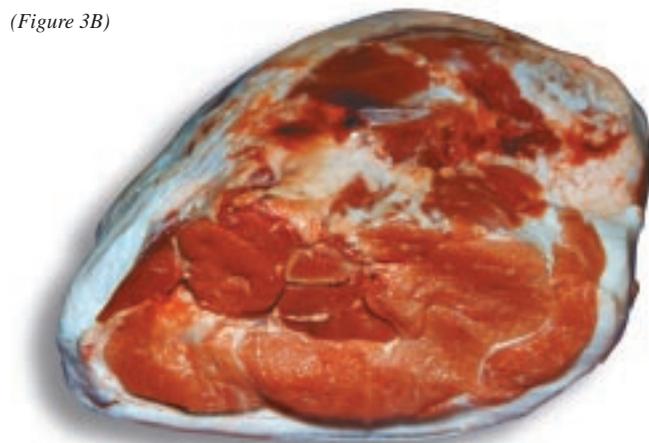
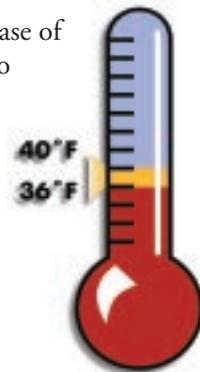


Figure 3B reveals the type of ham to avoid. Its muscles are soft, usually pale in color and lack marbling. They also “weep” excessively and will shrink more during curing. The open seams between the muscles allow bacterial and insect invasion.

*Obtainable from a drug store.

Keep the Hams Properly Chilled

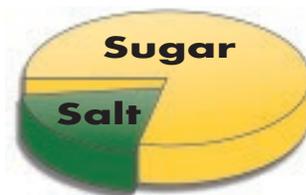
Proper procedures prior to the purchase of a fresh ham such as chilling the carcass to below 40°F before it is cut and maintaining this temperature until the time of purchase assure a sound product. Continued temperature control of 36°-40°F during curing is essential for a good finished product.



Cure Application

The cure mix to use depends upon personal preference. Salt alone is acceptable. However, the dry sugar cure is preferred by most people. For each 100 lbs. of fresh meat, use:

- 8 pounds salt
- 2 pounds sugar
- *2 ounces of saltpeter



Mix these ingredients thoroughly and divide into 2 equal parts. Apply the first half on day 1, and the second portion on day 7 of the curing period.

Rub the curing mixture into all lean surfaces (Figure 1) of the ham. Cover the skin and fat, but little will be absorbed through these surfaces.

Cure the Proper Length of Time

Virginia style hams should be cured 7 days per inch of cushion depth (Figure 3A), or 1½ days per pound of ham. Keep accurate records of placing hams in cure. Also, write the date to remove hams from cure on the calendar as shown.

In Cure

| DECEMBER | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|
| WTH | MON | TUE | WED | THU | FRI | SAT |
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | | |

Early December is the best time to start curing Virginia style hams under ambient conditions.

| JANUARY | | | | | | |
|---------|-----|-----|-----|-----|-----|-----|
| SUN | MON | TUE | WED | THU | FRI | SAT |
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | | | | | | |

During the curing period, keep hams at a temperature of 36°-40°F.

Out of Cure

After Curing—Soak and Wash



(Figure 4)

When the curing period has passed, the hams should be placed in a tub of clean, cold water for 1 hour. This will dissolve most of the surface curing mix and make the meat receptive to smoke. After soaking, scrub the ham with a stiff bristle brush and allow it to dry.

Cure Equalization

After cure removal by washing, the cured product should be stored in a 50-60°F environment for approximately 14 days to permit the cure adjuncts to be distributed evenly throughout the ham. The product will shrink approximately 8-10% during cure application and equalization.

In Southeastern Virginia, most hams are smoked to accelerate drying and to give added flavor. The Smithfield ham is smoked for a long time at a low temperature (under 90°F). Wood from hardwood species of trees (trees that shed their leaves in the fall) should be used to produce the smoke. Hickory is the most popular, but apple, plum, peach, oak, maple, beech, ash, or cherry may be used. Pine, cedar, spruce, and other “needle leaf” trees are *not* to be used for smoking meat since they give off a resin which has a bitter taste and odor.

The fire should be a “cool” smoldering type which produces dense smoke. The temperature of the smokehouse should be kept below 90°F. Hams should be hung in a smokehouse* so that they do not touch each other. They should be smoked until becoming chestnut brown in color, which may take 1-3 days.

Non-smoked Procedure — In Southwest Virginia, the process is to rub 100 lbs. of hams after cure equalization with the following thoroughly mixed ingredients.

- 2 pound black pepper
- 1 quart molasses
- 1 pound of brown sugar

1 ounce of saltpeter

1 ounce of cayenne pepper

Then bag the hams as shown in step 1 on page 6.

Age the Hams for 45 to 180 Days

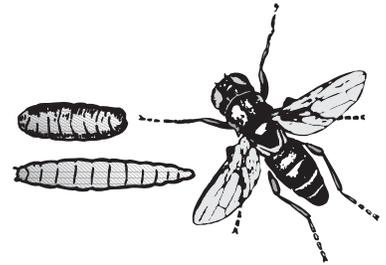
The aging period is the time that the characteristic flavor is developed. It may be compared to the aging of fine wines or cheeses.

Age hams for 45-180 days at 75-95°F and a relative humidity of 55-65%. Use an exhaust fan controlled by a humidistat to limit mold growth and prevent excessive drying. Air circulation is needed, particularly during the first 7-10 days of aging, to dry the ham surface. Approximately 8-12% of the initial weight is lost.

Cured meat is a good source of food for pests that infest dry-cured meats. The insects attracted to cured meat are the cheese skipper, larder beetle, and red-legged ham beetle. Mites, which are not insects, also may infest cured meats.

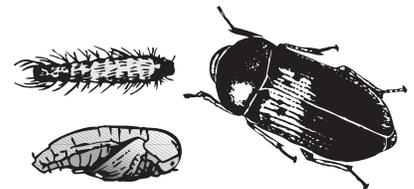
1. Cheese Skipper—

This insect gets its name from the jumping habit of the larvae which bore through cheese and cured meats. Meat infested with this insect quickly rots and becomes slimy. Adult flies are two-winged and are one-third the size of houseflies. They lay their eggs on meat and cheese and multiply rapidly.



2. Larder Beetle –

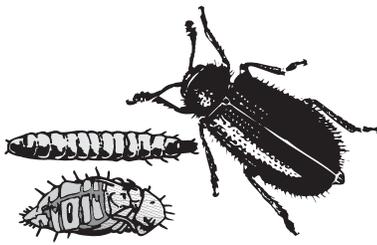
This insect is dark brown and has a yellowish band across its back. The adult is about 1/3 inch long. Its larvae feed on or immediately beneath the cured meat surface, but do not rot the meat. The larvae are fuzzy, brownish, and about 1/3 inch long at maturity.



3. Red-Legged Ham Beetle –

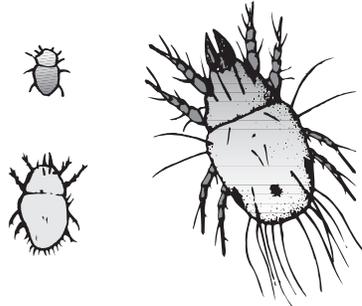
The larvae are purplish and about 1/3 inch long. They bore through the meat and

*Plans for a small smokehouse can be ordered from Department of Food Science and Technology (0418), Virginia Tech, Blacksburg, Virginia 24061.



cause it to dry rot. Adults are about 1/4 inch long, brilliant greenish blue with red legs and are red at the bases of their antennae. They feed on the meat surface.

4. **Mites** – Mites are whitish and about 1/32 inch long at maturity. Affected parts of meat infested with mites appear powdery.



Insect illustrations were modified from Home and Garden Bulletin No. 109, U.S. Department of Agriculture, Washington, D.C.

Recommended prevention includes starting the curing and aging during cold weather when these insects are inactive. Proper cleaning of the aging and storage areas is essential since the cheese skipper feeds and breeds on grease and tiny scraps of meat lodged in cracks. Cracks should be sealed with putty or plastic wood after cleaning. Screens should be installed to prevent entrance – especially of flies, ants and other insects that carry mites. Double entry doors are recommended to reduce infestation of insects.

After cleaning and sealing cracks, a surface spray should be applied to the floor so that the thin layer of insecticide will kill crawling insects. Spray aging rooms once every three months with a pyrethrin spray to reduce infestation. **FOLLOW MIXING AND APPLICATION DIRECTIONS ON THE PESTICIDE LABEL.** Synergized pyrethrins may be applied with a paint brush if the room is stocked with meat. If applied as a spray, remove all meat products from the storeroom before spraying all surfaces on which houseflies and other pests are likely to crawl. Allow the spray to dry before any meat is returned to the store room.

If any product becomes infested after precautions have been taken, it should be removed from the storeroom and the infested area should be trimmed. The trim should be deep enough to remove larvae that have penetrated along the bone and through the fat. The uninfested portion is safe to eat, but should be prepared and consumed promptly. The exposed lean of the trimmed areas should be protected by greasing it with salad oil or melted fat to delay molding or drying.

Protect the hams by placing a barrier between the meat and the insects. Heavy brown grocery bags with no rips or tears in them are ideal to use for this purpose.



(Figure 5)



(Figure 6)

As shown in Figures 5-7, place the ham in a bag and fold and tie the top. Then, place the bagged ham in a second bag, fold and tie as shown.

The hams wrapped by this method can be hung in a dry, cool, protected room to age. This room should be clean, tight, and well ventilated.



(Figure 7)

Preparing the Ham

Virginia ham remains one of the favorite foods of Virginians and their guests. It can be prepared in a variety of ways and served with endless combinations of foods which complement ham.

The traditional 4-step method is to: (1) Wash ham with a stiff bristled brush, removing as much of the salt as possible. (2) Place the ham in a large container, cover with cold water, and allow it to stand 10-12 hours or overnight. (3) Lift the ham from the water and place it in a deep kettle with the skin side up and cover with fresh, cold water. (4) Cover the kettle, heat to a boil, but reduce heat as soon as the water boils. Simmer 20 to 25 minutes per pound until done.

Another method of cooking is to soak, scrub, and place the ham in a covered roaster, fat side up. Then, pour 2 inches of water into the roaster and place it in a 325°F oven. Cook approximately 20 to 25 minutes per pound. Baste frequently. Cook to an internal temperature of 155°F as indicated by a meat thermometer placed in the thickest position of the ham cushion. If you do not have a

meat thermometer, test for doneness by moving the flat (pelvic) bone. It should move easily when ham is done.

Lift ham from kettle. Remove skin. Sprinkle with brown sugar and/or bread crumbs and brown lightly in a 375°F oven, or use one of the suggested glazes.

Orange Glaze: Mix 1 cup brown sugar, juice and grated rind of one orange, spread over fat surface. Bake until lightly browned in a 375°F oven. Garnish with orange slices.

Mustard Glaze: Mix 1¼ cup brown sugar, 2 teaspoons prepared mustard, 2 tablespoons vinegar and 1 tablespoon water. Spread over fat surface and bake as directed above.

Spice Glaze: Use 1 cup brown sugar and 1 cup juice from spiced peaches or crab apples. Bake as directed above. Garnish with the whole pickled fruit.

Cooking Ham Slices

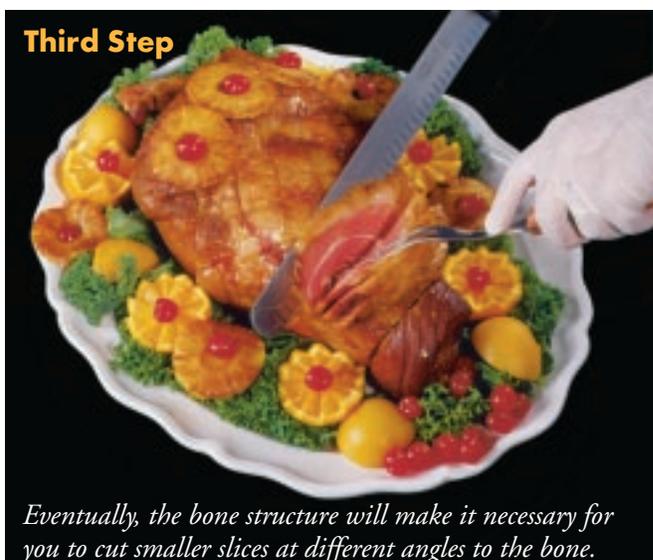
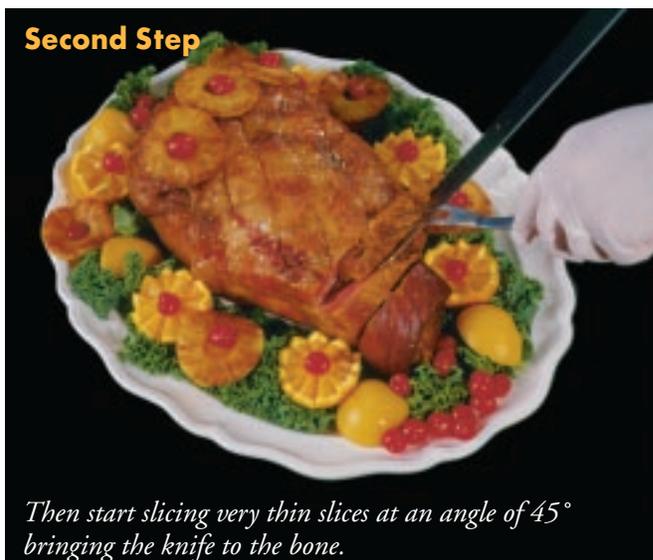
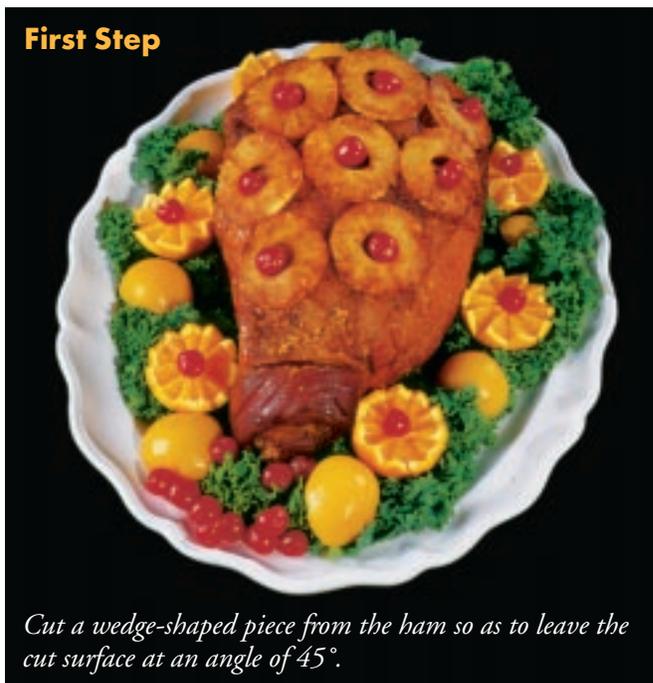
Baking: Place thick slice in covered casserole and bake in 325°F oven. Brown sugar and cloves, fruit juice, or mustard-seasoned milk may be used over the ham during baking. Uncover the last 15 to 20 minutes for browning.

Broiling: Score fat edges and lay on broiler rack. Place 4 inches from broiler and broil for specified time, turning only once.

Frying: Trim the skin off the ham slices. Cut the outer edge of fat in several places to prevent it from curling during cooking. Place a small amount of fat in a moderately hot skillet. When it has melted, add ham slices. Cook ham slowly, turning often. Allow about 10 minutes total cooking time for thin slices. Remove ham from pan and add a small amount of water to raise the drippings for red-eye gravy. To decrease the salty taste, fry ham with a small amount of water in the skillet.

How To Carve a Ham

The most delightful flavor of Virginia ham can be enjoyed from thin slices. Thus, a very sharp knife, preferably long and narrow, is needed. With the ham on a platter, dressed side up, make a cut perpendicular to the bone about 6 inches in from the end of the hock. Then follow the steps in figure 8.

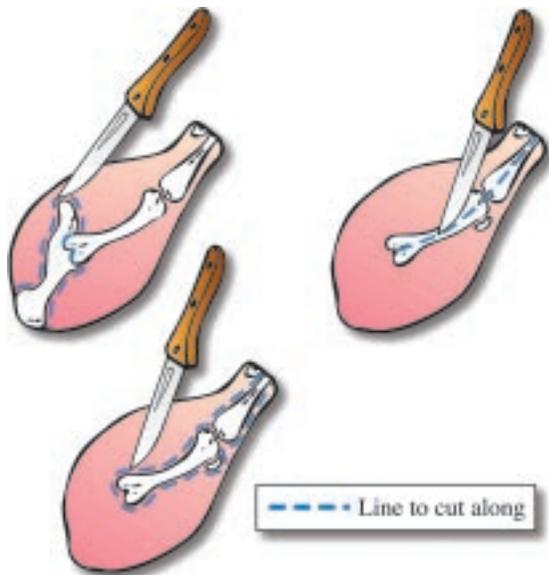


(Figure 8)

How To Bone Cooked Ham

The ham is easier to slice when the bones are removed while the ham is warm.

- Place skinned ham fat side down on 3 or 4 strips of firm white cloth 3 inches wide and long enough to reach around ham and tie. Do not tie until bone is removed.
- Remove flat aitch bone (pelvic) by scalping around it.
- Take sharp knife, and, beginning at hock end, cut to bone the length of ham. Follow bones with point of knife as you cut.
- Loosen meat from bones. Remove bones.
- Tie cloth strips together, pulling ham together as you tie.
- Chill in the refrigerator overnight. Slice very thin, or have the ham sliced by machine.



Recipes for Cooked Ham

Sliced ham sandwiches made from Virginia ham are very tasty. Take your choice of breads and extras, but be sure the ham flavor comes through. Ham biscuits are a special treat. Serve thinly sliced ham in a crusty biscuit – large biscuits for family meals; dainty ones for a tea table.

Or make a ham salad filling by grinding cooked ham. Flavor with finely chopped celery, onion, and/or pickle. Moisten with mayonnaise or salad dressing.

Scraps of cooked ham may be added to scrambled eggs for added flavor. Use the bone and meat adhering to it to flavor a pot of beans or split pea soup.

HAM LOAF OR CROQUETTES

| | |
|----------------------------|--|
| 2 eggs | 1 Tbsp. grated or finely chopped onion |
| 2-3 cups ground cooked ham | 1 cup milk |
| 1 1/2 cups bread crumbs | (reserve 1/2 cup) |

Beat eggs slightly. Add other ingredients. Pack into baking pan. Sprinkle with remaining 1/2 cup bread crumbs. Bake in a 350°F oven for 45 minutes. Or form into 6 croquettes, roll in 1/2 cup crumbs, and brown in a small amount of hot fat.

CREAMED HAM DELUXE

| | |
|---|-----------------|
| 1 Tbsp. ham fat, butter, or margarine | 4 Tbsps. flour |
| 1 Tbsp. chopped onion | 2 1/2 cups milk |
| 2 cups ground, cooked ham (meat from hock may be used) | |

Place fat in heavy frying pan, add onion, and cook until onion is tender but not brown. Add ham, stir, and heat. Add flour, stir and cook about one minute. Add milk, 1/2 cup at a time, stirring constantly. Cook until mixture thickens. Serve on waffles, hot biscuits, corn sticks, or toast.

Disclaimer

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(Figure 9)