11-1926

Cutting Curing and Canning Pork

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Extension Circular 253 November, 1926

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CUTTING CURING AND CANNING PORK

F. H. HELMREICH and TURNER WRIGHT

MUCH of the meat butchered on farms for home use spoils before it can be eaten. Furthermore, much of it that does not spoil is so well cured that it is "too salty to eat" without first being "soaked" or par-boiled. This is due largely to lack of knowledge of good methods and practices that make for safety in both curing and canning.

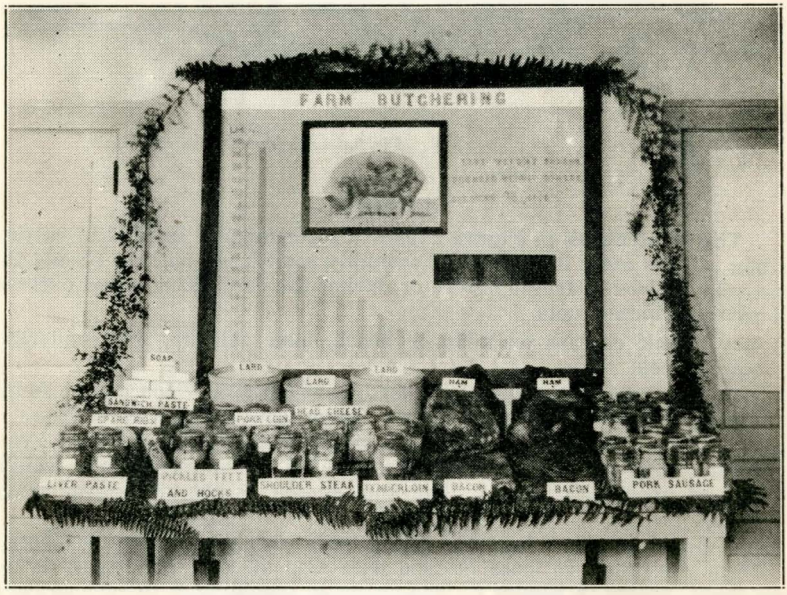

Fig. 1.—This exhibit shows the products of a 320 pound hog as prepared by agricultural students at South Dakota State College.

Most farmers make it a practice to cure and can their summer meat supply during the fall or winter. Both the farmer and his wife take an active interest in providing and preparing this supply of meat for summer use, both realizing that a balanced diet must include meat in some form. Then too, the farmer is entitled to use some of the good products on his own table and the meat animals rank among his best. With these conditions in mind, this circular is prepared to point out certain definite

methods of cutting, curing, and canning which have proved successful both on farms and in the South Dakota State College abattoir.

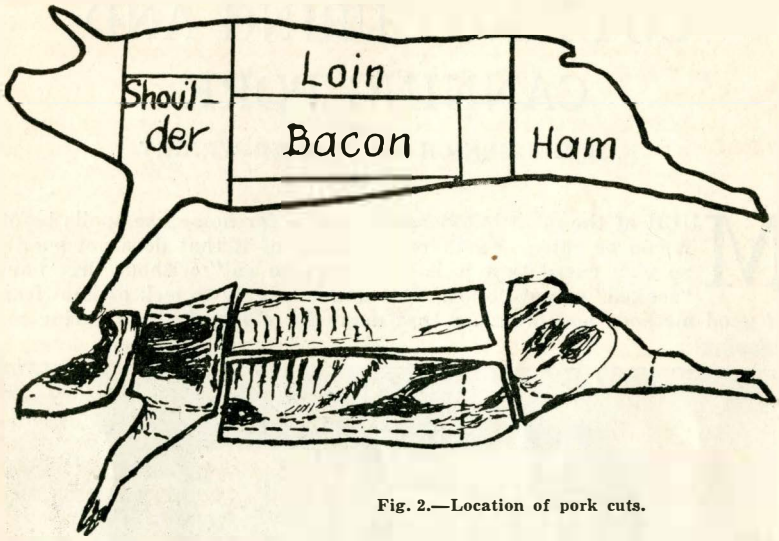

Fig. 2.—Location of pork cuts.

CUTTING

The illustrations in Figure 2 show a recommended method of cutting a hog carcass after it has been thoroughly cooled. At no time should the meat be allowed to freeze before or during the cure. The dotted outlines show the trimmed cuts.

1. Lay a half carcass on table or bench, bone side up, with underline toward you.
2. If not already removed, cut off head at atlas joint which can be found by moving the snout up and down. Trim head for pork specialties.
3. a. Cut off ham at a right angle to shank starting at point where vertebrae bend upward toward the tail. This is for an average weight hog of about 225 pounds. The ham should be cut shorter in heavy hogs.

   b. Trimming: Place ham on cutting table with shank pointing directly from you. Remove loose fat and trim ham to correspond with dotted outline, shown in Figure 2. The object in trimming is to remove loose fat and rough corners. If the hog weighs more than 300 pounds it might be well to partly skin the ham and remove some of the excess fat. The aitch bone may or may not be sawed on a level with the face of the ham. Saw off ham shank three to four inches above bulge of ham, as shown in Figure 2.
4. a. Remove the rough shoulder by sawing across the fourth rib or just back of the shank at right angles to the carcass.

   b. Trimming: Remove neck bones sparingly leaving as much meat on shoulder as possible. Remove the upper one-fourth called the Boston butt if the hog weighed 250 pounds or more. Trim face of shoulder

smoothly and trim edges according to dotted outline as shown in Figure 2. Shoulders or "Picnic" hams from small hogs dry out quickly after curing and can be used to equal advantage by putting them into pork sausage or by canning the lean meat and rendering the fat. If the shoulder is to be cured, allow part of the shank to remain as shown in Figure 2 to facilitate handling in the smoke house.

5. a. To trim the middle, first remove the leaf lard which is the fat lining the body cavity. Separate the back from belly by cutting from base of tenderloin, across ribs, to angle of rib and backbone where shoulder was removed. Remove spare ribs from belly and block out bacon side according to dotted outline. The flank bacon may or may not be trimmed off.

   b. Separate the fat back from the loin and cut it into one-inch cubes preparatory to rendering. Cut the loin muscle from the backbone if it is to be canned.

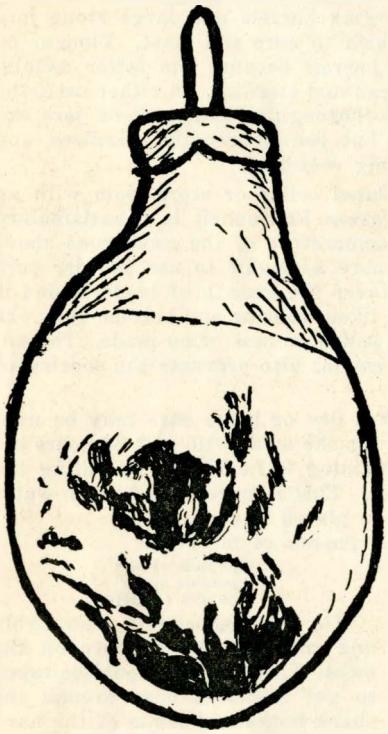

Fig. 3.—Properly trimmed ham.

6. Trimming the Head: All the edible parts about the head should be taken out and trimmed off and then cooked for the head products desired. The practice of cooking the head after the brain has been taken out, in order to remove the meat, is not recommended because of the filth and dirt which is lodged in the nasal and ear cavities and around the teeth.

CURING

The most common practice on farms is to cure the hams, bacon or side meat, and the shoulders. As mentioned previously, cured shoulders have a tendency to dry out and harden considerably unless they are taken from fat hogs weighing 250 pounds or over. Shoulders from hogs weighing less than this can be used to better advantage in pork sausage or by canning the meat when fresh.

NOTE.—If the carcass was split by cutting the ribs on each side of the backbone thereby removing it, which is a common farm practice, the foregoing method of cutting the sides applies with but few changes. The first step is to remove the ribs trimming them spare; that is, leaving as little meat on them as possible. The backbone and ribs should be broken or cracked, with a sharp ax or cleaver into lengths convenient for cooking. The hams and shoulders should then be cut and trimmed exactly as described in the other method. To trim the middle piece, strip out the loin or back muscle, cut off the strip of fat which is underneath, finish shaping the middle by cutting off a strip along the lower or thin edge, just wide enough to remove the teats. Cut the middle, length-wise of the hog into two bacon strips, one thick and the other thin. The loin muscle can be made into sausage; or better, cut suitable for table use, cooked and canned. The fat trimmings should be rendered into lard.

Curing Agents.—A high grade common salt forms the basis of all meat curing in that it has a preservative and drying effect on the meat fibers and prevents bacterial action. To counteract the action of salt, to add sweetness of flavor and to soften the lean tissues, brown or white sugar are usually added. Some curing formulas recommend molasses instead of sugar. Saltpeter is used to impart a red color and if not used, the meat will be pale red or gray in color when taken from the cure. Pepper is often recommended to impart flavor but is not essential to proper preservation of meats. Meat that is to be cured must not contain animal heat and should not be allowed to freeze before or during the cure.

Utensils or Vessels for Curing.—Oak barrels and large stone jars make vary satisfactory vessels in which to cure the meat. Vinegar or pickle barrels are preferred to lard barrels because the latter usually contain rancid lard and are hard to clean and sterilize. In either case, the barrel must be scrubbed and scalded thoroughly. Large stone jars are rather expensive and easily broken but can be readily sterilized and therefore make very satisfactory curing vessels.

Place for Curing.—A well ventilated cellar or store-room with an average temperature of about 40 degrees Fahrenheit is a satisfactory place to cure meat. If the average temperature of the room runs above 40 degrees Fahrenheit, it would be more advisable to use the dry cure method. Such temperatures tend to favor the growth of bacteria and if the brine method is used, the brine is likely to sour and become ropy. In case this happens, the brine must be boiled or new brine made. The addition of baking soda to brine cure formulas also prevents the souring of brine in warm weather.

Methods of Curing.—Any standard dry or brine cure may be used but in either case it is a good plan to rub the meat wtih salt 24 hours before curing and allow it to drain. Draining is facilitated by tilting the table or laying the meat skin side up. This removes the bloody water which is likely to dilute the brine when placed in cure.

Dry Cure Method.—For every 100 pounds of meat use:

8 pounds of salt
3 pounds sugar
3 ounces saltpeter

Fig. 4.—Properly trimmed bacon strip.

Mix the ingredients thoroughly and rub half the mixture on the meat. Special care should be taken to get sufficient cure around the shank bones and joints of the ham. This allows the cure to penetrate rapidly and preserve the inside of the ham which is most important. Too many are careless in the matter of applying the dry cure and have trouble later with sour hams. The bacon slabs are rubbed and covered evenly with dry cure. Pack pieces into the vessel skin side down, except the top layer. In seven days, the other half of the mixture is applied. Repack on the twenty-first day and remove all bacon. Thin bacon slabs may be safely removed on the twelfth day. Meat which is to be kept ten to twelve months should remain the entire time. The liquid which accumulates in the bottom of the barrel should be allowed to remain. Repacking the meat three or four times during the curing process will give more uniformity in the cure.

Two and one-half to three days per pound will be sufficient for hams and shoulders. A twelve pound ham will require about thirty days of cure, but if it is to be kept through the hot summer months three days per pound will not be too much. Wash the meat with warm water to remove excess salt and fat from skin, allow to drip 24 hours and then smoke if the smoked flavor is desired.

Another Dry Cure Formula.—For every 100 pounds of meat use:

4 pounds of good salt
1 pound of brown sugar
2½ ounces of saltpeter
¾ ounce of red pepper
6 ounces of black pepper

Rub the meat thoroughly, after it is cool and trimmed, with one-half the mixture. Put in a cool, dry place. Rub in the remainder of the mixture in 10 days and let lie for six weeks longer. It should then be hung and the excess cure or salt brushed off. The time required for the meat to take sufficient salt depends to a large extent upon the weather.

Brine Cure Method.—For every 100 pounds of meat use:

3 pounds of brown sugar
12 pounds of salt
2 ounces of saltpeter
6 gallons of water

Mix ingredients thoroughly and rub some of the mixture into the pieces to be cured. Pack the pieces in a barrel skin side down except the top layer. Weight down the meat with tile, brick or some hardwood. Pine wood or limestone are both likely to impart undesirable flavors. If not properly weighted, the meat will float when the brine is poured into the barrel.

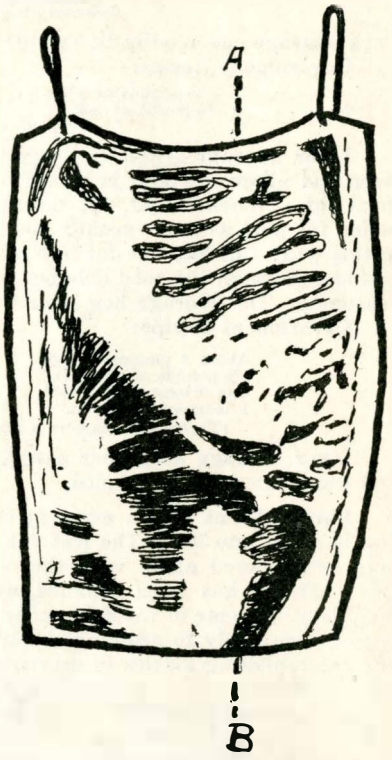

Fig. 5.—Heavy sides should be cut into a thick strip and a thin strip at about the line A--B for convenience in curing and cooking.

Dissolve the ingredients left, after rubbing the meat, in six gallons of water which has been previously boiled. When brine has cooled, pour it over the meat. The meat should be completely covered and be allowed to remain three days per pound per piece for hams and shoulders. Bacon slabs will be sufficiently cured when allowed to remain two days per pound per piece. No attempt should be made to cure pieces over 16 to 18 pounds in weight. Heavier pieces should be trimmed or cut in two. Repacking the meat every week brings about a more uniform cure. If the brine becomes sour and ropy, the meat should be taken out and the brine boiled with soda added. In case the old brine does not clear up, it will be necessary to make a new brine, which should be weaker than the first one. The meat must be washed thoroughly and the barrel scalded before repeating the cure.

MAKING OF PORK SPECIALTIES

Pork Sausage.—Use lean and fat trimmings about three-fourths lean and one-fourth fat. Grind thru a medium plate. For every 50 pounds of pork use:

1 pound of salt
2½ ounces of black pepper
2 ounces of sage, if preferred

Pork sausage can readily be canned as discussed under "Meat Canning."

Government Recipe:

25 pounds of pork
½ pound of salt
¼ ounce of ground nutmeg
¾ ounce of pepper
½ ounce of sage

Liver Sausage.—Remove large blood vessels and bile duct from the liver and allow to stand in water for an hour or more. Then boil liver until done. When cooled, put through food chopper. Take half as much boiled fat port as liver, usually the meat taken from the head is utilized in this way. Cut half the fat into one-fourth inch cubes and press the remainder through the food chopper. Mix all together thoroughly and add seasoning. The average hog liver weighs about three pounds.

Government Recipe:

About 3 pounds of liver
1½ pounds of fat pork
6 to 8 teaspoons of salt
1 teaspoon of cloves
1 Teaspoon of pepper
2 small onions
½ teaspoon thyme
Pinch of marjoram
(Thyme and marjoram may be omitted to suit taste.)

Liver sausage keeps but a week or two under favorable conditions and therefore must be canned.

Lard.—About fifteen per cent of the weight of the average butcher hog is made into lard. The leaf fat renders the highest quality lard but may be rendered along with the other fat. Cut the fat into one inch cubes after it has been skinned, although skinning is not absolutely necessary. If some of the cubes contain streaks of lean, the fat in rendering is more likely to scorch and darken. Pour a small amount of water into the rendering kettles to prevent scorching when heat is first applied. Start rendering with a slow heat and stir continually. The matter of rendering is simply a method of breaking down the fat cells and driving off moisture. Kettles should not be filled too full of lard cubes causing them to boil over. The firse hazard is great during the rendering process. Rendering lard in a large open kettle out of doors is safest. Rendering may likewise be started in the oven; however, temperatures cannot be so well controlled and the lard is more likely to scorch.

The following tests will indicate when to stop rendering:

1. When white blisters form on the cracklings and they begin to turn brown and float it is nearly time to remove from fire.
2. When white bubbles stop forming in great numbers around the cracklings.
3. When cracklings are lifted out of the lard and they fry dry.
4. When no moisture collects on a cold tin lid held over the kettle and steam has passed off.
5. The lard is too hot and has scorched when blue smoke is seen to pass from the kettle. In this case, it is over done and should be removed at once.

The cracklings should be pressed dry in a regular lard press if one is to be had, otherwise, they may be placed in a flour sack and pressed between two boards fastened together with a hinge on the same principle as a nut cracker. When rendering small amounts, the cracklings may be twisted tightly in a cloth, placed in a colander and pressed dry. The qual-

ity of the lard may be improved greatly by stirring during the time it is cooling.

After the lard has chilled, it may be tested for moisture by placing a sample of it in a hot skillet. If the heat causes it to sputter upon melting, then too much moisture is present and the lard should be reheated.

Rancid Lard.—Lard that has been stored at too high a temperature or for too long a time may become rancid having a dissagreeable odor and taste. Such lard may be improved by cooking sliced raw potatoes in it until they have browned.

MEAT CANNING

Meat may be canned successfully by means of sterilization in air-tight containers. Spoilage is due mainly to the action of bacteria but molds and yeasts may also assist. Bacteria are the most troublesome foes to combat in canning, some being able to grow without the presence of air, others are able to grow either with or without air. Only a few varieties can thrive in acids and hence it is easier to can acid fruits. Many bacteria are spore producing (spores correspond to the seeds of plants). Most bacteria are killed at a temperature below the boiling point but their spores, which later develope into bacteria, are able to withstand much higher and lower temperatures. Although the raw meat may be safely placed in cans, the resulting product under either the pressure cooker or water bath system will have a cooked flavor With either of these methods, the meat should first be roasted, fried, broiled, baked, or stewed and seasoned just as though it were being prepared for immediate serving so that the flavor can be retained. The hot gravy stock may be added thereby improving the flavor of the meat. Before serving canned meat of any kind, it is well to heat it to boiling temperatures. In order to be successful in the art of meat canning, only fresh clean meats should be used, preserved by one of the following methods.

Steam Pressure Method.—Prepare the meat as stated above and pack the pieces tightly into cans. If no salt was added, one teaspoonful per quart is sufficient. Gravy stock may be added but is not necessary. Do not add water. Adjust rubber and put lid in place. If screw top lids are used, leave loose by one-half turn. If glass tops are used, adjust wire clamp but do not tighten spring. Pour a little water into pressure cooker as per directions accompanying it and place cans in the cooker on the false bottom. Adjust cooker lid and tighten, leaving petcock open until live steam is seen to escape. After pressure rises to 15 pounds, which is about 250 degrees Fahrenheit, allow to remain for one hour. Then remove cooker from fire, but do not open petcock. Allow cooker to cool until pressure returns to zero, then open petcock and loosen the lid. The cans may then be removed one at a time and their lids tightened. Be sure to set hot cans on a wooden surface or cloth covered table. Metallic surfaces will cause too rapid radiation of heat thereby cracking many cans. This meat will keep from 4 to 5 years or even longer in perfect condition depending upon the quality of the rubber ring used.

Cold-pack Method.—In this method, the cans of meat are prepared as given under method No. 1 but are placed in a rack or set on a false

bottom in a common washboiler. The cans, with loosely turned lids, are placed in the boiler and enough water is added to reach the neck of the jar. The lid is placed on the boiler. Increase the heat until water boils and allow to remain three hours. Boiling this period of time at 212 degrees Fahrenheit accomplishes about the same results as one hour cooking at 15 pounds pressure as described in method No. 1. As the water boils away, more hot water should be added. It is not necessary to cover the cans completely. At the end of the three hour period remove one can at a time and tighten lid.

Oven Method.—Fill cans with raw meat, add 1 teaspoonful salt per quart, and place the lid omitting the rubber. Pour an inch or two of water into dripping pans, set the cans of meat into the pans and allow to roast for 3 hours at even temperatures above 212 degrees Fahrenheit. At the end of the roasting period, remove cans one at a time and put rubber which has been previously boiled, in place and tighten lid. The cans must not be allowed to cool before the rubber is adjusted as the bacteria which enter when the lid is removed are likely to spoil the meat.

Tin Can Method.—When using tin cans instead of glass it is a good policy to use the method suggested by the company who manufactured the canner. Tin cans are in many respects superior to glass and may be used with entire safety. Every method has its advantage. The results obtained depends largely upon the ability of the housewife to select proper cuts for certain methods of preparation. Thus a great variety of meats can be had as well as a variety of flavors as brought about by previously frying, roasting, or broiling.

Frying-down Method.—This method is a common practice on farms. The meat and pork sausage is fried well done, packed in earthen jars and sealed with hot lard. This method can only be used for preserving meats a short period of time. As soon as the basement temperatures reach 40 to 50 degrees Fahrenheit or above, the bacteria and molds grow and make the meat unfit for food and the fat becomes rancid. The first two methods of canning described are especially recommended while all of the first four methods have been found satisfactory.

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Brookings, South Dakota

Published and distributed under Act of Congress, May 8, 1914, by the Agricultural Extension Service of the South Dakota State College of Agriculture and Mechanic Arts, Brookings, A. E. Anderson, director, U. S. Dept. of Agriculture cooperating.