

# Department of Animal Science

Oklahoma State University

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# Home Slaughtering and Processing of Pork

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Home slaughter of pork should be done when the overnight temperature dips to about 32 degrees or lower and expected daytime temperature is not higher than 45 degrees. This guide outlines home slaughter and processing of pork. Slaughter can be done by scalding or skinning.

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### Basic Slaughtering Equipment

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- 1 . A. 6-in. curved skinning knife
2. A 6-in. boning knife and 8•in. butcher knife
3. A 10-12" steel
4. A 24-26" hand meat saw
5. One or two 4" Bell scrapers
6. Clean singletree or gambrel
- 7 \* A hog or hay hook
8. Block and tackle chain hoist (or tractor hydraulic lift)
9. Thermometer which registers up to 200F.

10. Enough pans or buckets for edible variety meat

11. Adequate supply of clean cold water

12. Rifle, 22-calibre

13. Two light-weight log chains, 6-8 feet long

Knives should always be sharp; a dull knife is dangerous. It will not cut easily as needed but will easily cut your hand. Occasionally use an oilstone to keep knives sharp and to maintain the beveled edge. Form a habit of frequently, but briefly "steeling" a knife during use to keep the cutting edge sharp.

The meat saw is for splitting the carcass in the middle of the backbone and for cutting the chilled carcass. The bell scrapers are the best hand tools for removing hair and scurf. The singletree or gambrel is for hanging the carcass. A notched stick can be used but there is danger of the carcass slipping and falling to the ground.

A scalding box or vat is convenient but a large barrel will serve the purpose.

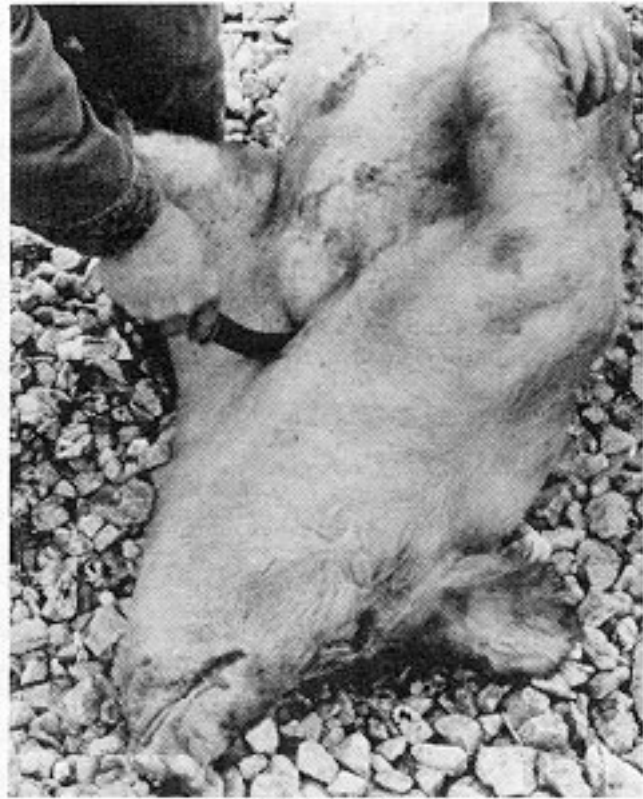
### **Selecting and Caring For the Slaughter Animal**

A young healthy pig, 200-250 pounds, is ideal. This size animal will produce the size cuts most people want. Also, this size pig will yield more than half its live weight in hams, shoulders, loins, and bacon.

Keep the animal off feed 24 hours before slaughter, but provide free access to water. Don't run or excite the pig prior to slaughter, this may cause poor bleeding and give the carcass a bloody appearance, sometimes referred to as a "fiery carcass." Bloody meat looks bad and spoils easily.

Kill the animal as humanely as possible to insure good bleeding. Stun it with a 22-caliber rifle, shooting in the middle forehead halfway between the eyes and ears. Be sure the first attempt is successful; an improper shot can cause the animal to suffer.

Stick the pig promptly after stunning, to get good bleeding. *See Figure 1.*



**Figure 1. Bleed the pig by inserting the knife blade in front of the breast bone with the cutting edge down.**

Turn the pig slightly on its back and insert the knife in front of the breastbone with the knife point toward the tail. Push the knife blade deep enough to reach the backbone, taking care to keep the knife in the center to avoid a shoulder stick. Pull the knife point slightly to the front and remove the knife. No sideway knife cuts should be made.

If the first attempt at sticking is not successful, do it again-blood should gush freely once the carotid artery is severed.

### **Scalding Method**

Prepare for scalding before killing the pig. A scalding box or vat is convenient but a large barrel will serve the purpose.

Prepare a scalding vat base by placing two railroad ties or similar timbers parallel to form a fire pit. Locate the scalding area 30 to 50 feet from any buildings to avoid changing air currents. Place the scalding vat down wind from the scraping table.

Start the fire between the timbers and allow enough burning time to form a

hot bed of coals before placing the vat on the timbers. Dry wood is the most satisfactory fuel, old fence posts and waste wood around the farm can be used.

Prepare the scraping table adjacent to the fire bed. Use heavy plywood or 2-inch material for the surface and heavy timber for the base. The surface should be the same height as the top of the scalding vat. *See Figure 2.*

When a good bed of coals has formed (about an hour's burning), place the vat on the timbers. Immediately fill the vat half full with clean water. Water should be of drinking quality.

Add wood to the fire to heat the water. Allow air space between the vat and the fire bed for the best distribution of heat along the vat. About an hour is required to heat the water to proper scalding temperature.

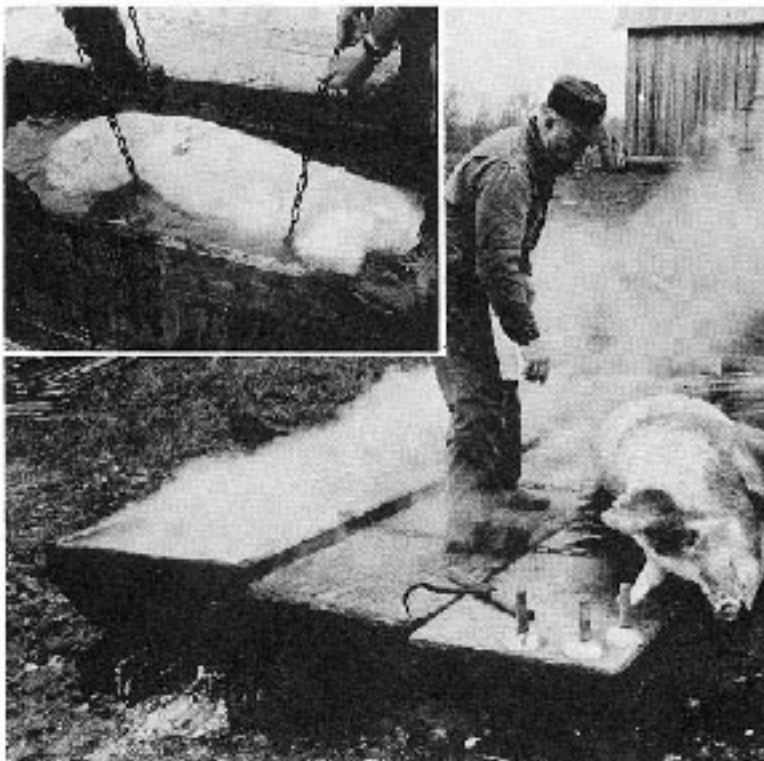


Figure 2. Homemade scalding vat, 8 feet long, 16 inches deep and 42 inches wide, is made of galvanized tin and 2-inch non-resinous wood. Tin is across both ends and runs up about 6 inches on both sides to protect the wood from burning. Scraping table is adjacent. Vat is on the down wind side of the table. Chains are used to turn carcass and lift in and out (insert).

Stir the water thoroughly and check the temperature with the thermometer by holding the bulb end about 2 inches from the bottom. A water temperature of about 150-155 degrees F. is desired. This produces a slow scald.

Water that is too hot will cook the skin and cause the hair follicles to contract around the base of the hair. This "sets" the hair; and if this happens, the only way to remove it is to shave it off. If several pigs will be scalded, add wood to the fire to maintain the desired temperature. Check the water temperature before each pig is scalded.

## Scalding

Once the animal is dead and bled it can be dragged to the scalding vat and scraping table area without bruising the skin or meat. A tractor front loader or other hydraulic lift can save much of the hand labor of moving the carcass.

Place the two chains across the scraping table towards the vat and place the carcass on the table across the chains.

Wash the blood and soil from the carcass prior to scalding; this will help get a more uniform scald.

Two or three men are required to do the scalding depending on the size of the pig. When the carcass is ready to be placed in the vat, one man should hold the two chains tight from across the vat while one or two men gently roll the carcass into the vat using the other ends of the chains. Keep the chains tight.

Keep the carcass moving during scalding. Two men can stand over the vat with both ends of a chain in their hands to do this. Check each side frequently to be sure the hair and scurf comes off easily. This should require about two to four minutes. *See Figure 2.*

To remove the carcass in reverse manner, one end of each of the chains should be held tight from across the scraping table while the carcass is rolled up out of the vat with the other ends of the chains.

## **Scraping**

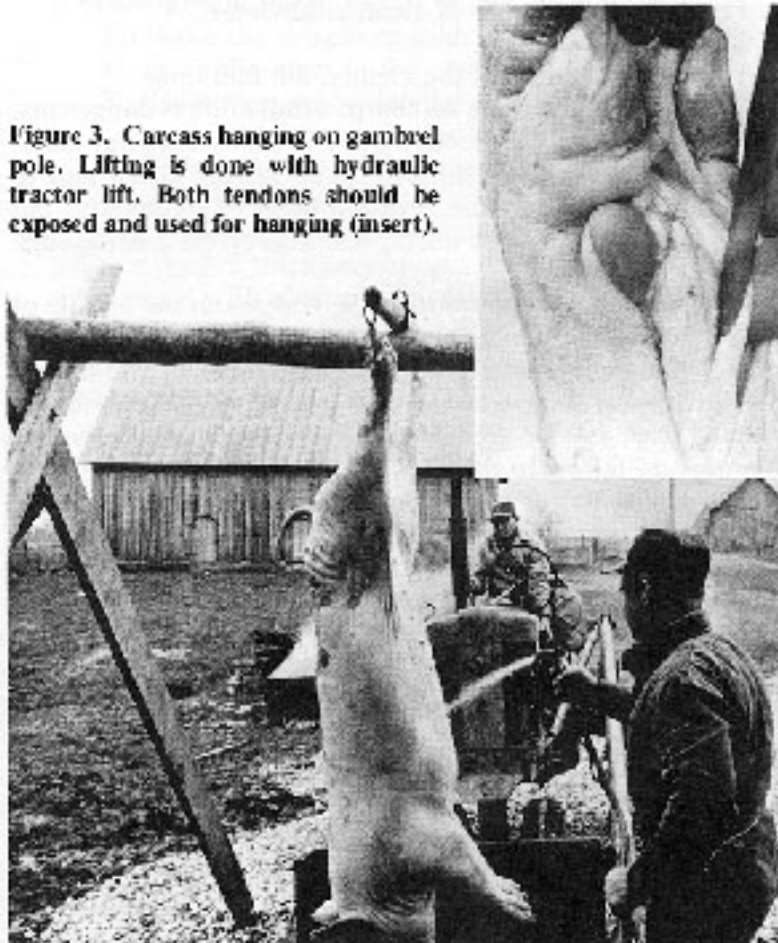
Use the bell scrapers to remove hair and scurf from the carcass. The legs, head and belly should be scraped first. Scrape against the direction in which the hair lies. Some of the long hair on the back and sides can be removed by hand.

Keep the carcass wet with warm water during the scraping procedure to help in removing the scurf. Once the skin has dried, soil and scurf are difficult to remove.

## **Hanging the Carcass**

Expose the tendons of each hind foot by opening the skin at the center of each hind leg just above the foot and directly over the tendons. Be sure to expose both tendons on each foot, because one tendon may not hold the entire carcass weight.

Hook the singletree hooks or gambrel on one foot, and using the tractor lift, move the carcass to the gambrel pole. Pass the singletree or gambrel over top and hook onto the other tendons. In the case of a small pig, heavy cord or twine may be tied under the tendon and hooked on the gambrel or singletree.



**Figure 3. Carcass hanging on gambrel pole. Lifting is done with hydraulic tractor lift. Both tendons should be exposed and used for hanging (insert).**

*See Figure 3.*

Complete the cleaning process by spraying or dashing clean water on the carcass. Beginning at the hind legs, scrape and shave all remaining hair and scurf from the entire carcass with the skinning knife. Be sure the carcass is clean before removing the internal organs.

### **Removing Internal Organs (eviscerating)**

Insert the skinning knife, cutting edge up

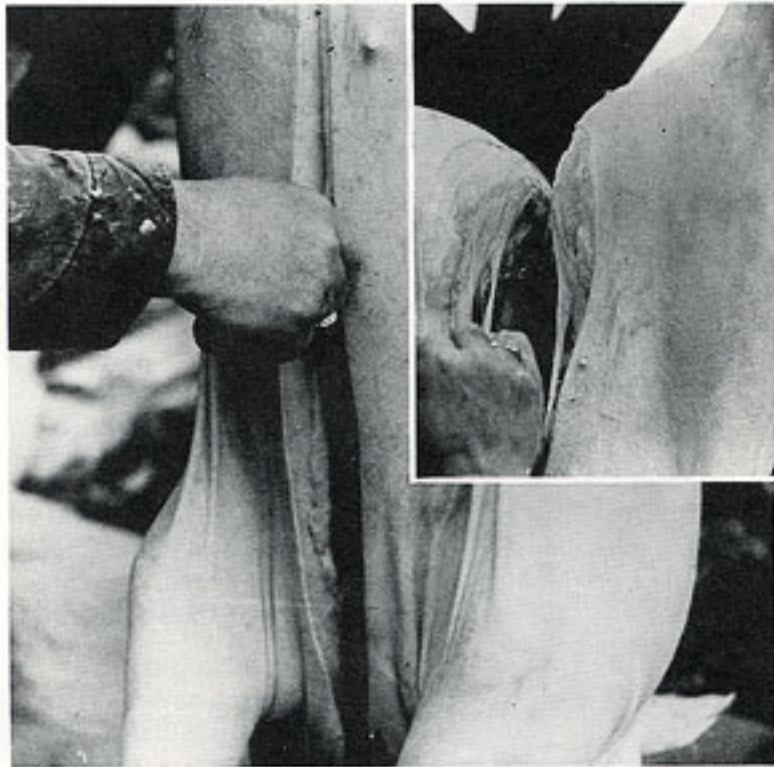
at the point where the pig was stuck. Cut up through the entire length of the breastbone. Make the cut a little to one side of where the breastbone and rib bones are joined with cartilage. Take care not to go beyond the breastbone because the stomach is close.

Cut between the hams at the natural separation. *See Figure 4.* As the hams spread apart, the white connective tissue that marks the exact middle can be seen. Cut along the tissue to the pelvic bone. The cartilage between the aitch bones will cut easily, and the hams will separate, exposing the aitch bones on each ham.

In eviscerating a barrow, loosen the pizzle, being careful not to cut the large gland which contains urine, and remove it at the upper tip of the aitch bone.

Insert the knife, handle first, in the opening made when you separated the hams, with the cutting edge and point directed down and out. Force the internal organs away from the knife edge with your hand as you cut downward to where this cut joins the split breastbone. *See Figure 5.* Allow the

**Figure 4.** Split breast bone by inserting the knife where the pig was stuck and cutting up. In splitting aitch bone (insert), cut from the top center through the connective tissue between the hams.





**Figure 5. Split the body cavity by inserting the knife, handle first, and hand into the body cavity to force the internal organs away from the knife edge. Insert illustrates proper way to hold knife.**

viscera to fall and hang by its natural attachments.

Go to the back of the carcass and cut the bung loose. There is plenty of fatty tissue around the bung, so be generous when you cut, in order not to cut the intestine. When the bung is cut loose it should be tied with cord to avoid contaminating the inside of the carcass.

Return to the opened side and remove the bung and intestines by applying light pressure while cutting the tissue that holds them in place. Free the liver by running your fingers behind it and pulling it from the back. Cut the esophagus and remove all the internal organs from the abdominal cavity. Hold onto the liver and remove it before it drops to the ground. Be sure to remove the gall bladder intact from the liver being careful not to spill bile on the liver.

Cut through the diaphragm (connective tissue separating the two body cavities) and sever the large artery along the backbone. Lift the lungs and heart out of the chest cavity and cut alternately on either side of the esophagus. Remove the heart, lungs and esophagus. Separate the heart from the lungs and rinse off excess blood. Discard the lungs with the viscera. Rinse the body cavity with clean cold water before removing the head.



To remove the head, begin cutting at the chin and follow along the jaw bone and behind the ear to the base of the skull. *See Figure 6.* Continue to the opposite side back to the chin. Separate the head from the carcass at the atlas joint (located at the base of the skull). Rinse the jowels well to remove blood before it dries.



**Figure 6.** To remove the head, begin cutting at the chin, following along the jawbone and behind the ear to the base of the skull. Then cut the opposite side in reverse order. Insert shows the exposed atlas joint where the head is separated. Note uneven shape of the bone.

### **Splitting the Carcass**

Use the saw to split the carcass down the center of the backbone. *See Figure 7.* Work from the inside, beginning between the hams. Use long free strokes; short strokes cause the saw to turn sideways resulting in an uneven split.



**Figure 7.** When splitting the carcass keep the saw handle low and begin sawing between the hams.

Leave a small portion of neck tissue to hold the halves together as a precaution to keep the halves from falling off the gambrel poll.

### **Chilling the Carcass**

Before chilling, remove the leaf fat. Leaf fat is more easily removed while the carcass is warm.

Chilling is best done with the carcass hanging. Chill it

rapidly to prevent ham souring and to retard growth of bacteria that will cause spoilage.

Chilling should be done in a well-ventilated building at about 32F. Allow it to hang over night and do the processing the following day. Chilled pork is more easily processed than warm pork.

### **Skinning Method**

Humane stunning and sticking should be done as described earlier in this Guide.

When the animal is dead and bled, move to a suitable place, preferably a concrete slab. Hoisting facilities will be needed at the skinning location.

Wash excess blood and soil from the hair. Turn the carcass on its back and hold in place with a 3-foot length of 4x4" placed, on either side.

Remove the front feet at the knee joints and cut the hind feet off about 3 inches from the hock toward the hoof. *See Figure 8.*

Open the skin down the middle of the belly from the point where the animal was stuck to the bung. Turn the knife slightly flat to avoid cutting too deeply. *See Figure 9.* Open the

skin on the backsides of the hind legs beginning at the hock and cutting to the



**Figure 8. Leave about 3 inches of bone below the hock to prevent the tendon from becoming unattached during hoisting.**



**Figure 9.** To skin the carcass, begin at the point where the animal was stuck. Turn the knife slightly flat to avoid cutting too deep, and open the skin down the middle the entire length of the carcass. Remove as much skin as possible while the carcass is on its back (insert) leaving skin attached to the outside of the forelegs.

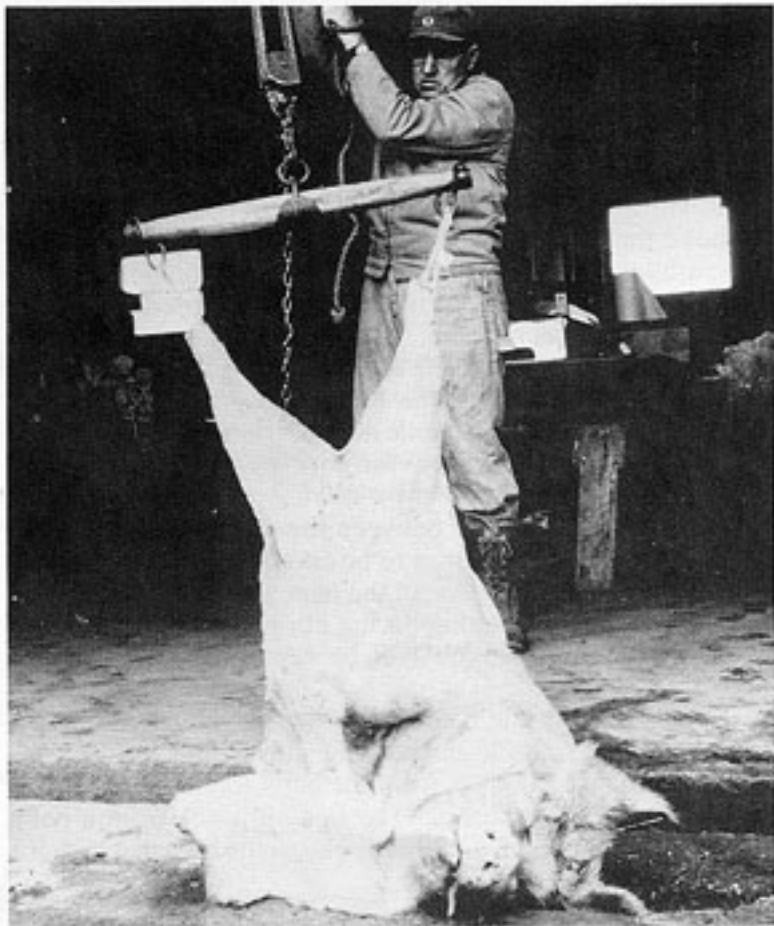
center of the carcass. Skin the hams and sides as far as possible toward the back.

Open the skin on the inside of the front legs beginning at the knee and cutting to the center of the carcass. Again, keep the knife turned slightly flat.

Remove the skin from the inside of the front legs and jowls but leave the skin attached to the outside of the legs to keep the carcass clean during hoisting.

Prepare the carcass for hanging with loops of heavy cord through the hocks. See Figure 10. Use several strands (enough to hold the total carcass) to loop through each hock for hooking to the singletree or gambrel.

Hoist the carcass to desired height and further skin the sides leaving the skin attached to the hams until the skin is completely removed from the sides and back. This procedure will help in doing a smooth job of skinning.



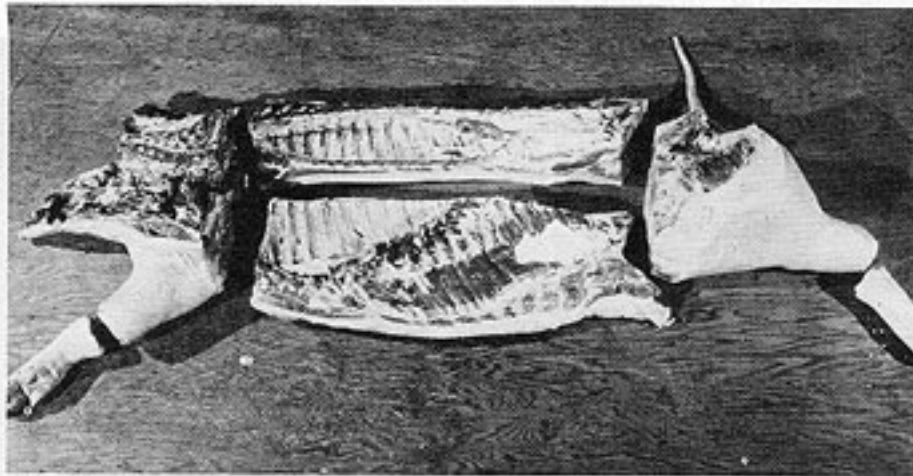
**Figure 10.** Use loops of cord to attach the tendons to the gambrel. Note skin on the outside of the forelegs is protecting the meat during hoisting.

Cut the skin from the hams and remove it from the shoulders, neck and head. The ears should be removed with the skin.

Refer to earlier discussion on eviscerating, splitting, and chilling the carcass.

### **Cutting the Carcass**

The cutting method depends on the desires and needs of the family or individual. The procedure outlined here will yield a maximum amount of meat for use as fresh or frozen pork and a minimum amount for curing.



**Figure 11. Carcass in three main portions with loin and belly separated.**

Lay half of the carcass on the cutting table, belly side nearest you and the inside up. Divide the half carcass into three main portions: shoulder, middle, and ham. *See Figure 11.*

**Shoulder.** Saw at right angle to the back between the second and third ribs until you saw through the shoulder blade bone, then finish cutting with the knife.

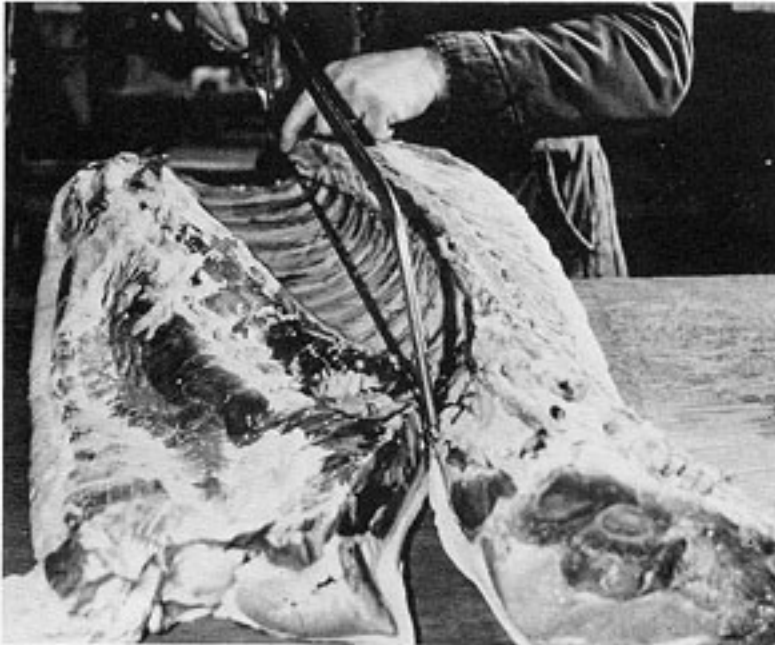
Remove the neck bones and then turn the shoulder over. Remove the jowls by cutting about 1 inch in front of the leg and parallel to the cut made to remove the shoulder from the side. This method of cutting is recommended when the shoulder will be cured.

Another method of using the shoulder is to cut off the top or Boston roast, remove the fat, and use this cut for pork steaks or roast. The arm picnic may be trimmed and cured, or it may be boned and ground for pork burger or sausage.

**Ham.** Remove the ham by sawing at right angle to the shank at a point half way between the rise in the pelvic arch and aitch bone. If the ham is to be cured country style, don't remove fat from the outside of the ham. Vat prevents the lean from drying and hardening during curing and aging.

**Middle.** This section will be separated into the loin, belly and spare ribs.

First, cut from the ham end to the last rib alongside the small tenderloin muscle and parallel with the backbone. Then pull the loin portion apart from the belly for sawing the ribs. *See Figure 12.* Saw through the ribs on a line from a point close to the backbone at the blade end to the last rib where the previous cut was made.



**Figure 12.** The loin at the ham end is turned out to cut the ribs close to the loin eye muscle.

The next step is to remove the spareribs from the belly. To remove them turn the knife edge slightly toward the ribs and make a smooth cut being careful to remove the cartilage end of the ribs without cutting into the belly.

Shape the belly by removing the nipple line and cutting it into

a rectangular shape.

**Loin.** Trim backfat from the loin to a desired thickness being careful not to cut into the lean. The loin may be cut into roasts or chops. It is recommended that all saw cuts be made from the bone side before any of the lean portion is cut with the knife. This procedure makes sawing easier.

## **Preserving Pork**

There are three methods to preserve farm•processed pork: curing, freezing, and canning. Each results in a product that has its own particular flavor.

## **Mild Curing**

Procedures outlined here are for mild cured hams and bacon. These products are perishable and must be refrigerated or frozen. For country curing procedures see UMC Guide 2526.

**Curing ingredients.** Salt is the primary curing ingredient. Sugar is added to offset some of the harshness of salt. A combination of seven pounds of meat •curing salt and three pounds of white or brown sugar is a basic mixture. Some commercial cures include spices and flavorings to give a characteristic flavor, appearance, or aroma. Considering the small amount of cure a family would use during a year, purchasing a commercial cure is advised because the ingredients are exactly weighed and completely blended.

**Curing Ham.** A successful method of curing ham on the farm is to use the dry cure and sweet pickle cure in combination. The quicker the cure gets to the center of the ham, the less the danger of loss from spoilage. To hasten the introduction of the cure to the center of the ham, pump the pickle cure around the bones.

Use a 5-inch long perforated needle attached to a plunger type syringe to force the pickle cure around the bones.

Prepare the pickle cure by dissolving two pounds of the salt•sugar combination in a gallon of cold water. Hams should be pumped with no more than 10 percent of their weight of pickle. A 20 pound ham can be pumped with two pounds of the pickle. Then rub the dry cure at the rate of 1/2 ounce to one pound of ham, and allow to cure on a table or shelf at a temperature of 34-45F. for 14 days.

**Curing Bacon.** If commercially•prepared cure is used, apply according to the manufacturer's instructions.

Stack the bellies crisscross, but no more than four layers high, and allow to cure seven days.

**Smokehouse.** A smokehouse may be constructed of three pieces of tempered masonite, some stove pipe, a 30gallon drum, and frame lumber. *See Figure 13.*

The outside dimensions are about 2 feet wide, 4 feet deep, and 8 feet tall. This will be large enough to smoke the bacons and jowls from five hogs.

Smoke from burning sawdust in the drum is vented into a lower corner of the smokehouse, then vented out the opposite corner near the top to a flue.

The drum should lay down with appropriate metal base with about 2 feet of 3- or 4-inch vent pipe to the smokehouse. Air vents should be made in the drum on the side opposite the vent pipe and about one-fourth the distance up from the bottom. Cut a hole in the top side for use in filling with sawdust.

### **Bacon Hangers.**

Bacon hangers may be constructed of non-resinous wood material about 2

inches wide, 1/2 inch thick, and 12 inches long. Space four or five No. 6 galvanized nails along the board and make a hanger from No. 9 galvanized wire, and fasten to the middle of the board.

**Smoking Process.** All cured meat should be soaked or washed with cold water before placing in the smokehouse. Force the nails through the skin side of the bacon and hang in the smokehouse, taking care they do not touch. Prepare ham hooks from No. 9 galvanized wire and hang by shank. Allow the meat to dry about 48 hours or until the surface is dry before starting the smoke.

Start the smoke generator by inserting crumpled paper into the lower vents, piling sawdust on the paper, and lighting the paper. Leave enough room for air to get in as the sawdust burns. The sawdust should smolder and give off

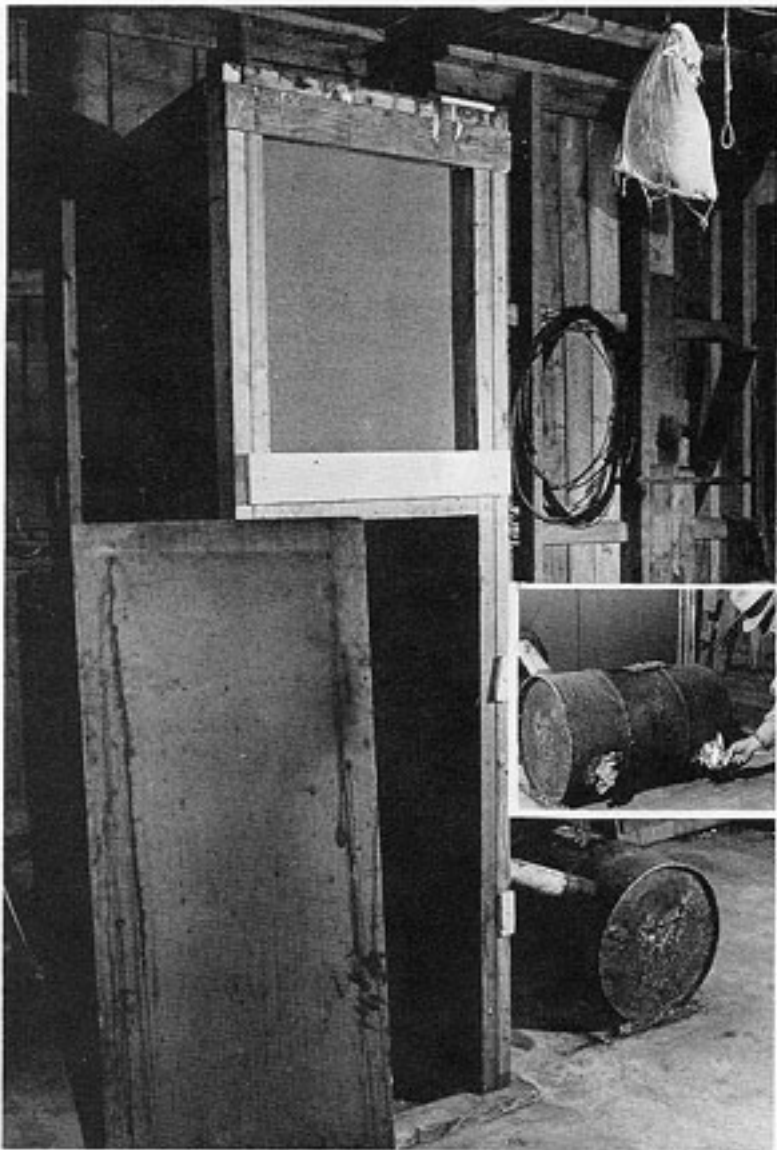


Figure 13. Homemade smoke house and smoke generator. Oak cross pieces at the very top and at the top of the opening provide support for hanging hams and bacon hangers. Insert shows smoke generator being lighted.

smoke. If it flames, dampen the sawdust a bit with water.

The smoking process should continue until the desired amber skin color is obtained. This will take about 48 hours.

**Storage of Smoked Meats.** The hams and bacons produced by these methods are perishable and should be refrigerated, canned, or eaten at the end of the smoking process.

## **Canning**

Canned pork adds variety to the family menu. Pork may be canned as fresh, cured, ground or sausage.

Good equipment and good methods are a "must" to insure safe and wholesome home canned meat. The only safe and recommended method to cook the meat is with a pressure cooker. A cooker which is malfunctioning will result in unsafe and spoiled meat. There is no safe shortcut method of canning meat. A few rules must be followed to insure a safe and wholesome product.

Use only pint and quart jars. Larger jars are difficult to thoroughly heat to the center. Cut the meat into strips or cubes. Put meat into large shallow pan; add enough water to keep from sticking. Cover pan and cook slowly until medium done. Stir occasionally so the meat heats evenly. Two and one-half pounds of boneless meat will fill a pint jar.

If desired, the meat may be seared quickly in hot fat until lightly brown. This helps develop a desirable flavor.

Pack hot meat loosely in glass jars and cover with hot meat broth or boiling water. Leave 1 inch head space. Add one teaspoon meat salt to each jar for flavor if desired. Clean any residue from the top of the jar, and adjust lids to manufacturer's specifications and process in a pressure canner at 10 pounds pressure (240F.). For pints, process 75 minutes; quarts must be processed 90 minutes.

Allow the pressure canner to cool until the pressure drops to zero. Don't pour cold water over the canner to hasten the cooling. When the pressure has dropped to zero, remove the jars and space them a few inches apart to cool. Don't place in drafts or in front of a fan.



If you should have a jar that does not seal, re-can it in another jar or use it for food at once. When re-canning, repeat the cooking process. Store the canned meat in a cool, dry place and don't allow it to freeze.

### **Packaging Meat For The Home Freezer**

Successful freezing depends on proper packaging to protect food from the dry cold air of the freezer that would rob it of moisture and flavor.

Ordinary Kraft or waxed papers are not adequate protection for foods to be frozen. Use moisture•vapor proof material, designed especially to wrap foods for freezing. These materials are strong, easy to handle, resist grease, are moisture proof, and won't transfer odors. Plastic and Kraft laminated is probably the most economical and is easier to use in most cases.

**How To Wrap.** The drugstore fold is the approved method to seal the moisture in and air out.

To make the drugstore fold:

1. Place the meat in the center of the paper
2. Bring the two horizontal ends together and fold over until tight against the meat.
3. Tightly fold one end, then the other, turn each end underneath and secure with tape.

For easier separation of chops and steaks when frozen, place a double thickness of waxed or freezer paper between each piece with plastic sides to the meat.

Before packaging, cover sharp bone edges with double thickness of freezer paper so they will not puncture the wrapping paper.

**Labeling.** Label each package clearly with a crayon or grease pencil. Include the name of the cut, the quantity and the packaging date.

### **Freezer Storage Time.**

Fresh Pork..... 4-6 Months

Ground Pork..... 4-6 Months

Cured Pork ..... 1 Months

Sausage ..... 3 Months

**Thawing Frozen Meat.** For best results, thaw in original package in the refrigerator. Allow approximately three hours per pound for small roasts and steak packages, and four to five hours for larger roasts. If thawed at room temperature allow one hour per pound.

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