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CURING MEAT ON THE FARM

The curing of meat is almost a lost art among farmers in Arizona. It is probable that the percentage of those in this State who cure their own meat is lower than in any other state in the Union. The hot climate is one common excuse given for this, but there are special methods whereby one can make good grades of cured meat here.

Home-curing operations may be expanded so that certain farmers or families may cure the meat for their district, to the convenience and advantage of the community.

Dry farmers and others situated at a considerable distance from market, who do not produce a sufficient number of animals to ship in carload lots, would also do well to cure their own meats. Mining camps and ranch headquarters scattered over the country create a ready demand for fresh spareribs, backbone, sausage and head cheese.

GENERAL PRINCIPLES OF MEAT CURING.

The essentials for securing good cured meats are, the selection of nothing but sound meat from animals which have been properly fattened and carefully killed, thorough chilling of the meat, and painstaking cleanliness and system.

*Materials used in curing meats.* Of the several ingredients used in curing meats salt is the most important. It is a requisite in all formulas, and meat can be cured with salt alone. It drives out the blood and water and hardens the meat. Saltpetre, also, is a strong astringent which extracts blood and water quickly. It also imparts a bright red color to the meat, gives it firmness and absorbs unpleasant flavors. Too much saltpetre colors the meat too highly and makes it dry and hard. The chief effect of sugar is to make the meat mellow and add a desirable flavor. Spices and smoke are used to give particular flavors rather than to preserve the meat.

Since the different ingredients have specific functions to perform in curing, the time required to cure pork should be divided into: (1) Period to eliminate all agencies, such as water, blood and uric acid, which tend to hasten decomposition or impart unpleasant flavors; (2) time required to complete the process of curing and retain as much as possible the natural properties of the meat; and (3) time needed to impart desirable artificial flavors by means of sugar, spices and smoke.

*Season of the year in which to cure meats* One should not attempt to cure meat in Arizona during the summer unless special means are available for reducing the temperature to at least 45 degrees F.

It is important that hogs be fattened in winter and made ready to kill in February as this is an excellent time to begin the curing. This means the hogs should be farrowed in July or August and fed so they will weigh 200 pounds or more when ready to kill.

#### CURING PORK.

Pork is the chief meat used for curing, owing to the large amount of fat which the carcass contains. The lean tissues are thus well protected and an undue loss of water is checked.

*Selecting animals.* Young animals are difficult to cure, owing to the large amount of lean meat and the small amount of fat. They have also a high percentage of water which interferes with curing.

Hogs that weigh 200 pounds should be selected for curing. The animals should be healthy, vigorous and properly finished for market. Be careful not to heat or exhaust them just before slaughter. They should be killed rapidly and well bled as blood furnishes an excellent medium for bacteria. It is also important that they be handled gently before they are killed, for bruised meat cannot be properly cured.

*Kind of meat.* Meat should have considerable fat on it for curing. The fat serves as a protection to the lean tissues. Young animals have little fat and the meat is watery. There are many enzymes which are located chiefly on the muscles around the bone, and these may bring about certain undesirable changes. Bony or lean pieces of meat without a good covering of fat should be used fresh or converted into sausage.

*Cutting up the carcass.* The carcass should be split down the center from rump to head\* After this is done the head may be removed by cutting about one-quarter of an inch back of the ears and severing at the atlas joint. The shoulders are generally cut off between the fourth and fifth ribs, and the hams severed about two inches in front of the pelvis. This divides the hog into head, shoulders, middle and hams. The upper part along the rib portions should be cut off and used fresh if possible. It may be divided by cutting it two or three inches down the fat side, and about one inch from the muscle in the rear. The bacon is taken from the lower part of the middle and is commonly called the side. A layer of fat may be trimmed off the side and rendered for lard. The femur should also be trimmed smoothly and no tags or ends left, the object being to expose as much lean meat as possible.

*Selecting cuts for curing.* Hams, shoulders, cheek meats and bacon (lower two-thirds of sides) are the best pieces for curing. The back,

ribs and loins contain a high per cent of lean meat not protected by fat, and as a result are hard and dry when cured. One may also trim any surface fat off the hams and shoulders before curing, as lard made from fresh fat is better than the grease obtained from the cured meat. Aim to have a layer of fat approximately one-half inch in thickness covering as much of the lean meat as possible. The legs should be removed close to the hams and shoulders in curing for home use as the pieces will pack more closely together. Where one intends to market the hams and shoulders the standard method is to cut the legs off at the knees and hocks for the sake of appearance. The sides of bacon should be trimmed square after being pounded with the flat side of the cleaver.

#### BRINE CURING OR SUGAR METHOD.

This method is recommended for our hot climate, and for beginners as the meat is more easily protected from insects and vermin, and would not be as much affected by the dry weather as when cured by the dry salt method. It must be thorough, however, for brine troubles are common in warm climates. The temperature of the brine should range from 33° to 45° Fahrenheit. Below this temperature the meat will not absorb salt and the curing process ceases, while above 45 degrees the blood and uric acid which are extracted by the brine will undergo changes.

*Containers.* Suitable containers that will hold liquids without leaking and that will not impart an undesirable flavor to the meat are necessary. Large stone jars are best but these are expensive. Good tight molasses or syrup barrels made of hard wood and thoroughly cleaned are satisfactory. The container should always be scalded carefully before using, and between changes of brine. Soft wood containers should never be used as they are porous and often impart undesirable flavors.

*Filling the containers.* All meat should be rubbed thoroughly with salt and allowed to remain on a rack or table, flesh side down, for a day in a cool place. This is done to draw out any excessive blood and water which may be in the meat. Sprinkle a little salt in the bottom of the barrel, after which place the hams and shoulders skin down towards the bottom of the barrel. Strips of bacon may be used to fill in between or to put on top. Pack them as closely as possible.

The following recipe is recommended for 100 pounds of meat.

Salt .....	8 lbs.
Brown sugar .....	2 lbs.
Saltpetre .....	2 oz.
Water .....	4 gals.

First, boil the water and when cool thoroughly dissolve the above ingredients in it. This amount of brine should cover 100 pounds of meat, but if it does not a little more water may be added. One must be careful not to allow the meat to come to the surface and be exposed. It may be necessary to weight down the meat with a heavy object. For this purpose a clean stone that has been out in the sun, and then washed, makes a splendid weight. A board, being porous, will often carry odors and should not be used.

*Care of the meat during curing.* The brine should be inspected frequently as it occasionally becomes ropy or tainted. At such times it is necessary to change the brine or else boil it and cool it before using it a second time. The meat should also be washed carefully before it is placed in a new brine. Scum and bloody brine should be skimmed off the surface as they gather. It is a good plan to stir the brine and turn the pieces at the top. During warm weather it is best to renew the brine once or twice during curing. Flies and ham beetles should also be kept away from the meat.

*Time required to cure.* It requires longer to cure meat for the warm southwest than for cooler climates. Thirty to seventy days should be sufficient. The length of time depends upon the size of the pieces, fatness of the meat, the taste of the persons intending to use the meat, and the length of time it is desired to keep it. Small pieces should remain in the brine from 30 to 40 days, while large pieces may be left much longer. Twelve pound hams may be removed after being in the brine from 30 to 40 days, 14 lb. to 16 lb. hams from 50 to 60 days, and 16 lb. to 20 lb. hams from 60 to 70 days. Bacon will cure in 30 days, but if intended to be kept through the summer it should be left in the brine for 40 days. If the meat has been in the brine a sufficient length of time it may be taken out, washed, and hung to drip for two or three days. Some favor allowing the meat to soak from three to four days in tepid water before washing because this draws out some salt from the outside of the meat, and gives a more evenly cured and flavored product. After this the meat is ready for the smoke-house.

#### PLAIN SALT CURE.

This is similar to the brine cure. Pieces should be cut smaller for this method,—about six inches square will be suitable. The recipe for 100 pounds of meat is as follows:

Salt .....	10 lbs.
Saltpetre .....	2 oz.
Water .....	4 gals.

The solution should be boiled and allowed to cool after which the brine may be poured over the meat, which is then left in the mixture until used. It is wise to weight the meat down under the brine with a heavy stone. This is a very simple way of curing, but the color of the meat is not so well preserved, and there is a tendency for too much of the water to be removed. If the brine becomes sour and ropy, it should be drawn off and boiled thoroughly or else new brine used. Care should be exercised to wash the meat before changing from one brine to another. It is considered good practice to change the brine about every month, for the meat will take up certain impurities in the brine, and become strong and rusty, and may even sour if not changed frequently.

#### DRY CURING.

Dry curing of meat should be done during cool weather. Many mixtures are available for the purpose, the following being some recipes in common use:

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| 1 | For 100 pounds of meat | 5 lbs Salt.<br>2 lbs Brown sugar.<br>2 ounces Saltpetre  |
| 2 | For 100 pounds of meat | 10 qts Salt<br>5 lbs Brown sugar<br>1 tablespoonful Red pepper.<br>1 teaspoonful Black pepper. |
| 3 | For 100 pounds of meat | 5 lbs Salt.<br>5 ounces Saltpetre<br>5 lbs dry Boracic acid                                    |
| 4 | For 100 pounds of meat | 5 lbs Salt<br>2 lbs Brown sugar.<br>2 ounces Saltpetre.<br>2 ounces Baking soda.               |

In these recipes the salt drives out the excess of moisture from the meat, saltpetre preserves the bright red color, and sugar imparts a desirable flavor. These various ingredients first should be well mixed, and after the meat has been thoroughly cooled the mixture should be rubbed over the surface of each piece of meat. Care should be exercised to rub the antiseptics well into the joints, and around the bones. After this the meat may be put away for three days, when it should be rubbed again with another portion of the mixture and left for three days. It should finally be given a last thorough rubbing, when it may be packed in a tight box or barrel, and left for ten days. To save work it is wise to have two barrels and transfer the meat from one to the other, after each rubbing. The work should be done in a dark building in order to keep away flies and insects.

After the completion of the process the meat should be carefully packed in a rat proof barrel or box. One inch of salt should be sprinkled on the bottom of the barrel and the hams placed skin down on that, with the shoulders next, and the middlings and jowls in at the corners. A liberal sprinkling of salt should cover each layer. When the salt has had sufficient time to work on the meat, ranging from 10 to 30 days, the meat should be removed, rinsed off with warm water, or dipped in boiling water for one-half minute. This will remove the salt from the surface. When cool the surfaces may be rubbed with a mixture composed of equal parts of black pepper and powdered borax, and the meat is then ready for smoking.

#### SMITHFIELD CURE FOR HAMS.

In this process the hams are placed in a large tray of salt and sprinkled with fine saltpetre until white as though covered with frost. About 1 pound of saltpetre for 240 lbs. of ham is recommended. The entire surface of the meat is covered with fine salt and the hams are packed in bulk from two to three feet high. They should be left for two days in warm weather, and for three days in ordinary weather. Then they are taken up, rubbed again with fine salt, and allowed to remain in a pile for one day for every pound of weight in the ham. After this the hams are washed in tepid water until thoroughly clean, and when partially dry the entire surface is rubbed with finely ground black pepper, which is used as a condiment and to keep away insects. The hams are then smoked slowly and gradually until the desired flavor is obtained. This smoking frequently takes from one to two weeks.

If the meat is to be kept for sometime the hams are wrapped in cloth or placed in a bag which is then covered with a preparation or paste.

#### SMOKING PORK.

Pork smoking is done to impart flavor, palatability and keeping qualities to the meat. The smoke closes up the pores to some extent, and is objectionable also to insects. The active principles are creosote, phenol, pyrogallic acid, and other acids having preservative effects. Liquid preparations have similar properties but have not been used with as much satisfaction as the smoke.

*The smoke house.* The smoke house should be constructed so as to enable one to hang the meat about seven feet from the fire. This insures that the smoke is cool before it strikes the meat. Some houses are constructed with the fire outside, and the smoke is conducted to the meat chamber through a pipe. Care should be taken to provide means to carry off the warm air, and give circulation to the smoke. The ventilation should be at the top. Smoke houses may be improvised from large dry-goods boxes, or piano boxes. A structure 4 ft square and 8 ft high is sufficiently large for an ordinary farm. For a permanent building one may select wood, concrete, stone, tile, or brick. Special provision should be made for hanging the meat below the ventilators, and sufficient space allowed so that pieces do not touch each other. It is probable that a double door would be best so that one could attend the fire by opening the lower door, and leaving smoke in the upper part of the chamber. The walls should be tight and the interior of the house kept dark to exclude flies.

*Receptacle for holding fire.* It is most convenient to have a special receptacle, such as a pan, for holding fire. This may be taken out where the air will circulate around it freely, and wood can be replenished. After the fire starts to burn again the receptacle may be returned to the smoke house. An ordinary pan, such as an ash tray from a stove, which slides into the smoke house, would be especially desirable.

*Material for furnishing smoke.* Any hard wood free from rosin or undesirable odors may be used for smoke. The most desirable woods are hickory, oak, maple, and beech. Corn cobs and mesquite wood may also be used to advantage. To make the fire smoulder, sawdust may be sprinkled over the burning material.

*Filling the smoke house.* The meat is usually placed in the smoke house as soon as taken from salt and washed. It is allowed to drip and dry for one or two days before building the smudge fire. Suitable hooks are used to hang the meat on and these are placed so that the meat will hang below the ventilator. As the center receives the most smoke, the largest pieces should be towards the middle and the small pieces at the outside. Separate the pieces so they do not touch for places that touch do not receive as much smoke as other surfaces and they present an uneven spotted appearance.

*Length of time required to smoke.* This depends upon the color and flavor desired in the meat. Large pieces require longer time than small thin pieces. It is best to smoke meat gradually by building a fire once or twice a day until the meat has the desired color and flavor. When smoke is maintained continuously, two or three days are usually

sufficient to complete the process. It will be found more convenient however, to smoke intermittently from one to four weeks, taking away the smaller pieces as soon as they are done. Meat intended to be kept through the summer should be well smoked, but it is not necessary to make it black. In very cold weather it is best to keep the meat warm by maintaining a steady fire until the smoking is completed. Smoke will not penetrate frozen meat, and on this account it is best to do the smoking in the spring or fall months.

#### STORING CURED MEATS.

When it is intended to keep meat over a long period in our climate it should be first thoroughly cured, well smoked, and dried on the surface. After smoking hang it in a cool dry place for two days and then properly wrap it in paper or cloth and pack in a suitable place. Some pack the meat in oats or corn, while others even pack in dry wood ashes. The outside of the paper or bag in which the meat is wrapped should be treated with a solution. Paste made of glue, lime and water may be used for this purpose. Some cover with muslin, and paint this with whitewash. After this has been done the package should be left in a dry dark place. Meat prepared and stored in this way should keep perfectly through the summer and insure farmers a constant supply of cheap, wholesome meat. Those who have tried curing their own meats say that there is no reason why anybody cannot become sufficiently expert to do this successfully.

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