

Home Curing of **Meats and Fish**

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Federal Cooperative Extension Service
Oregon State College
Corvallis

Extension Bulletin 731

December 1952

Cooperative Extension work in Agriculture and Home Economics, F. E. Price, director.
Oregon State College and the United States Department of Agriculture cooperating.
Printed and distributed in furtherance of Acts of Congress of May 8 and June 30, 1914.

NOTE: This bulletin is revised from and is to supersede Extension Bulletin 600,
now out of print.

Home Curing of Meats and Fish

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CURED MEATS AND FISH are preserved mainly by salt. Other ingredients are added in some curing methods to give certain qualities to the products. Most cured meat and fish is smoked to aid in preserving and to add flavor.

Two methods of curing are dry curing and brining. Brining is also called pickling. When sugar is added, the process is called dry sugar cure, or sweet pickling. Sweet pickling gives a more uniform cure but can not be done at a temperature above 40° F. The dry sugar cure can be done at a temperature 40° to 45° F. The dry cure requires slightly less time in the cure but there is very little difference in the cured meat as to keeping time and other qualities.

The method of curing beef is usually spoken of as corning.

Curing Meats

Curing agents. Salt is the main ingredient in all curing processes. The principal agents used in curing meat are the following:

► Salt. Dairy salt is preferable, because it is more soluble and has less impurities. (See Table 1.)

► Sugar. Used in nearly all brining recipes and always in sweet pickling. Either white or brown sugar is satisfactory. Brown sugar imparts its characteristic flavor to meat. Sirup, honey, or molasses can be substituted for sugar. Sugar improves the flavor of the cured meat and prevents it from becoming hard.

Table 1. FORMULA AND SCHEDULE FOR CURING MEATS

Kinds of meat	Mixture for each 100 pounds meat			Dry curing time to the pound in each piece	Brining time to the pound in each piece
	Dairy salt	Sugar	Saltpeter		
	Pounds	Pounds	Ounces	Days	Days
Hams and mutton leg.....	8	2	2	3	4
Shoulders, pork or mutton....	8	2	2	2	4
Bacon and mutton loin.....	8	2	2	2	3

► **Saltpeter.** Saltpeter gives the characteristic red color to cured meat. A small amount is generally used. It is not necessary, but if omitted meat will have an unattractive, gray color.

► **Miscellaneous:** Pepper, spices, onion.

Dry-curing pork and mutton. Meat may be cured without the use of brine as follows:

- (1) Prepare the necessary amount of salt mixture (see Table 1).
- (2) Divide the mixture into two parts.
- (3) Use one portion to rub on the meat and around the bone of the meat.
- (4) Pack pieces of meat in a barrel or pile them on a table. Place last piece with skin side up.
- (5) After 3 days rub all pieces of meat again thoroughly with one-half of the remaining salt mixture. At this time repack the meat, placing the bottom pieces on top.
- (6) After 7 more days (on the tenth day) again repack the meat, rubbing into it the remainder of the salt mixture.
- (7) Cure the meat for the required length of time (see Table 1).
- (8) Soak the cured product in fresh water 1 to 2 hours, then smoke or use without smoking if desired.

Brining or sweet-pickling pork and mutton involves the following procedure:

- (1) Brine curing should be done in a place that does not get above 40° F. and is above 32° F.
- (2) Provide an earthen jar or clean, paraffined barrel.
- (3) Prepare the necessary amount of salt mixture (see Table 1). If plain brine is desired, omit the sugar but use the other ingredients and increase the amount of salt to 10 pounds.
- (4) Save out one-fifth or one-sixth of the salt mixture.
- (5) Rub meat with the salt mixture which was saved out. Let the meat stand overnight, or pack it immediately.
- (6) One day before the brine is to be used, prepare it by dissolving the salt mixture in boiling water. Allow 5 gallons of water to each 100 pounds of meat. Let cool overnight.
- (7) Pack the meat in a jar or barrel.
- (8) Weight the meat down with a clean, hardwood board and a clean rock.
- (9) Cover the meat with the brine.
- (10) Mark on each jar or barrel the time when the pieces are to be taken out of the brine.

(11) On the third day repack the meat. Shift the bottom pieces to the top.

(12) On the tenth day, again repack the meat.

(13) Leave the meat in the brine for the required time (see schedule, Table 1, page 3).

(14) If the brine sours, remove the meat, wash thoroughly, and add new brine. New brine should contain slightly less sugar and salt than the original.

(15) When the curing time is up, remove the meat; soak from 1 to 2 hours, then smoke or use.

Smoking cured meat. The active agent in smoking meat is the creosote in smoke which preserves and gives flavor. If a mild-flavored meat is desired, cure only a small amount at a time. Bacon, the most difficult of meats to store, becomes rancid readily.

(1) Cure meat by the dry-curing or brining method. Cured meat that is not smoked will not keep much longer than fresh meat.

(2) Soak hams, legs of mutton, shoulders of pork or mutton, and mutton loin, for 2 hours in cold water. Soak bacon for 30 minutes. Scrub the product with a stiff brush. This treatment gives smoked meats a brighter color and a milder flavor.

(3) String hams, legs, and shoulders through the shank, and bacon and mutton loin through the flank. If a regular stringing needle is not available, use a narrow bladed knife to make an opening through the shank of meat and pull the string through with a loop of wire. To keep bacon or a boned piece of mutton loin square while hanging in the smoke, run a wooden or wire skewer through the flank end of the strip and insert a string just below it.

(4) Hang cured, washed meat in smokehouse overnight to drain and dry. Be sure that no two pieces touch.

(5) The next day, as soon as the meat has stopped dripping, start the fire. If the meat is still dripping when the smoking begins the lower pieces will be streaked. Use any nonresinous wood. Hardwood sawdust or corncobs make good starters. Resinous woods such as fir or pine discolor the meat, making it black.

(6) Bring the smokehouse temperature to between 100° and 120° F. A heavy fog of smoke is not necessary.

(7) Open ventilators, especially at first, to permit the moisture to escape.

(8) Continue the smoking until the meat has the desired color. Meat should be a rich amber color if smoked for 2 or 3 days.

Smoked salt can be used satisfactorily for small amounts of meat. If smoked salt is used, the meat is not so deep a color as meat

smoked in the usual manner, but the flavor is similar. Meat so cured may not keep as long as meat smoked by the usual method because it has more water in it. Follow directions that accompany smoked salt.

Wrapping and storing smoked meat. After meat is smoked it should be wrapped and stored as follows:

- (1) Cool smoked meat.
- (2) If desired, rub on the meat, to add flavor, ground black pepper, with or without a little red pepper.
- (3) Cover the meat with paper and put in muslin bag.
- (4) Fold down the top of the bag and tie it securely. In the outside tying, make a loop from which to hang the meat.
- (5) Hang in a dry, dark, cool place.
- (6) Rubbing the meat with dry baking soda may help to prevent molding.
- (7) Smoked meat keeps well in frozen food locker for 3 to 4 months. It should be wrapped in waxed locker paper. Cured and smoked meat will keep 5 or 6 months in a dry climate (eastern Oregon), if the meat is stored in a cold, dark place.

Constructing a smokehouse. If a large amount of meat or fish is to be smoked, a smokehouse is desirable. A common size is 6 by 8 feet square and 8 to 10 feet high (to the eaves). This height permits the meat or fish to hang 8 or 10 feet above the fire. Provide the smokehouse with plenty of ventilation so that the products will not get too hot. Build the fire on the floor of the smokehouse. (See Farmers' Bulletin 1186 for further details.)

A small, inexpensive smokehouse may be made on the side of a hill from a barrel to which smoke is conducted by a tunnel or stovepipe from a fire below. Both ends of the barrel are removed, and a wire shelf is inserted near the top, which is covered with burlap.

Corning Beef

Use the cheaper cuts of meat, such as the plate, rump, and chuck, in making corned beef. Meat from fat animals makes better corned beef than meat from thin animals. It is desirable to corn at one time only such an amount as can be used within a month or 6 weeks.

(1) Cut the beef into pieces 5 or 6 inches square. Cut pieces uniform in thickness so that they may be packed in even layers in the barrel.

(2) Cool meat thoroughly, then proceed with corning as soon as possible. Meat that has begun to spoil is unwholesome and will probably sour during the corning process. Do not cure meat that is frozen.

(3) Weigh the meat, and for each 100 pounds allow 8 pounds of salt.

(4) Sprinkle a layer of salt $\frac{1}{4}$ inch in depth over the bottom of a clean stone jar or wooden barrel.

(5) Pack the cuts of meat as closely as possible, making a layer 5 or 6 inches thick.

(6) Add alternate layers of salt and meat, being careful to cover the top layer of meat with considerable salt.

(7) Allow the salted meat to stand overnight.

(8) Make a brine as follows: For each 100 pounds of meat use

4 pounds sugar	1 gallon lukewarm water
2 ounces baking soda	3 gallons cold water
4 ounces saltpeter	

Dissolve sugar, soda, and saltpeter in lukewarm water. Add the cold water and cool.

(9) Pour brine over meat, after the meat has stood overnight.

(10) Keep the meat entirely under the brine by using a loose, board cover with a weight on it. If any of the meat is not covered with brine, both the brine and the meat will spoil in a short time.

(11) Keep brine in a cool place, as the sugar in the brine has a tendency to ferment.

(12) Keep the meat in brine from 28 to 40 days, to effect a good cure.

(13) Watch the brine closely for spoilage. Meat cured during the winter that must be kept into the summer season is more likely to spoil during the spring than at any other season. If the brine appears to be ropy, the pieces of meat should be removed, washed vigorously with a stiff brush and warm water, then repacked as directed above, using only 6 pounds of salt for each 100 pounds of meat, and covered with new brine.

Curing Salmon

Mild-cured salmon

Use only fresh fish or those that have been caught recently and held under ideal conditions, as stale fish or that which has been handled carelessly will not produce a satisfactory finished product. Freshness is paramount. Bruised, or broken, or otherwise damaged flesh should be avoided.

(1) Butcher by removing head, fins, tail, and viscera. The kidney or dark red mass along backbone should be removed. Wash body cavity with ample running cold water, removing as much blood as possible.

(2) Split fish lengthwise along backbone, removing the backbone to produce two fillets or boneless sides. Wipe dry if necessary.

(3) Turn fillets over and score the skin (cutting $\frac{1}{2}$ inch or less deep) across the lateral line every 3 to 4 inches to allow good salt penetration. Do not cut into red flesh in the scoring.

(4) Cut fillets crosswise into pieces which will serve your family needs, 4 to 6 inch widths, or as desired.

(5) Chill and firm the flesh for 1 to 2 hours by immersing all pieces in a cold (35° to 40° F.) brine made by dissolving 24 ounces salt per gallon of water. This operation will prevent the salmon oil from being lost and will help to remove remaining blood. Drain well.

(6) Using a semi-coarse, dairy, or "mild-cure" salt, cover the bottom of the crock or keg with a $\frac{1}{4}$ -inch layer. Gently salt all surfaces of the pieces of fish. Closely pack alternate layers of fish at right angles. Sprinkle more salt between layers. Top layer of fish should be placed skin up and rather heavily salted.

(7) Cover crock or keg and store in a cool place for 3 days.

(8) Remove pieces of fish and wash off salt with cold running water. Drain well.

(9) Remove all brine, liquor, and salt from keg or crock, rinsing and drying well. Repack pieces of salmon closely as before with a small amount of salt being sprinkled over the fish as it is packed. With top layer of fish skin-side up, cover with a saturated salt solution or brine (salt added to water until the crystals will no longer dissolve). Weight the fish down with a board or rock and be sure that no part of any piece of fish is exposed to the air, as browning and off-flavor will develop.

(10) Repeat step nine (9) after one week of storage, preparing a new saturated salt solution for again covering the weighted-down pieces of fish.

(11) This fish as prepared is now ready for storage and for use. If evaporation occurs, more saturated brine can be made as above to keep flesh covered with brine. Store in as cool a place as possible—32° to 34° F. preferred. Freshen in one or two changes of cold water prior to use. Fish so cured and stored may be kept for 3 to 5 or 6 months, depending on its being covered with brine at all times and kept sufficiently cold.

Light-smoked or kippered salmon

- (1) Dress and clean fish well.
- (2) Fillet as above.
- (3) Cutting the fillets into 2- to 4-inch pieces is advantageous at this stage for later storage purposes and salt penetration.
- (4) Allow pieces of fish to stand in a brine (10½ ounces of salt per gallon of water) overnight, or 16 to 18 hours in a cool place.
- (5) Rinse well in fresh cold water for 5 to 10 minutes.
- (6) Place pieces on wire cloth trays, skin down, leaving space between pieces. Allow moisture to drain and flesh surface to dry. Place trays in smoking chamber.
- (7) Smoke with dry nonresinous wood (i.e. alder, maple, oak), for 6 to 10 hours at 70° to 80° F. (3 to 5 hours only for canning). Never use more heat than 80° F.
- (8) Raise heat by building up fire to 165° to 170° F. for 45 to 50 minutes to cook fish and obtain appetizing brown color. Never raise temperature to more than 175° F.
- (9) Open doors to smoking room to release heat and remove trays to cool fish, or otherwise remove fish from heat.
- (10) Kippered fish thus prepared must be kept under refrigeration or canned. If kept under ordinary refrigeration it will store for a period of 3 to 5 weeks. If it is to be frozen, wrap well to exclude air and to prevent drying. In canning kippered fish, follow this procedure: Cut into pieces suitable to the containers being used; pack closely, leaving usual headspace at top of jar; apply lids or covers; process as follows. If no bone is included, process ½-pint jar 70 minutes and 1-pint jar 80 minutes at 240° F. If bone is present, process both jar sizes 100 minutes at 240° F.

Salting of Sablefish (black cod)

- (1) Remove head and eviscerate.
- (2) Split fish along back just above backbone.
- (3) After splitting fish, the backbone is cut out.
- (4) Cut fillets or sides into pieces suitable to your needs.

(5) These pieces or chunks are rinsed in cold running water and put in tub of cold, weak brine (made in proportion of 1 pound salt to 2.5 gallons water). Soak for 30 minutes.

(6) Wash well and allow to drain thoroughly.*

(7) Pack fish in keg or crock with salt. Fish and salt are packed in alternate layers, the amount of salt equaling $\frac{1}{3}$ the weight of fish. Place top layer skin up. Cover.

(8) Store in cool place (if available, cold room preferred) for 2 to 3 weeks.

(9) It should be washed clean to remove any salt crystals, and repacked in kegs or crocks which are then filled with a saturated brine (salt added to water until crystals will no longer dissolve). The fish is then ready for storage in a cool place, or use. Keep fish covered with the saturated brine at all times during storage. Freshen in cold water prior to use. Sablefish salted or cured in this manner will store well for a year. It must, of course, be covered with saturated brine and kept in a cool place at all times.

Salted smelt

Male fish are preferred as the soft-fleshed females must have the roe removed, which tends to produce broken fish. Fish may or may not be eviscerated as desired.

(1) The fish should be washed in cold water or a weak brine (2 to 3 ounces salt per gallon water) to remove slime and debris. Cold (iced) water or brine will wash and firm fish—but rough handling is to be avoided.

(2) Drain well to get rid of excess moisture. In crocks or kegs pack with care alternate layers of fish and salt with fish layers at right angles, using salt at the rate of $\frac{1}{3}$ to $\frac{1}{2}$ pound salt per pound of fish. When this packing is completed, fill container with saturated salt solution (salt added to water until crystals will no longer dissolve).

(3) Cover and store in cool place 4 to 6 hours. Stir gently with wooden implement to insure equal distribution of salt. Store in cool place, adding more brine if necessary, for 2 days.

(4) Remove fish, wash, and repack just as in step 2. Weight fish to keep them covered with brine. Store in cool place. Freshen prior to use. These fish may be stored 3 to 6 or even 8 months depending upon the care used in salting, complete coverage by saturated brine at all times, and temperature of holding. (The lower the temperature, 32° to 40° F., the better the fish will keep.)

* After step 6, it may be kippered as in light-smoked or kippered salmon, steps 6 to 10 above.