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Abstract
Beef does not constitute as large a proportion of the meat consumed on the farm as it should. This is due partly to the fact that many farmers do not know how to kill and cut beef to the best advantage. Since fresh meat is quite perishable, heavy and discouraging losses are often sustained thru improper handling. Yet there is nothing difficult about the proper method of handling meat, altho there are a few details which must be strictly attended to.

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Dressing and Cutting Beef on the Farm

AGRICULTURAL EXPERIMENT STATION
IOWA STATE COLLEGE OF AGRICULTURE
AND MECHANIC ARTS

C. F. Curtiss, Director

ANIMAL HUSBANDRY SECTION

AMES, - - IOWA
Fig. 1.—Beef calf and dairy calf, each one week old. Showing advantage of beef breeding and type. Note the marked difference in fleshing.
DRESSING AND CUTTING BEEF ON THE FARM

BY M. D. HELSER

Beef does not constitute as large a proportion of the meat consumed on the farm as it should. This is due partly to the fact that many farmers do not know how to kill and cut beef to the best advantage. Since fresh meat is quite perishable, heavy and discouraging losses are often sustained thru improper handling. Yet there is nothing difficult about the proper method of handling meat, altho there are a few details which must be strictly attended to.

The instructions for dressing and cutting beef offered in this circular have been thoroly tried out and found to be successful, but they can often be varied to good advantage under differing conditions.

SELECTION OF THE BEEF FOR KILLING

HEALTH

Always be sure that a healthy animal is chosen, whether it is an old, thin cow or a prime baby beef. The animal should be observed for a few days before killing to see whether or not it acts and looks like a healthy animal. Never take chances with a diseased animal.

Tuberculosis is the disease most commonly met with in beef cattle. A generalized case can easily be diagnosed by any farmer. Examine the liver, lungs and spleen (the dog tongue shaped organ lying near the paunch) for little pockets of yellow pus or granular material. They indicate a tubercular condition. Little pockets of pus quite often hang from the inside of the rib, also. A carcass of this kind should be cooked until the meat falls from the bones, before being fed to hogs or chickens.

Injured animals should be bled at once and can be used the same as any other animal. They should not be allowed to suffer, as this raises the body temperature and may cause the meat to spoil.

CONDITION

The animal should not be very thin nor very fat. The condition of the beef may vary a great deal and yet produce good meat. However, very thin animals will not produce tender, juicy, well flavored meat. In older animals, the muscular portion of the carcass is generally tougher when in a thin condition than when fat. A good growthy steer or heifer, fattened rapidly to a medium condition weighing about 800 pounds, makes a handy size and should furnish an excellent grade of meat.

A medium layer of fat on the outside is essential, if the beef is to be kept any length of time without curing. This outside layer becomes firm thru cooling and loss of moisture and thus protects the fleshy portion (lean meat or muscle) from spoiling or moulding.

AGE

A beef animal may be killed at any age after 21 days. The best grade of veal should be about eight weeks old; anything younger than this would be a little too watery, and lacking in flavor. Usually the best beef may be obtained from an animal 18 to 30 months old.

BREEDING AND TYPE

Well bred animals of the strictly beef type will dress out a higher percent of edible meat than will the scrub. The beef-bred animal will also have a better colored and better flavored meat, with a more uni-

*Acknowledgment is made to C. W. McDonald for valuable suggestions for the photograph of the killing operation.
form mixture of fat and lean. (See fig. 1.) The development of muscle is plainly seen in the beef-type calf. While fat can be put on by feeding, the muscular development must be inherited.

QUALITY

The smooth, uniformly covered steer, free from patches and bunches of fat, will yield a very desirable carcass and cut out with very little waste. Always avoid the heavy-hided, coarse-boned steers.

MANAGEMENT OF ANIMAL BEFORE SLAUGHTERING

Nothing but pure water should be given to the beef animal selected for at least 24 hours before slaughtering. It is very difficult to bleed thoroughly an animal just off of full feed. Tissues from which the blood has not been thoroughly drained will spoil much more quickly than otherwise. Keep the animal as near normal temperature as possible. Excitement of any kind will raise the temperature above normal and if it goes high enough it will cause the meat to turn very dark in color and sour in a few hours’ time. Animals dying from an overheated condition are never fit for food, as the meat spoils immediately.

Bruises of any kind will cause the blood to settle in the affected part and spoil the keeping qualities of the particular cut bruised.

KILLING AND DRESSING

TOOLS FOR KILLING AND CUTTING CATTLE

A killing axe, hammer or gun.
A six-inch skinning knife.

Fig. 2.—Ready to be killed.
Fig. 3.—Sticking the beef.

An eight-inch butcher knife.
Either a scaffold for hanging or a block and tackle for hanging to a tree.
Doubletree or neck yoke can be used to spread and hang the beef.
Tub of cold water and some clean cloths for washing carcass.
A stick about 30 inches long, sharpened at both ends, or a couple of chunks of wood or stone to hold beef on its back.
A 28-inch meat saw.
A 12-inch steel is handy, but not absolutely necessary.
Be sure that all tools are ready before killing.

KILLING

If the butchering is done in warm weather, select as cool a day as possible and kill in the evening, thus allowing the carcass to cool during the night. It is also necessary to select a good place to kill. If the animal is tame, a noose can be slipped around the neck and nose and the animal drawn down to the base of a tree, fence post, or corner of the barn, or any other solid fixture, and then stunned with an axe or sledge. Be sure the tree, post or other fixture is absolutely solid before attempting to draw an animal down. (See fig. 2.) A tree whose limbs are low enough to fasten a block to for hoisting the beef is best.

In case the animal is too wild to touch with a rope, use a rifle. In this case it is not always possible to get it just where you want it. Sometimes if a number of cattle are together and are accustomed to being salted out in the pasture, and the feeder sprinkles a little salt near the selected tree, the cattle will come up and then it is possible to shoot the one you want to kill.

The animal should be struck with bullet or hammer in just about the center of the forehead. Draw an imaginary line from the lower
side of the base of each horn to the opposite eye and strike where these lines cross.

**STICKING**

After the animal has been stunned and is down, stand in front with your back toward the animal, placing one foot next to the head and the other just in front of the front feet, and then push the head back as far as possible. (See fig. 3.) A skinning knife can be used to open the neck toward the head. Then insert the knife with the back of the blade against the breast bone, cut straight in about four inches deep, with the point toward the backbone and passing on either side of the windpipe. This will sever the carotid arteries just where they fork near the point of the breast bone and will also cut the jugular veins, which pass near. Be careful not to cut back too far and puncture the chest cavity, as this will allow the blood to flow back and a bloody carcass will result.

**SKINNING**

Begin skinning at the head. Open the hide at the poll and cut straight down one side of the face to the nostril. Peel the hide back off of the face and forehead and from the side of the face which is turned up. Loosen the hide back a few inches from the poll. Now turn head up on poll, with the muzzle standing up, and skin out the other cheek. Now press the muzzle down toward the ground and split the skin from the mouth to the cut made in sticking. Loosen skin on both sides and, when head is skinned out, remove it by cutting just back of the jaw bones from the under side of the neck and remove the head at the first or atlas joint. This is very simple.

It is well to remove the tongue at this time by loosening it just inside of the jaw bones, from base to tip; pull up on tip end and pull
the tongue out backward. (See fig. 4.) Wash and scrape the tongue clean and hang up by either end.

The brain can also be removed at this time by sawing or chopping in at the side between the eye and horn and then peeling the poll back until the brain can be lifted out readily.

The beef cheeks should also be trimmed off and used for either stew or hamburger.

Fig. 6.—Shank dropped at straight joint.
Fig. 7.—Siding beef with long easy downward strokes.

Fig. 8.—Opening the abdominal cavity.
The next step is to roll the animal on its back and brace it there by means of a chunk on the side or by means of the stick or prop mentioned above.

Dropping the Shank.

Drop the front shank by cutting off sinews just where the hair joins the back of the hoof; this will straighten the leg. Now whittle off the two dew claws and open the hide on the back of the shank from the hoof to a little above the knee. (See fig. 5.) Loosen the hide a little down on either side of the shank and then cut the shank off at the lower or straight joint, which is just where the knee begins to enlarge, and pull the shank out backwards. The rough joint or horse joint is very close above the straight joint; if removed here it makes a bad appearance. Drop both fore shanks in this way, then drop hind shanks the same way. (See fig. 6.) Be very careful to remove hind shanks at the lower joint, or you may have trouble in hanging the carcass.

When splitting the skin over the hock, pass the knife down over the round to the mid-line about six inches back of the cod or udder. Hold the knife flat, with the point and edge turned up slightly to avoid cutting the flesh. Drop the other hind shank in the same manner.

Skinning the Sides.

Now open the skin on the mid-line, from the cut made in sticking to the tail. Skin down the sides by starting the knife at the brisket on one side and the flank on the other, using a long, easy, downward swing of the knife. (See fig. 7.) Do not try to pull the hide away from the meat, but hold it as tight up to the meat as possible. Do not hold the knife too stiff. Keep the edge of the knife cutting toward the hide. There is a thin, white membrane, known as the fell, between the hide and the meat. This should be left on the meat as a protection.

The hide should be loosened over the buttocks and inside of the thigh, leaving the hide on the round, shank and neck to protect the carcass while being hoisted.

Open Abdominal Cavity.

The brisket and abdominal cavity should be opened on the mid-line, holding the handle of the knife on the inside to protect the intestines. (See fig. 8.) The muscle should be left intact for a few inches just in front of the navel, to hold the paunch and intestines in until you are ready to drop them.

Saw thru the breast bone and loosen the gullet and windpipe. (See fig. 9.) Cut thru the muscle in the center of the pelvic region between the hind legs. Pull some of the intestines up on the side of the carcass and saw thru the pelvic or aitch bone. (See fig. 10.)

At this time it is well to remove the sheet of fat, caul fat, around the paunch. (See fig. 11.) Wash all bloody or soiled spots off.

Skinning the Rump.

Insert spreader or beef tree in hocks and the carcass is ready to hoist high enough to work handily at the rump. (See fig. 12.) Skin out the buttocks as shown in fig. 13. The hide can then be pulled from the hock down almost to the flank. This should be done very carefully so that the fell will not be torn.
Fig. 9.—Sawing thru breast bone.

Fig. 10.—Holding intestines out and sawing thru aitch bone.

Fig. 11.—Removing sheet of caul fat from around the paunch.
Skin out the tail by loosening hide on under side, open hide to point of tail bone, drop hide around base of tail, unjoint and grasp butt end with dry cloth and pull it out. If you desire to leave the tail attached, loosen hide in the same way, but do not unjoint the tail bone. Pull down on the hide and you will pull it off of the tail. Drop hide about half way down the back. Loosen rectum and drop as far as kidneys. (See fig. 14.)

Spread the hind legs and split center of backbone down to the loin. Great care must be taken to keep the saw in the center. The saw guides much more easily if you stand behind the carcass, but you can see much better if you stand in front. A satisfactory job can be done standing on either side. (See fig. 15.)

Wash hocks and rounds clean and dry thoroughly. Holst carcass high enough to allow paunch to be taken out. When removing heart and lungs, be careful to leave all of the lean part of membrane, separating paunch from chest cavity, attached to the ribs. All of the hanging tenderloin which holds this muscle should be left, also.

Remove hide from fore shanks and neck, finish splitting carcass, wash thoroly and pump the shoulder by raising and lowering the fore
Fig. 13.—Rumping the beef.

Fig. 14.—Dropping the rectum.

Fig. 15.—Splitting the beef carcass.
shank, thus draining the blood from the shoulder. Trim off any ragged edges and hoist carcass out of the way of dogs and allow to hang all night, if possible. (See fig. 16.) If this is done you must get it down the next morning by daylight, so that the flies will not have a chance at it.

**CARE OF OFFAL**

*Hide.* If you expect to hold the hide for a few days, it is best to salt it by spreading it out hair side down and covering the skin side evenly with a heavy layer of salt. Fold the legs and head end in until the hide forms a strip from one and one-half to two feet wide. Start at the head and roll tightly. Use a strong, heavy twine and tie securely.

*Gall Bladder and Liver.* The gall bladder should be removed from the liver as soon as possible after the liver is taken out. This can be done very easily by cutting the bile duct about three inches in front of the bladder and usually you can pull up on this and the bladder will peel out of the liver. It may be necessary to assist slightly with a knife. In case some of the gall gets on the liver, wash it off at once with cold water. Clean all blood out of the heart and wash thoroly.

*Intestinal Fat.* All of the intestinal fat should now be stripped off and saved. This can be done by pulling out the small intestine with one hand and cutting off the fat with the other. Sometimes in young animals the fat can be pulled off with the hand. All internal fat should be washed thoroly and placed in a bucket of cold water to chill before trying out. This fat can be used for making soap.

*Tripe.* In case you want to use the tripe, proceed as follows: Open paunch and clean out all contents. Wash it thoroly in four or five waters. Then scrape the thin membrane off, both inside and out. This can be done very well with a bell-shaped hog scraper. Soak the tripe in a weak solution of lime water about six hours, when it is ready to be cooked. Be sure the cooking vessel is clean, or the tripe will not come out a nice, white color. Do not cook fast; bring the water to a boil and then allow it to simmer until tender. If it is boiled any length of time it will toughen rather than get tender. As a rule, it is best to pickle it in strong vinegar. Pickled tripe is always on sale in the markets of our larger cities.

![Fig. 16.—Ready to cool out.](image-url)
CUTTING THE BEEF CARCASS

Always cut across the grain of the meat, if possible. The following method has been found to be the most satisfactory for the beef weighing from 700 to 900 pounds, but can and should be varied under certain conditions.

QUARTERING

Face bone side of carcass. Count ribs, starting at brisket (see fig. 17); stick knife thru carcass between fifth and sixth ribs. This will

Fig. 17.—Location of cuts of beef. (A) Round. (B) Rump. (C) Loin end. (D) Short loin. (E) Flank. (F) Prime rib. (G) Navel. (H) Brisket. (I) Chuck rib roast. (J) Round bone pot roast. (K) Chuck roast. (L) Neck. (M) Shank.
mark the place where the chuck should come off when fore quarter is lying bone side down. Stick knife thru carcass again between the twelfth and thirteenth rib, marking the place where the side is divided into quarters. Count down seven and one-half vertebrae, beginning just where the backbone or sacrum starts to rise or slant toward the tail. (See no. 18 in fig. 17). Mark this point at 1.

Stand on the outside of the carcass and insert knife in mark between twelfth and thirteenth rib and cut downward toward your mark made along the back, 3 to 1. Then cut toward the flank, 3 to 2, cutting all but six inches of the flank. Saw off backbone and let fore quarter swing on the flank.

This fore quarter can be carried rather easily by placing your shoulder just back of fore shank against the brisket. Step forward as the flank is cut, and this will rest the quarter squarely on top of shoulder.

FORE QUARTER

Lay quarter on bench or table, bone side down. Stand at neck end, facing quarter. Make cut from 3 to 4 and from 4 to 5.

Shank. Saw shank bone off on line 4 to 5 and cut shank loose from brisket. A small pot roast or a shoulder round steak or two may be cut from shank. (See fig. 20.) The shank is then cut into three or four pieces for soup, or it may be boned out for hamburger.

Fig. 18.—Showing cuts on forequarter. Letters and figures correspond to those in Fig. 17.

Fig. 19.—Plate of beef. (G) Navel end. (H) Brisket.
Fig. 20.—Fore shank of beef.

Plate. The plate consists of the navel (G) and brisket (H), being separated on line 4 to 7.

Navel. (G). (See fig. 19.) This cut can be cut across the rib and used for boiling or corning.

Brisket. (H). Cut across rib and use for corning or boiling fresh.

Prime Ribs. (F). Cut on line 4 to 6. This will give a seven-rib roast. The loin end of the rib will be a little more tender and a little more economical than the chuck or shoulder end. (See fig. 21.) This roast can be cut into any size pieces desired. A two-rib roast makes

Fig. 21.—Prime ribs. Showing standing rib roast and folded rib roast.
Fig. 22.—Showing method of cutting chuck. (I) Chuck rib roast. (J) Round bone pot roast or cross rib roast. (K) Chuck roast. (L) Neck.
a handy size. These roasts can be used as standing rib roasts by sawing out the backbone, or a little piece of the rib can be sawed out of the middle and the end folded over the eye of the meat or where the backbone came out; the latter is called a folded roast. A rolled roast can also be prepared by removing all of the bones and rolling the roast. The roast will usually have a little better flavor if roasted with the bone in.

**Chuck or Shoulder.** (I, J, K, L). Two ribs should be cut from the rib end, 8 to 9, making a chuck rib roast (I). (See fig. 22.) This makes a very good roast. It is often used as a pot roast or for boiling meat. The next cut, 10 to 11, will give the round bone pot roast or the cross rib roast (J). This cut will show the same surface as in fig. 19, and can be used for pot roast or boiling, or may be cut into shoulder round steaks from the surface where the shank was taken off. Another nice chuck roast may be cut 12 to 13 (K). This makes an excellent pot roast or boiling piece. The neck (L) makes good mince meat or a good boiling piece, and should be cut across the grain or fiber of the meat. This also contains the shoulder joint, which makes a good soup knuckle.

**HIND QUARTER**

Lay hind quarter on meat side (see fig. 23), and cut flank off on line 14 to 3. This will make rather short steaks.

**Flank.** E contains the flank steak (see fig. 24). The remainder of the lean can be used for hamburger, or rolled for a boiling piece.

**Kidney Knob.** This cut should be taken out next, leaving enough fat on the under side of the backbone to cover the tenderloin muscle. Next separate the loin and round at 14 to 15. This seems to be about the most difficult cut for most people. A great many open the hind quarter from the meat side, that is, with the bone side down. The following directions will take away all of the guesswork in opening a hind quarter:

Lay hind quarter meat side down. Begin at 18, where the backbone starts to rise toward the tail, and count four bones from point 18 to point 15, thus leaving four bones on the loin, C. Cut from this point, 15, on a line about one inch in front of the hock bone, 17 to 14. Be sure the hock bone has been split in the center. Your cut should look like the one in fig. 24, 15 to 14.

**Loin.** C and D make up the loin. The short loin, D, can be cut into steaks, club steaks coming from the rib end, or from line 1 to 3 (see fig. 25), and porterhouse steaks are cut from the other end, or line 18 to 19 (see fig. 26). The porterhouse steaks extend as far forward as the tenderloin or "filet" of beef. From this point to the club steak, the steaks are spoken of as "T" bone. Any of the steaks from the hip bone to the rib can rightfully be called "T" bone, because they all contain this "T" shaped bone.

The loin end, C, is cut into sirloin steaks (see fig. 27).

**Rump.** The rump is separated from the round on line 16 to 17, which lies just below and parallel to the pelvic arch. It is usually used as a roast, either boned and rolled, or with the bone in (see fig. 28).

**Round.** The round is usually cut into steaks, but may be used as a roast. The rounds from thin cattle are usually cut into three pieces for dried beef. The flesh on the front part of the leg is known as the knuckle. The large muscle on top of the round, or on the inside
Fig. 23. Showing cuts on hind quarter. (A) Round. (B) Rump. (C) Loin end. (D) Short loin. (E) Flank. (F) Flank steak.
Fig. 24.—Flank steak.

Fig. 25.—Short loin. Showing club steak.
of the leg, is known as the inside or top. (A in fig. 29.) This is the most tender part of the round. The bottom of the round, or the outside of the leg, is known as outside or bottom (B in fig. 29). The three pieces, inside, outside and knuckle, are known as a dried beef set.

Sometimes thin carcasses are boned out, and then the round, A, is known as a dried beef set, the rump, B, is known as rump butt, and the loin end, C, is known as "sir butt." The short loin, D, is called "boneless strip." The tenderloin muscle, which lies on the lower side of the porterhouse steak, is pulled out and known as "tender" or "filet" of beef. The prime rib, when boned, is known as a "Spencer roll", if it contains a small amount of fat. If it has practically no fat at all, the top strip is taken off and the cut is then known as a "regular roll." The entire plate may be boned and rolled and is known as "roll boneless." The large muscle lying in the angle made by the shoulder blade and the arm of beef can be pulled out and is known as a "Scotch clod," "chuck roll" or "C shoulder"; if not trimmed, it is spoken of as boneless chuck.

**Fig. 26.—Short loin. Showing porterhouse steak. (A) Tenderloin muscle. (B) Strip ends.**

**Hamburger.** For hamburger, use all of the lean trimmings, such as the diaphragm muscle, the hanging tenderloin, which is located on the backbone, line 1 to 3 passing thru the cut, and any other parts of the carcass for which you have no other use. Grind and mix with following formula:

- 50 lbs. beef.
- 1 lb. salt.
- 4 oz. pepper.

**Corned Beef.** Any part of the beef carcass can be corned. The brisket, navel and rump are often used in this way. Cut in five or six-
Fig. 27.—Loin end. Showing sirloin steak. (A) Tenderloin muscle.

Fig. 28.—Rump of beef.
pound chunks and rub with salt. Pack in a clean vessel of hardwood or stone and cover with the following sweet pickle:

$$\begin{align*}
1 \frac{1}{2} \text{ lbs. salt.} \\
1 \text{ oz. salt petre.} \\
\frac{3}{4} \text{ lb. sugar or syrup.} \\
1 \text{ gal. water.}
\end{align*}$$

This will be cured in about two weeks and can be used out of the brine. If it stays in the brine a month or more, it should be par-boiled.

Dried Beef. The beef rounds are usually dried and the clod is sometimes used also. Use the same pickle as for corned beef. Allow each piece to stay in the brine about three days to the pound, hang up, and allow it to drip about 24 hours. Give it a light smoke and hang in a warm place to dry.

Using Beef Fat. A small amount of beef fat can be added to pork fat for making lard. It can also be utilized to good advantage in making soap.

Soap. Mix 1 pound of lye with 2½ pints of water. Use about 6 pounds of melted fat. When the mixture and the melted fat are both about 70° Fahrenheit, mix slowly and stir until about the consistency of thin honey, pour into a granite pan or a wooden vessel and cut into cakes. It should be allowed to cure about two weeks before using.

PERCENTAGE OF WHOLESALE BEEF CUTS TO CARCASS WEIGHTS

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