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Meat Identification and Judging



At Work in a Meat Identification Contest

A Manual for 4-H Club Members

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South Dakota State College Extension Service

A. M. Eberle, *Director*

- - - Brookings, South Dakota

MEAT IDENTIFICATION AND JUDGING

Meat is a food most attractive to one's appetite. A diet without meat lacks savoriness and palatability. The following statement regarding meat has been accepted by the American Medical Association: "The modern science of nutrition shows meat to be a wholesome, valuable, healthful, easily digestible and highly nutritious food." Because of meat's importance in the diet, all 4-H Club members should avail themselves of the opportunity afforded by meat judging and identification work to become more familiar with quality in meat and with the wholesale and retail cuts of meat.

It has been customary for farm families to depend upon a supply of home cured and canned meat for the summer season, diversifying this with poultry and eggs, but somehow during the season of heavy work and hot weather, the members of the family would much prefer a few meals where a good beef steak, grilled pork chops or a leg of lamb roast constituted the meat dish. Through the operations of a meat club such meals are possible in any community. A neighborhood of four families may form a meat club and provide their tables with fresh pork or lamb each week; while, if a community group of from 16 to 40 farm families are sincerely interested, a beef club may be organized and operated successfully.

Refrigeration has always been an important factor in the merchandising of meat. In recent years the development of the refrigerator locker system enables farm families, who use it, to enjoy the advantage of having at any time during the warmer season fresh beef, veal, pork or lamb produced on their farm. For those who produce their own meat it is important to know how to break the carcass down into wholesale and retail cuts of meat so that the meat can be used to the best advantage. It is equally important for urban people to have a similar knowledge about meat so they may make their purchases more judiciously.

Meat on the Hoof

When a livestock judge examines and places a class of fat steers, fat hogs or fat lambs in the show ring, he has an ideal in mind for each class of stock and selects toward that ideal until the animals have all been placed. In fat classes of livestock such an ideal must be a fattened or finished animal carrying a smooth, firm covering of flesh and fat, it must not be gobby, wasty nor paunchy, and it must be of correct conformation and have a great deal of quality. The packer buyer at the livestock market when making his purchases, pictures the animals in his mind as to how they will kill—meaning what percent they will dress out and the relative yield of high and low priced cuts. Finally, when the meat is sold over the butcher's block the consumer has the privilege of selecting the most desirable cuts and naturally the consumer who knows meat cuts and their uses, other things being equal, can make the most satisfactory purchases.

The three illustrations in this circular showing the wholesale cuts outlined on the animal before slaughtering are of particular value to the livestock club members for in their livestock feeding work they are striving to produce meat on the hoof which meets with a ready demand on the part of consumers. It should be kept in mind that even though the lower quality cuts of meat are located mostly in the lower half of the body, nevertheless meat from such cuts is equally nutritious with

that from higher quality cuts and with a little different preparation for the table, may be made fully as palatable. It is important that livestock for slaughter be thickly fleshed in the regions of the more valuable cuts. The more weight the animal carries in the rib, the loin and the round or ham compared with the weight in the shoulder and lower half of the body, the more valuable it will be from the butcher's standpoint.

BEEF

Beef is light cherry red in color and the lean should be well mottled or marbled with fat. The fat should be a firm white. The bones should be porous and pinkish. Flinty white bones are an indication of an aged animal.

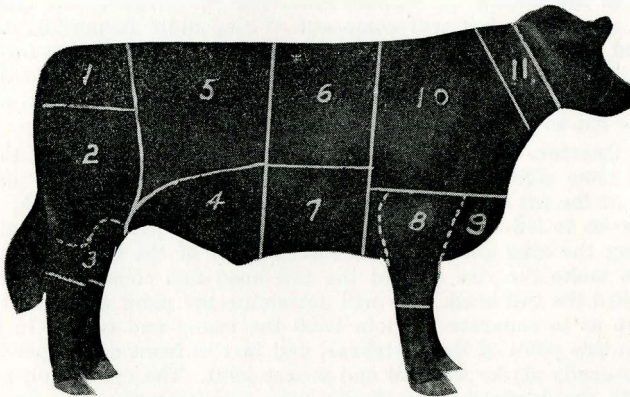


Fig. 1.—Wholesale Cuts of Beef Outlined

- | | | | |
|---------------|----------|---------------|-----------|
| 1. Rump | 4. Flank | 7. Plate | 10. Chuck |
| 2. Round | 5. Loin | 8. Fore Shank | 11. Neck |
| 3. Hind Shank | 6. Ribs | 9. Brisket | |

The side of beef, illustrated in Fig. 3, is divided into steaks, roasts, and stew meat. The most valuable wholesale cuts are the loin, the round, the rib, and the rump. The loin and round are usually cut into steaks, and the rib and rump into roasts. The chuck is used for roasts and steaks; flank for steak, stews or hamburger; and the plate and brisket for stews or it may be boned and rolled for roasts. As a rule, there is more demand for steaks than there is for roasts, especially during warm weather, because they are more easily cooked and served. For this reason, steaks usually sell higher than roasts. Loin steaks are more tender than round steaks and generally sell for higher prices. Rump and rib roasts are considered more desirable than chuck roast, which is a little coarser in texture.

Making the Wholesale Cuts

In cutting up a side of beef, the cuts are made to separate the higher priced, or better quality cuts, from the cheaper or lower quality cuts. In quartering the side of beef, the cut is made between the twelfth and thirteenth ribs, thus leaving one rib on the hind quarter. This too, leaves approximately 49 per cent of the weight in the hind quarter, and 51 per cent of the weight in the fore quarter. Very often the cut is made be-

tween the eleventh and twelfth ribs, as this divides the two quarters quite equally. Insert the knife between the two last ribs, cutting between them toward the backbone; reverse the knife and cut toward the flank edge, but leave about 4 inches of the flank edge uncut so as to hold up the fore quarter after sawing through the backbone.

Fore Quarter.—In cutting up the fore quarter, the object is to separate the higher quality pieces of roasts from the lower quality or stew pieces. Place the quarter on the table with the bone side down. At the rib edge, determine the point where the lean is the thinnest, which will be about 12 or 13 inches from the middle of the backbone in the average quarter. Cut forward to between the fifth and sixth ribs. This will separate the plate from the rib. Make a cut between the fifth and sixth ribs so as to separate the prime ribs from the chuck and the plate from the brisket. In separating the brisket from the chuck, make the cut across the fore arm so that it will come out at the angle formed by the fore shank and brisket. Saw across the arm bone and separate the fore shank from the brisket by cutting along the connective tissue between the brisket and the under side of the shank. After removing the shank, continue this same cut so as to separate the brisket from the chuck.

Hind Quarter.—In cutting up the hind quarter, place it on the table with the bone side up. First remove the kidney fat or suet, leaving a covering of the fat over the tenderloin muscle. Remove the flank, making the cut so as to leave about four inches of the last rib in the flank piece. In opening the hind quarter, start at the point of the backbone where it begins to make the rise toward the tail head and count off four vertebrae toward the tail head. This will determine the point at which to make the cut so as to separate the loin from the round and rump. In making the cut at this point of the vertebrae, and just in front of the pelvic bone, it will naturally strike the ball and socket joint. The cut should be made parallel to the forward edge of the loin. In separating the rump from the round, the cut is made directly back of the pelvic bone. It is easier to handle the round by leaving the hind shank attached to it until most of the round has been used, then the shank may be removed by making the cut at the joint.

VEAL

Veal is obtained from young calves, usually from six weeks to three months of age, weighing less than 200 pounds. In color, it is a pale gray with a reddish tinge (whitish pink) and is not intermingled with fat. The flesh is fine grained but not as firm as that of beef. The fat is a clear white in the highest quality veal.

Making the Wholesale Cuts of Veal

The breaking down of the veal carcass into wholesale cuts differs slightly from the beef carcass. In fact, the cuts are quite similar to the wholesale cuts of lamb. In the packing house, a large per cent of veal carcasses are not split into halves along the backbone but are cut into hind and fore saddles by making the cut across the carcass between the twelfth and thirteenth ribs, thus leaving the last rib on the hind saddle. Carcasses used for the home or retail trade are split in halves along the backbone, and each half is quartered the same as for the side of beef. The wholesale cuts in the hind quarter are principally the leg and the loin; the cut for separating them being made from about the fourth

joint in the backbone to a joint just in front of the stifle joint in the leg. The flank may be removed from the loin and used for stew meat. The leg is used for cutlets, steak and roasts and the loin for chops and steak.

The fore quarter is broken down into three wholesale cuts known as the rib or rack, the chuck including the neck, and the breast including the fore shank. The breast is removed by making the cut lengthwise from the point on the rib-edge where the flesh is the thinnest to the point on the fore part of the shoulder just below the shoulder joint. The ribs are the choicest cut in the fore quarter and are separated from the chuck by making the cut between the third and fourth ribs. The breast may be stuffed and roasted or used for veal stew, the ribs are used as chops and the chuck may be worked into roasts, steak, chops and stew meat.

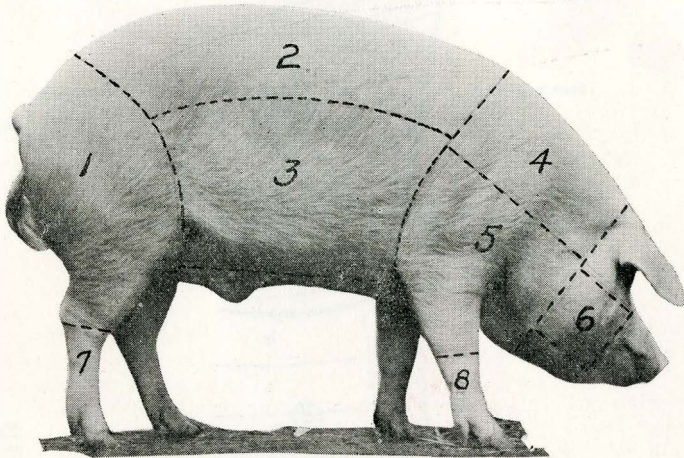


Fig. 2.—Wholesale Cuts of Pork Outlined

- | | | | |
|--------------|----------------|--------------------|--------------|
| 1. Ham | 3. Bacon Side | 5. Picnic Shoulder | 7. Hind Foot |
| 2. Pork Loin | 4. Boston Butt | 6. Jowl | 8. Fore Foot |

PORK

Pork is the most popular meat in South Dakota farm homes. The choicest cuts are obtained from the meat type hog ranging in weight from 175 to 250 pounds. The cuts from this type of an animal do not carry an excess of fat. The flesh is fine grained, firm and of a grayish pink color. The flesh from older animals is much darker than that from younger animals. The fat should be white and firm.

Making the Wholesale Cuts of Pork

The side of pork is not broken down into quarters since the pork loin and the bacon side comprises parts of both fore and hind quarters. The shoulder is usually removed by cutting across the third or fourth rib directly back of the shank, the place of cutting depending upon the size of the shoulder desired. In removing the ham, the cut is ordinarily made at right angles to the shank, two inches in front of the forward point of the aitchbone; in the heavier hog the cut should be made closer to the

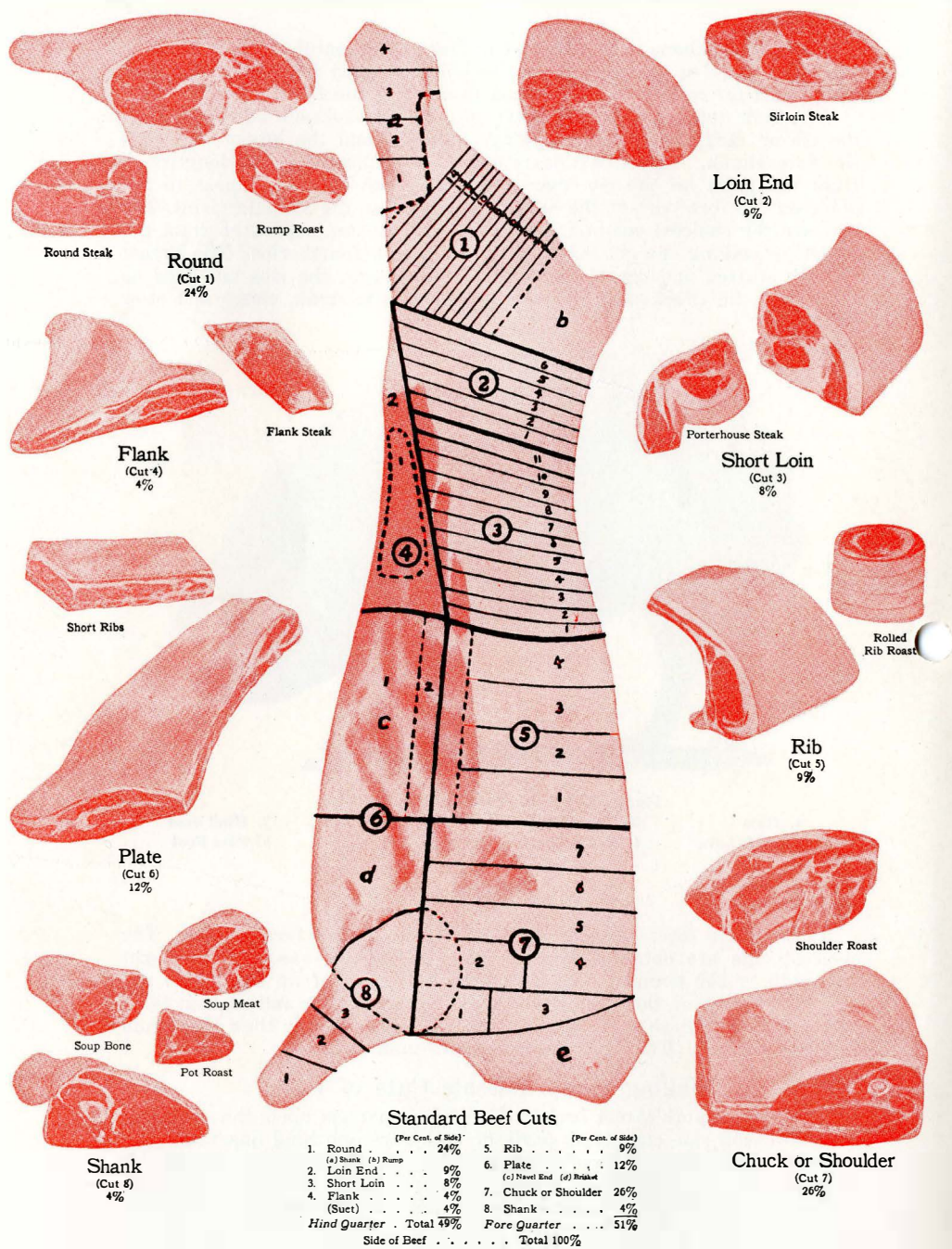


Fig. 3.—Side of Beef Showing Wholesale and Retail Cuts. (Courtesy Institute of American Meat Packers)

aitchbone so as to limit the size of the ham. The leaf fat is removed from the ribs. In separating the loin and fat back from the bacon side, the middle piece should be cut lengthwise from the base of the tenderloin, forward across the ribs to the lower edge of the backbone at the shoulder end, as illustrated in Fig. 7. As shown, the shoulder cut is then trimmed to produce the picnic shoulder, the boston butt, the clear plate, the jowl, the ribs and neckbones and the fore foot. The ham is trimmed so as to be more pear shaped. The fat back is removed from the pork loin and the spare ribs from the bacon side so that the latter may be shaped into desirable slabs of bacon.

The ham, picnic shoulder and the bacon pieces may be used fresh or cured and smoked. The feet are usually pickled. The clear plate and fat back may be used as salt pork or may be included in the lard stock with the leaf lard and other fat trimmings. The pork loin, and boston butt are used for chops or roasts.

LAMB AND MUTTON

Lamb is fully as palatable, nutritious and as easily digested as beef or pork. It is the finest textured meat produced from meat animals. Lamb refers to the flesh of young animals not over 12 to 14 months old, while mutton refers to the flesh from animals older than 14 months. Lamb flesh is fine grained, a light pink in color, while the fat is white, hard and flaky. Mutton is coarser grained and darker colored, the flesh approaching a dull brick red color in the older animals.

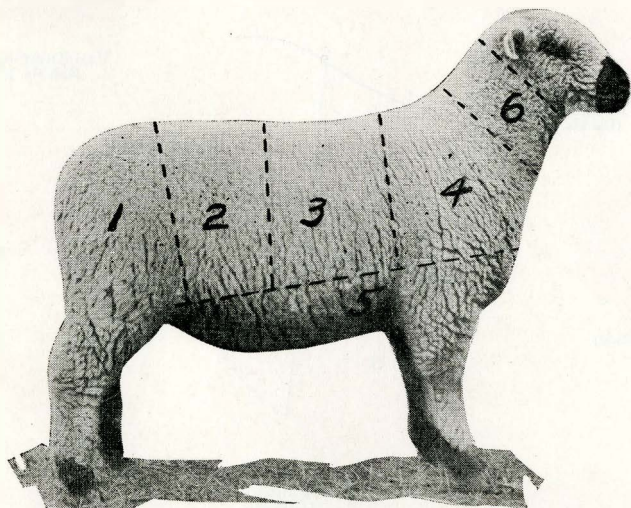


Fig. 5.—Wholesale Cuts of Lamb Outlined

- | | | |
|----------------|----------|--------------------------|
| 1. Leg of Lamb | 3. Rib | 5. Breast and Fore Shank |
| 2. Loin | 4. Chuck | 6. Neck |

Making the Wholesale Cuts of Lamb

Lamb carcasses are usually left whole but may be halved by cutting lengthwise with the backbone. The flank and breast cut is first removed. The carcass may be divided into fore and hind saddles by cutting across

the carcass between the twelfth and thirteenth rib, thus leaving a rib on the hind saddle. The loin is removed by cutting across a point back of where the backbone makes the curve toward the tailhead. The fore saddle is divided into the chuck and rib cut by making the cut across the carcass between the third and fourth or the fourth and fifth rib. The leg of lamb is the most desirable and the most economical cut in the carcass. It should be roasted or cut into steaks or chops. The loin and the rib is used for chops or roast. The chuck or shoulder may be used as a roast or stew or arm steaks may be cut from the lower part of the shoulder. The breast, fore shank and flank is usually used for stew, however, this cut and the neck may be boned and the meat ground into lamburger. The leg of mutton and the mutton shoulder are often times cured and smoked.

THE PRINCIPAL RETAIL CUTS OF MEAT

The club member should be familiar with the different retail cuts of meat. This is most assuredly worthwhile from the standpoint of one's activities later in life and is essential if one plans to participate in meat identification contests. The member should be able to identify the principal retail cuts and know the wholesale cut from which each is obtained. The local meat retailer will be glad to assist members in receiving training in this work for no one is more appreciative of this type of meat work than the meat retailer as he feels that the more the public knows about the cuts of meat and quality in meat the more appreciative they will be of their purchases.

Fresh Beef

Round

Round Steak
Top Round Steak
Bottom Round Steak

Eye Round Steak
Sirloin Tip Steak

Heel of Round Roast
Hind Shank

Rump

Rump Roast

Rolled Rump Roast

Loin End

Sirloin Steak (Butt End,
Wedge, Round bone,
Pin bone, or Double
bone)

Sirloin Roast

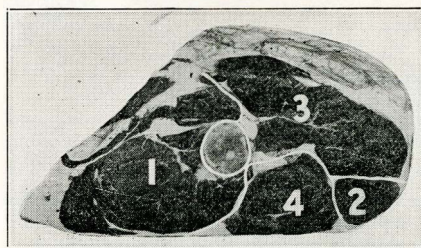


Fig. 6.—A round of Beef, showing the four muscles, (1) knuckle round; (2) eye of round; (3) top round; and (4) bottom round. In tenderness these muscles rank 3, 1, 2, and 4. In modern meat cutting these muscles may be separated from one another along connective tissue between each. Steaks or roasts may then be cut from any one muscle.

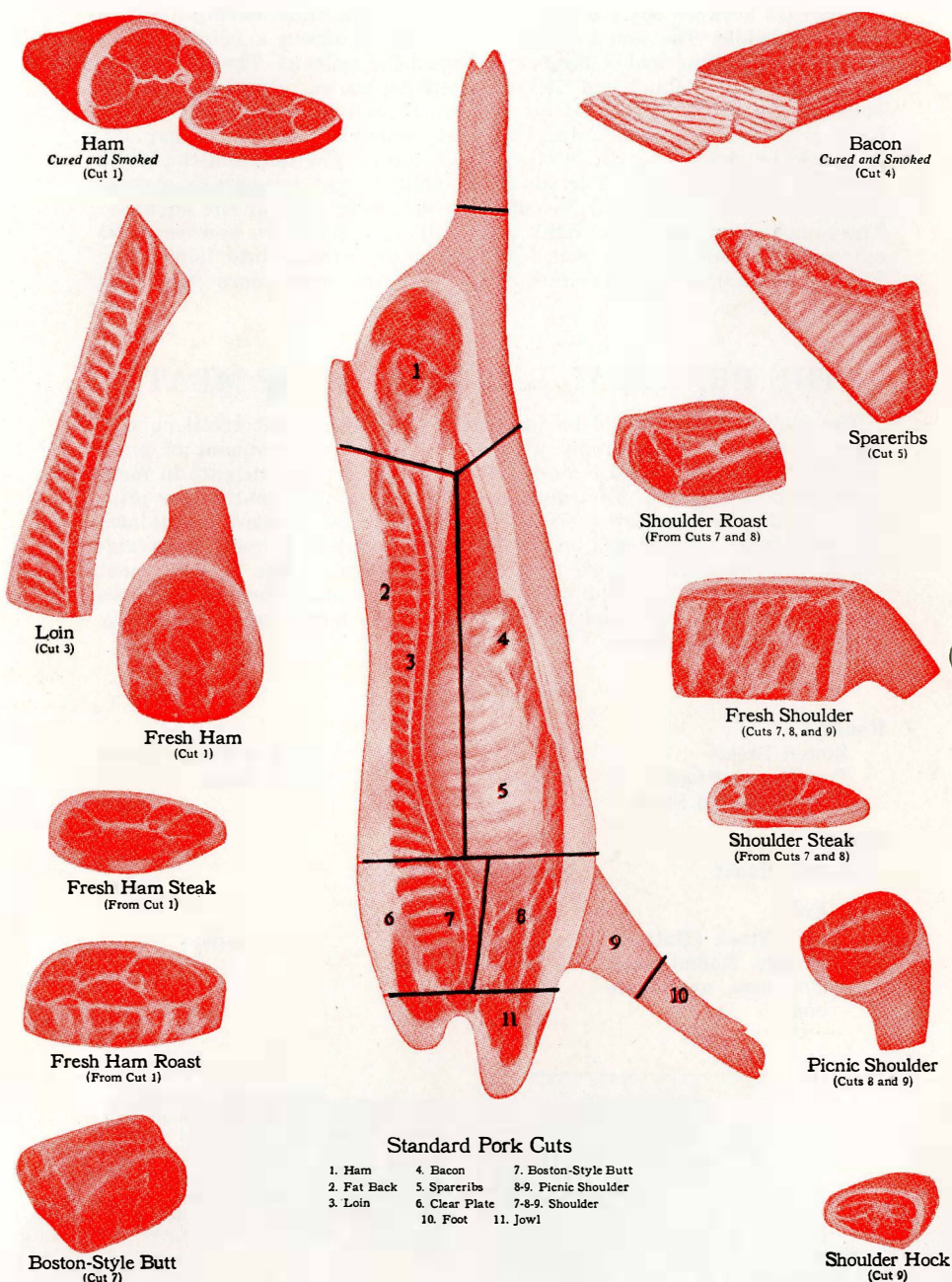
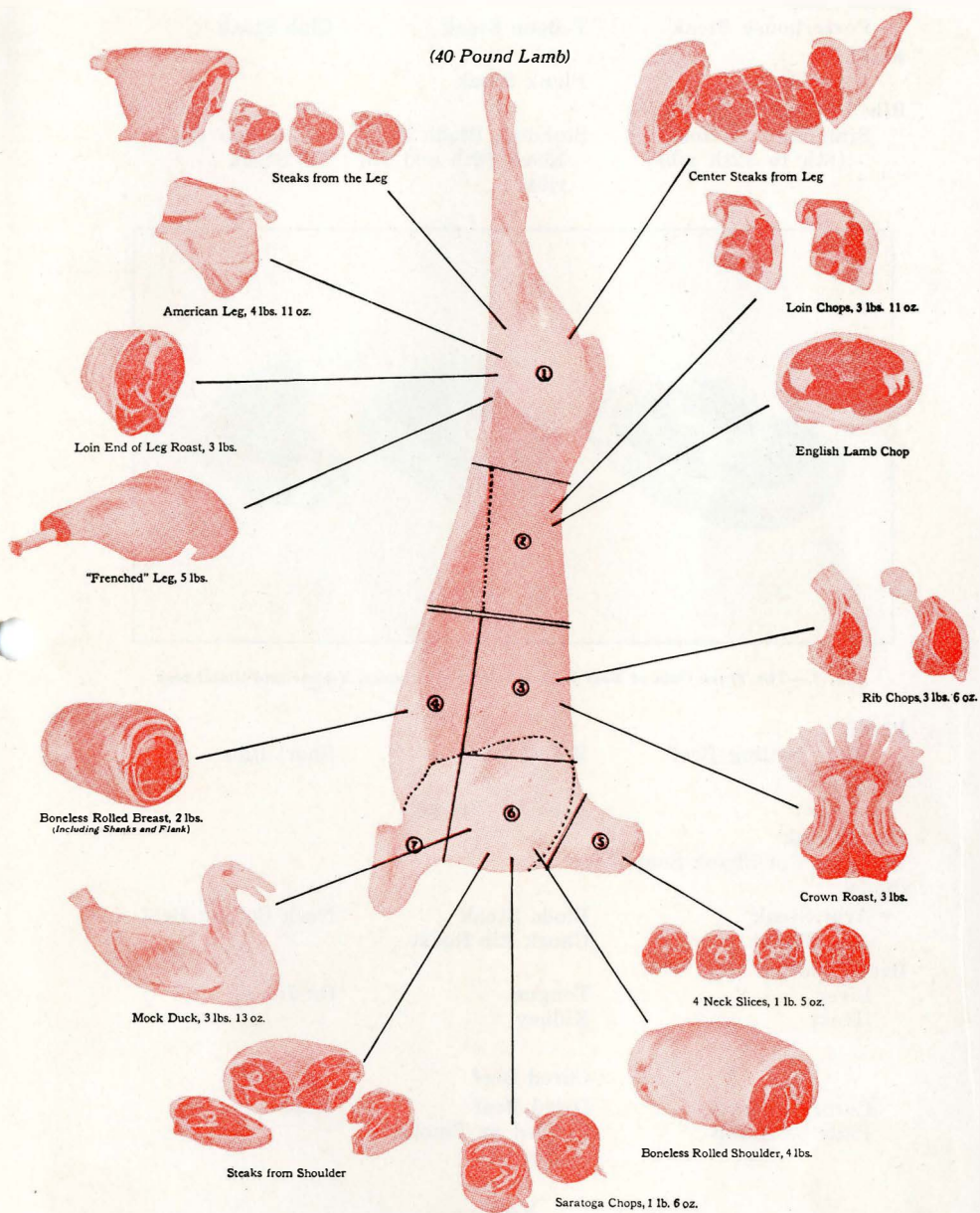


Fig. 7.—Side of Pork Showing Wholesale Cuts. (Courtesy Institute of American Meat Packers)



Standard Cuts and Their Uses

- | | | | | | | |
|----------------|---------------|---------------|--|-----------------------|----------------|-------------|
| ① LEG | ② LOIN | ③ RIB | ④ BREAST with Shank
and Flank—Roast | ⑤ NECK | ⑥ SHOULDER | ⑦ SHANK |
| Roasts, Steaks | Roasts, Chops | Roasts, Chops | | Braising, Broth, Stew | Roasts, Steaks | Broth, Stew |

Fig. 8.—Side of Lamb Showing Wholesale Cuts. (Courtesy Institute of American Meat Packers)

Short Loin

Porterhouse Steak

T-Bone Steak

Club Steak

Flank

Flank Stew

Flank Steak

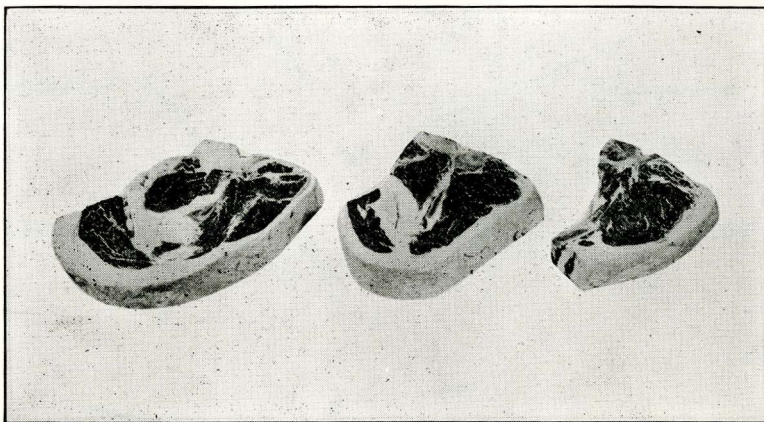
RibStanding Rib Roast
(8th to 12th ribs)Standing Blade Rib
Roast (6th and 7th
ribs)Rolled Rib Roast
Rib Steak

Fig. 9.—The Three Cuts of Beef Loin Steak—Porterhouse, T-bone and Club Steak

Plate

Plate Boiling Beef

Rolled Plate

Short Ribs

Brisket

Brisket

Boneless Brisket

Fore Shank

Cross Cut Shank Soup Bone

Chuck

Arm Steak

Blade Steak

Neck Boiling Beef

Arm Roast

Chuck Rib Roast

Beef Sundries

Liver

Tongue

Ox Joints

Heart

Kidney

Corned Brisket
Plate or Rump**Cured Beef**

Dried Beef

Tripe

Pickled or Smoked
Tongue**Veal****Leg**Veal Rump Roast
Veal Round SteakHeel of Veal Round
Roast

Hind Shank

Loin

Sirloin Veal Steak

Loin Veal Chop

Kidney Veal Chop

Rib

Rib Veal Chop

Veal Rib Roast

Veal Crown Roast

Shoulder

Arm Veal Roast

Blade Veal Roast

Rolled Veal Shoulder
Roast

Arm Veal Steak

Blade Veal Steak

Veal Neck

Breast and Shank

Veal Breast

Veal Fore Shank

Veal Sundries

Liver

Kidneys

Tongue

Heart

Brains

Sweetbreads

Fresh Pork**Ham**

Fresh Ham Steak

Fresh Ham Butt

Fresh Boneless Ham

Fresh Ham Hock

LoinLoin Pork Roast
(Ham End)

Pork Tenderloin

Rib Pork Chop

Loin Pork Roast
(Shoulder End)

Loin Pork Chop

Backbones

Loin Pork Roast
(Center Cut)

Fresh Fat Back

Side

Fresh Side Pork

Spareribs

Leaf Fat

Shoulder

Fresh Picnic Shoulder

Blade Shoulder Pork
Steak

Fresh Pigs Feet

Boston Butt

Arm Shoulder Pork Steak

Fresh Pork Shoulder
Hock

Neck Bones

Jowl

Fresh Trimmed Jowl

Pork Sundries

Heart

Kidney

Brains

Liver

Tongue

Cured Pork**Smoked Ham**

Smoked Ham Shank

Smoked Ham Slice

Smoked Ham Butt

Smoked Shoulder

Smoked Cottage Roll

Smoked Picnic Shoulder

Smoked Bacon

Breakfast Bacon

Bacon Square

Sliced Breakfast Bacon

Canadian Style Bacon

Salt Pork

Salt Side Pork

Salt Fat Back

Pickled Pork

Pickled Pigs Feet

Fresh Lamb

Leg

Lamb Leg

Sirloin Lamb Chop

Sirloin Lamb Roast

Loin

Loin Lamb Chop

English Lamb Chop

Rolled Loin of Lamb

Hotel Rack

Rib Lamb Chop

Crown Roast of Lamb

Chuck and Breast

Square Cut Lamb Shoulder

Arm Lamb Chop

Lamb Breast

Rolled Lamb Shoulder

Blade Lamb Chop

Lamb Shank

Cushion Lamb Shoulder

Rolled Lamb Breast

Neck Slice

Lamb Sundries

Heart

Kidney

Brains

Liver

Tongue

Cured Mutton

Smoked Leg of Mutton

Smoked Mutton Shoulder

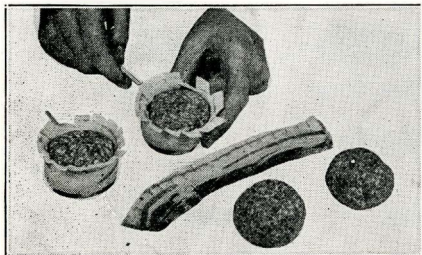


Fig. 10.—Lamb patties made by wrapping a cake of lamburger (ground lamb) with a slice of bacon. A toothpick is inserted through the ends of bacon into the patty to hold it in shape.

JUDGING MEAT

When judging meat as a carcass or as a wholesale cut, consideration is given to its conformation or form, its finish and to its quality. The condensed score card here shown is suggested as an aid to the beginner in arriving at a balance of judgment in considering the value of two or more cuts of meat.

	Percent
1. Conformation	25
2. Finish	35
3. Quality	40
	<hr/>
	100

The following explanation of the terms applies more particularly to beef. Similar requirements apply to veal, pork or lamb with slight variations, any such variations being listed at the close of each section.

1. Conformation.—This covers the shape, form and general outline of the side of beef or the wholesale cut, and depends upon (1) the bony framework or skeleton, (2) the depth of flesh, and (3) the amount and distribution of external fat. The first two are controlled to a large extent by a careful selection of the proper kind of feeder animal while the third

its added by good feeding. In considering conformation or form the side or cut of beef should be attractive, plump and smooth and not angular.

BEST conformation includes: Short shanks and neck, deep plump rounds, thick full loin, good balance, well covered ribs, and a deep ribbed middle making a straight line from round to shoulder. **POOR** conformation involves: Angularity in general appearance, prominent hip and shoulder bones, long slender rounds, a long neck, a shallow loin, a slack rib, and a lack of symmetry.

Poor conformation in veal also involves sharply tapering rounds. The best conformation for pork involves the meat type since it produces a higher yield of desirable cuts requiring less trimming than the fat type. Thickness, compactness, smoothness and moderate fullness are the important conformation requirements for the meat type pork carcass.

2. Finish.—By the term finish is meant the thickness and distribution of the fat. The evenness of fat distribution is largely a matter of breeding but the amount of fat is influenced by feed and care. Finish is an index to quality, it makes a carcass more attractive and is essential in making the meat palatable. In referring to the finish of a side or cut of beef, consider the covering of fat, which should be abundant, yet uniform and smooth, so there will be no “gobby” or “wasty” appearance.

BEST finish includes: A smooth and even covering of white flaky fat over the exterior of the carcass averaging about three-fourths of an inch thick over loin and ribs. As the rounds, neck and belly are the last section of the live animal to be covered with fat, the greater the degree of fat in these parts of the carcass, the higher the finish. The covering of fat should be smooth and not wasty about the kidney. **POOR** finish implies: A lack of external and internal fat, and uneven distribution of fat or a fat that is soft, patchy or yellowish.

In veal, the best finish involves a generous amount of interior fat of creamy pinkish color over the kidneys and in the crotch. For pork of

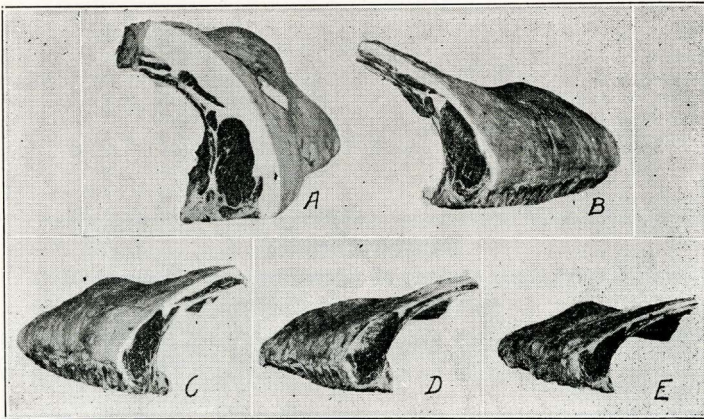


Fig. 11.—Grade of Beef Ribs (Loin Ends)

(A). Prime, (B). Choice, (C). Good, (D). Medium, (E). Common

most desirable finish, the back fat ought to average one and one-half inches in thickness depending upon the size and weight of the carcass. Desirable lamb carcasses should carry a smooth even covering of firm white fat over the loin and ribs.

3. Quality.—The character and color of the flesh and fat included in the side or cut of beef are what constitute quality. It includes juiciness and marbling, for beef which is dry and tough lacks quality. Quality is usually an index to good breeding and good fleshing. Age and sex are also important. Fineness of bone and hair, a thin pliable hide, and early maturity indicate quality in the live animal. Fig. 11 shows good and poor quality in beef. Beef of high quality, then, is well marbled, the lean is firm and not watery, and should be fine grained in texture and bright cherry red in color, while the fat should be flaky and of a white to creamy white color.

BEST quality includes: Delicately muscled fibered meat containing juices but remaining firm to touch. There must be a distribution of fat between the muscle fibres giving the cut surface a streaked or "marbled" appearance. The fat and meat juices give the meat its flavor. The cut surface shows fine grain, is smooth and velvety to sight and touch, and is light or bright cherry red in color. The cut surface of high quality meat will also reflect light. **POOR** quality meat is less tender due to muscle fibres lacking "marbling." It is dark red in color due to the age of the animal, its sex, the way it was fed, or to its management just before the slaughter. Poor meat lacks flavor and is dull in color when cut.

Quality in the other classes of meat has been referred to on preceding pages. It involves fineness of texture, firmness of flesh, and color of flesh and fat.

Extension Service

**South Dakota State College of Agriculture and Mechanic Arts
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