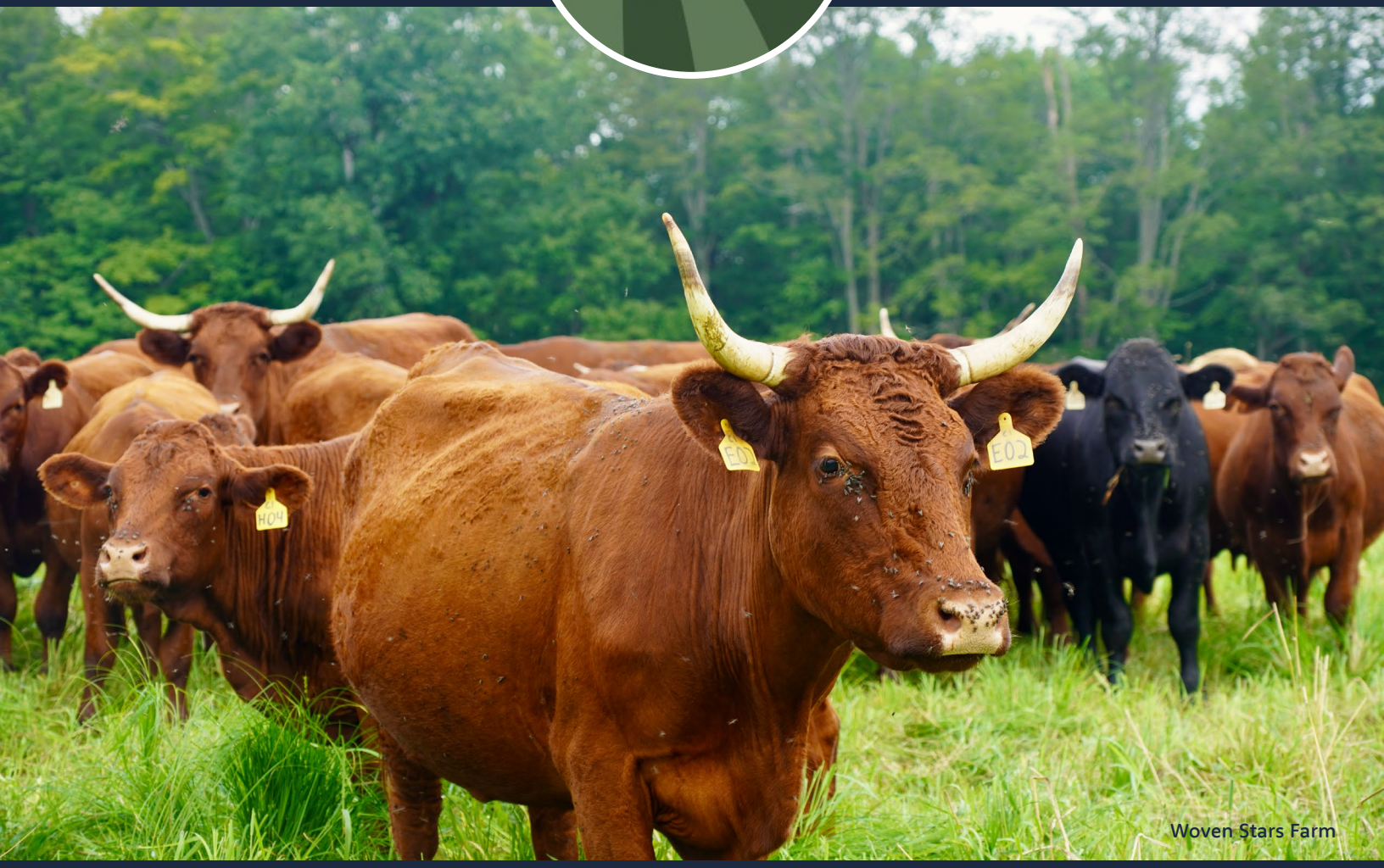
BERKSHIRE AGRICULTURAL VENTURES



Woven Stars Farm

a basic guide to

MEAT LITERACY

Berkshire Agricultural Ventures

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A Glossary of Butchery Terms


Woven Stars Farm

Body Condition: The general degree of fat present in the animal's body at a given time. Body condition reflects the suitability of the animal to meet the physiological demands of the production stage the animal is in. including suitability for slaughter. Body condition is often assessed using a numerical scoring system- Body Condition Score (BCS).

Carcass: The slaughtered and dressed (eviscerated, skinned or dehaired) body of the animal that is prepared for human consumption. Can be whole, halved, or quartered.

Connective Tissue: The tissue- mainly collagen but also the tissue that connects muscle to bone-, found throughout the carcass that contributes to a muscle's toughness. Most connective tissue, especially collagen, breaks down when the muscle is cooked at a low temperature over a longer period of time. Connective tissue is affected by the muscle activity, age, diet, and breed of the animal.

Cuts: The piece of muscle (which may include skin and bone) that is cut from the carcass to be consumed.

Eviscerated: The removal of the interior organs from the carcass of the animal.

Format: The size and orientation of the cut. For steaks and chops that might mean how thick it is and whether it is bone-in or not. For roasts it can refer to the weight of the roast and whether or not it has bone or skin on it. For cubed meat (like stew or kabob) it refers to the size of the cube. For ground meat it can refer to the coarseness of the grind and the fat-to-lean ratio.

Hanging Weight: The weight of the carcass after the animal has been killed, bled out, skinned/or scalded, and eviscerated.

There are two hanging weights: a hot hanging weight and a cold hanging weight.

> **Hot hanging** weight refers to the weight of the carcass immediately after the slaughter/skinning and evisceration when the carcass is still "hot".
>
> **Cold hanging** weight refers to the weight of the carcass after it has been chilled below 42◦ and is ready for further processing. Usually there is about a 2% loss from hot to cold mostly due to moisture evaporation.

Live Weight: The weight of the animal before slaughter.

Offal or Off cuts: This is a broad category that includes organ meat (liver, kidney, hearts), bones, skin, fat, tails, feet/trotters, and cuts from the head (cheeks, jowl, tongue, ears). These are traditionally harder to market cuts but often have great potential as value added products.

Primals: the four major sections that a carcass gets broken down into before further processing.

Value Added Products: This is any product that goes through a process which increases the value of the said product. In the case of meat production the process usually involves some form of physical transformation like making sausage, bacon, broth, or rendered lard.

Yields: The percentage of product left after it's been processed. There are two yields, the yield from live animal to hanging carcass, and then the yield once the carcass has been further processed into cuts, grind, etc. The yield is calculated dividing the weight post processing by the weight before processing.

From Primal to Plate

The Primals

Primals is the term used for the four major sections of a carcass. For beef and small ruminants (goats and sheep) the four primals are the same, but use slightly different terms. For pork the primals are very similar, the notable difference being the belly (for obvious reasons).

For Beef and Small Ruminants:

- Shoulder (Small Ruminants) or Chuck (Beef)
- Rib Section
- Loin section
- Leg (Small Ruminants) or Round (Beef)

For Pork:

- Shoulder
- Loin
- Belly
- Ham (Back Leg)

Imagine a pastured farm animal's life. It spends its days walking and running around, lowering and lifting its head to forage for food and laying down and getting up. With this image in mind, you can start to figure out where the cuts from more active muscles (the cuts with more connective tissue), and where the cuts from less active muscles (the tender cuts) might be. Understanding which muscle groups a cut comes from and how that muscle was used in the animal's life is a great way to begin to understand and think about how to best approach cooking it.

Shoulder: Lots of Connective Tissue and Lots of Flavor (Forequarter)

In beef, this part of the animal is referred to as the chuck; it includes the brisket, chuck eye, short ribs, and foreshank. In lamb, goat, and pigs it is simply called the shoulder. In pork, the shoulder is further divided into the upper shoulder (a.k.a. the "butt" or "boston butt"), and the lower shoulder (a.k.a. the "picnic ham"). The group of muscles that make up the shoulder are doing a lot of work: supporting lifting and lowering of the head and neck, bearing the weight of the animal when it stands, and controlling the movement of the forelegs as the animal moves around. With all of this action, the movement of various muscles generates a large amount of connective tissue. But there are some incredibly tender cuts buried in there like the terrace major (petite tender) and the eye of the shoulder (chuck eye (beef) or coppa (pork)). Generally speaking cuts from the shoulder have some of the best flavor, but can be tough unless cooked or processed with the right methods.

Rib and Loin: The "Money Meat"

The middle section, which is worth thinking about in terms of the upper section (rib and loin) and lower section (belly or breast or plate and flank). The upper section — what we butchers refer to as the "money meat," because they're the cuts that fetch the highest price — includes rib cuts, loin cuts, and the tenderloin. These muscles are the least active and therefore the most tender. Cuts include: New York strip steaks and ribeyes for beef, lamb loin chops and rib chops, pork chops, and tenderloin (aptly named because it's the most tender muscle in the body; a so-called "inactive" muscle, it's main purpose is to protect the animal's vital organs). While these cuts are more tender, they also have less flavor. The rib section tends to have the highest fat content from this primal, and thus has more flavor (fat = flavor). Generally speaking these are cuts that can be cooked at a high heat and quickly, like on the grill or seared in a pan.

The Belly (and Ribs)

Below the loin primal- the lower portion of the middle section- is what's referred to as the belly in pork, the breast in small ruminants, and the plate and flank in beef. You might think these muscles are fairly inactive, but that's not totally true- there are few things as important to the life of an animal as breathing. As the animals breathe, all day, every day, these muscles expand and contract. It is this expansion and contraction that accounts for the accordion-like long grained texture of the cuts from this section like the skirt steak and flank steak. This explains the leanness but also why these cuts have a fair amount of bite to them. This is also where most of the ribs are cut from; what in pork are the spare ribs, the plate in beef (often cut into short ribs), and breast (can be cut into riblets) in small ruminants.

From Primal to Plate

The Back Leg (Hindquarter)

Now we arrive at the back end of the animal, which by no means should be thought of as the least desirable. In beef, this primal is referred to as the round; in lamb and goat, the leg; and in pork, the ham. This primal is very active during the course of the animal's life, though it is not as active as the shoulder. While the shoulder is affected by the use of the neck and head, the hindquarter is solely responsible for the motion of the legs. Although this section has more connective tissue than the center primals does, it doesn't have nearly as much as the shoulder. And unlike the shoulder these cuts tend to be quite lean. On beef these cuts often have a strong iron flavor. With pork and small ruminants this cut is usually either left whole (and with pork usually smoked), or cut into steaks/chops. In beef the round is used for lean grind and various steaks and roasts.

Heads and Tails

The cuts from the head are often lumped in this group. These cuts can include the cheek, the jowl (from pork), the ear (on pork) and the tongue. With beef the tail is put in this category, commonly labeled as oxtail, and pigtails can also be considered here.

Skin

Skin is really only relevant for pork. Some cuts may include the skin on it, but most of the time, at least here in America, the skin is removed. Skin can have lots of great culinary uses and can be made into various value added products.

Bones

Bones can be used to make broth or as pet treats.

Fat

Fat can be rendered to cook with, or used to make various value added products. Generally speaking there are a few different kinds of fat:

- **Kidney Fat (Lumbar Fat):** One of the most prized kinds of fat is the kidney fat; in pork it's called leaf lard and in ruminants it is called suet (or when rendered tallow). This fat has a crystalline structure that makes it ideal for baking. When rendered this can be marketed as baking lard.
- **Back Fat (subcutaneous fat):** Particular to pork, back fat can be used as an additive to grind and sausage to make the mix fattier, or can be rendered to produce lard which can be used for cooking. When rendered this can be marketed as lard.
- **Intermuscular Fat:** This is the fat that covers any discreet muscle groups and helps to distinguish muscles from each other in the butchering process
- **Intramuscular Fat (Marbling):** This is the fat most commonly referred to as marbling which exists within a muscle. Muscle activity, age, feed, and breed of the animal all contribute to intramuscular fat.
- **Caul Fat:** The web of fat that surrounds many of the internal organs. This fat is often used in value added production, particularly in the French tradition.

Organ Meat (Offal)

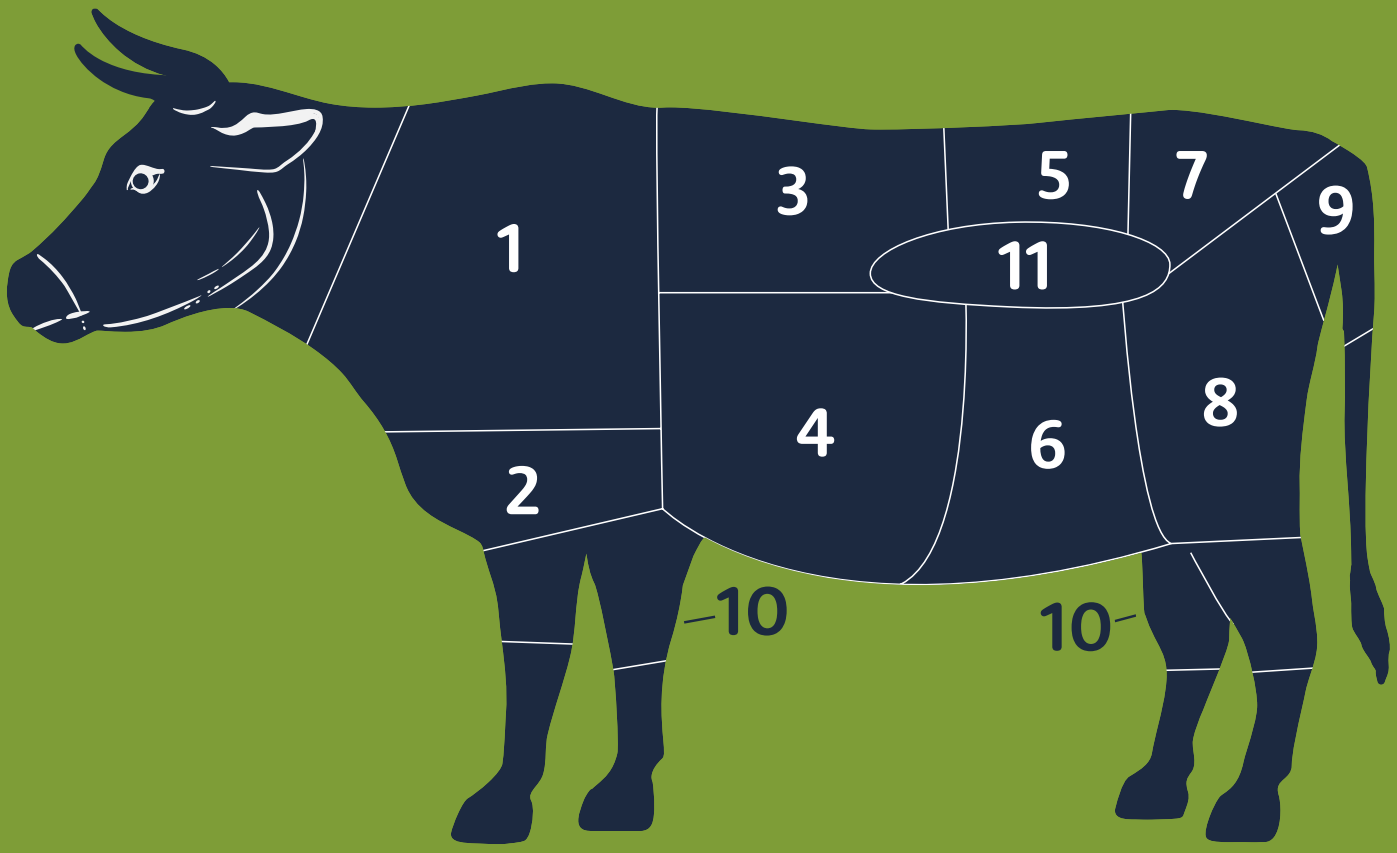
Organ Meat (Offal) usually consists of kidneys, liver, and heart. Other organs aren't included due to a combination of lack of market for them, and regulation making it more difficult (or impossible) to legally harvest them. Kidney, liver and heart can be used to make various value added products such as pate or pet treats.

Feet

Feet are most relevant for pig (trotters) and poultry (chicken and turkey feet). Feet are a great source of collagen and are most commonly utilized for making broth. But there are other culinary applications for feet. These can also be used for pet treats.

The preparations and uses in this document are written from a perspective of North Eastern America, following norms for meat use in modern American cuisine. Cultures around the world prepare and use carcasses differently and many, if not most, make greater use of the whole carcass than is the norm in our culture. As our communities become increasingly diverse with populations from around the world moving here, it is valuable to remain aware of what cuts of meat and other animal byproducts might become in demand or have market viability.

Beef Cut Diagram



Common Beef Cuts

1. Chuck
2. Brisket
3. Rib
4. Plate
5. Short Loin
6. Flank
7. Sirloin
8. Round
9. Oxtail
10. Shank
11. Tenderloin

Common Beef Cuts

CHUCK

- **Chuck Roast** (Braise)
  - Boneless
  - Bone-in
- **Shoulder/Clod Roast** (Boneless)
- **Mock Tender**
- **Shanks** (Braise)
- **Short Ribs** (Braise or BBQ)
  - Flanken (Grill or Broil)
- **Brisket** (Braise or BBQ)
- **Steaks** (Quick and Hot)
  - 7steak (Bone In)
  - Del Monico (Boneless)
  - Chuck Steak (Boneless)
  - Flat iron (Boneless)
  - London Broil (Boneless)
- **Grind** (Quick and Hot or Braise)
- **Stew** (Braise)

RIB

- **Roasts**
  - Standing Rib Roast (Bone in) (Roast)
  - Prime Rib Roast (Bone out) (Roast)
- **Ribeye Steaks**
  - Bone in (Quick and Hot)
  - Bone out (Quick and Hot)
- **Plate**
  - Short Ribs (Braise or BBQ)
  - Flanken (Grill or Broil)
  - Skirt Steak (Grill or Pan Fry)
- **Hanger Steak/Hanging Tender** (Grill or Pan Fry)

LOIN

- **Roasts**
  - Bone out (Roast)
- **NY Strip/NY Sirloin Steaks** (Grill, Broil, Pan Fry, or Pan Roast)
  - Bone in
  - Bone out
- **Tenderloin**
  - Roast (Roast)
  - Steaks (Pan Fry or Pan Roast)
- **T-bone and Porterhouse** (either this cut or NY Strip and Tenderloin) (Grill, Broil, Pan Fry, or Pan Roast)
- **Navel/Flank/Flap Meat**
  - Skirt Steak (Grill or Pan fry)
  - Bavette/Sirloin Flap/Flap Meat (Grill or Pan Fry)
  - Trim
- **Sirloin**
  - Boneless Roast (Roast)
  - Steaks (Grill, Broil, Pan Fry, or Pan Roast)
  - Grind

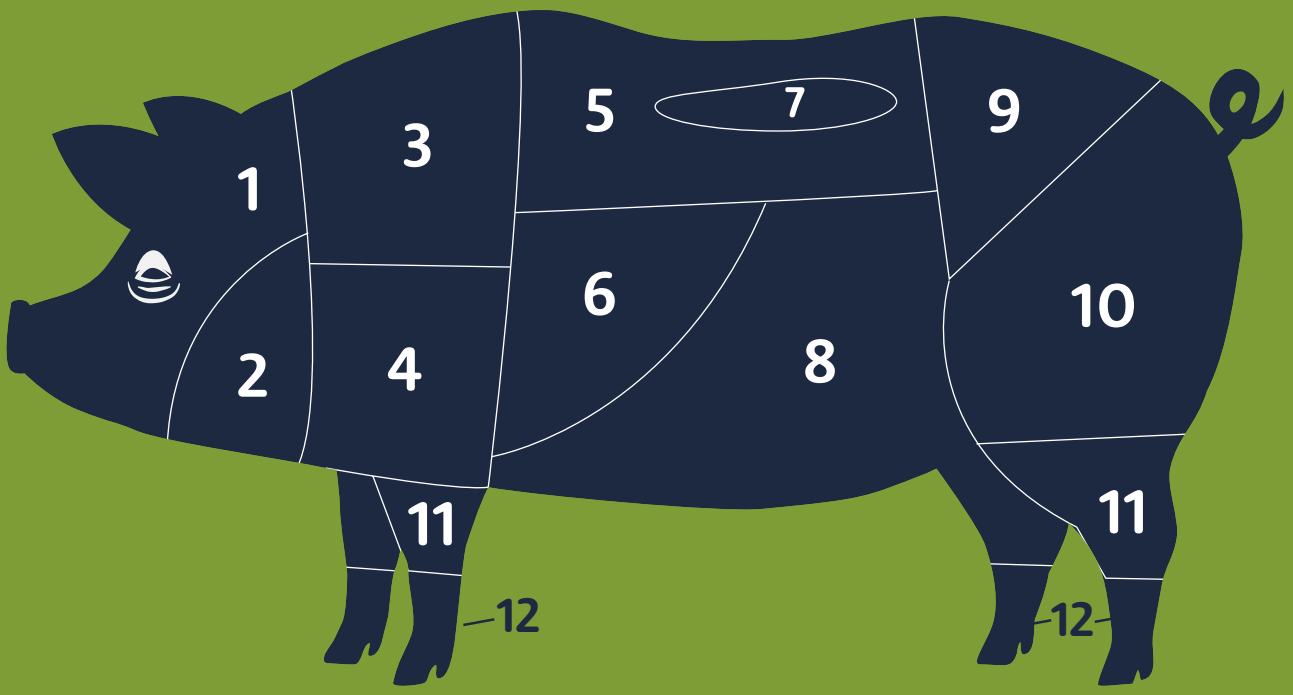
ROUND

- **Roasts**
  - Bottom Round (Roast)
  - Top Round (Roast)
  - Eye Round (Roast)
  - Sirloin Tip/Silver Tip/Top Sirloin (Roast)
- **Tri-tip** (Roast, BBQ, Grill, or Pan Roast)
- **Steaks**
  - London Broil (Grill, Broil, Pan Fry, or Pan Roast)
- **Grind**
- **Kebab/Lean Stew** (Grill, Broil, Pan Fry, or Pan Roast)
- **Shanks** (Braise)

FIFTH QUARTER

- **Oxtail** (Braise)
- **Bones**
- **Cheeks** (Braise)
- **Fat**
  - Caul Fat (Gut Fat)
  - Tallow (Kidney Fat)
- **Organs**
  - Heart (Grill or Braise)
  - Tongue (Braise)
  - Liver (Pan Fry)
  - Kidney

Pork Cut Diagram



Common Pork Cuts

1. **Head**
2. **Jowl**
3. **Boston Butt** (Top shoulder)
4. **Picnic Ham** (Bottom Shoulder)
5. **Loin**
6. **Ribs** (Spare)
7. **Tenderloin**
8. **Belly**
9. **Sirloin**
10. **Ham**
11. **Shank/Hock**
12. **Trotter**

Common Pork Cuts

SHOULDER

- **Roasts**
  - Bone in
    - Boston Butt (Roast or Braise)
    - Picnic Ham (Roast or Braise)
  - Bone out
    - Boston Butt (Roast or Braise)
    - Coppa (Roast or Braise)
- **Shanks** (Braise or Trim/Grind)
- **Country Style Ribs** (Braise)
- **Steaks**
  - Blade Steak (Bone in) (Grill)
  - Coppa Steak (Boneless) (Grill, Pan Fry, or Pan Roast)
- **Grind** (can be used for sausage)
- **Stew** (Braise)

BELLY

- **Spare Ribs** (Braise, BBQ, or Roast)
- **Belly**
  - Raw (Braise or Roast)
  - Bacon

LOIN

- **Boneless Loin Roast** (Roast)
- **Pork Chop**
  - Bone in (Grill, Pan Fry, or Pan Roast)
  - Bone out (Grill, Pan Fry, or Pan Roast)
- **Tenderloin** (Roast, Grill, or Pan Roast)
- **Sirloin**
  - Roast (Boneless) (Roast)
  - Chops (Bone in) (Grill, Pan Fry, or Pan Roast)
  - Grind

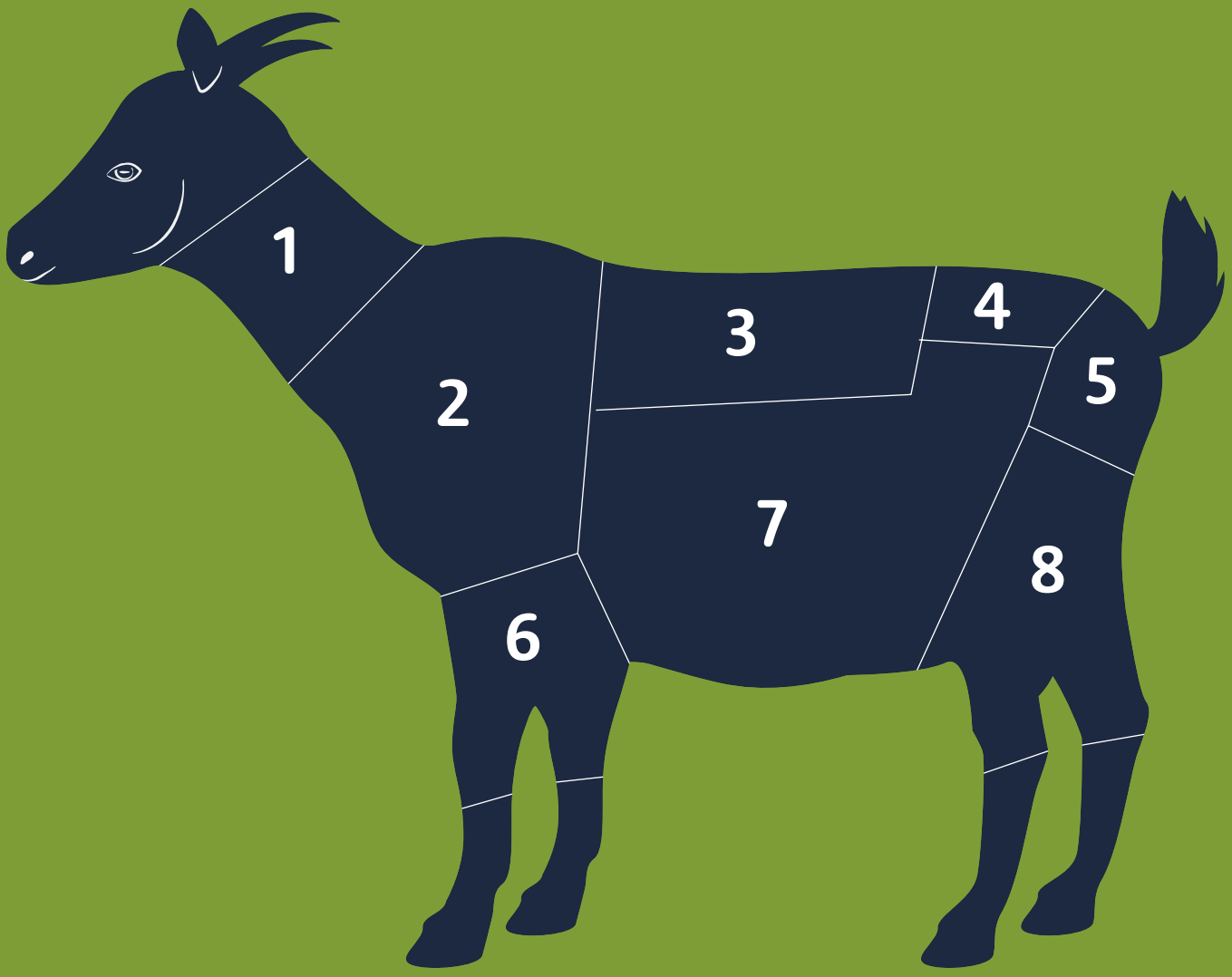
HAM

- **Smoked Ham**
  - Bone in
  - Boneless
- **Fresh Roast**
  - Boneless (Roast or Braise)
  - Bone in (Roast or Braise)
- **Smoked Ham Steak** (Grill or Pan Fry)
- **Grind**
- **Kebob** (Grill or Broil)
- **Shanks** (Braise)
  - Smoked Trotter

FIFTH QUARTER

- **Trotters**
- **Head**
  - Jowl (Braise or Roast)
  - Cheeks (Braise or BBQ)
- **Fat**
  - Caul Fat
  - Leaf Lard (Kidney Fat)
  - Fat Back (Fat of the Loin section)
- **Organs**
  - Heart (Grill or Braise)
  - Tongue (Braise)
  - Liver (Pan Fry)
  - Kidney

Small Ruminant Cut Diagram



Common Lamb/Goat Cuts

1. Neck
2. Shoulder
3. Rib
4. Loin
5. Sirloin
6. Shank
7. Breast
8. Leg

Common Lamb/Goat Cuts

SHOULDER

- **Roasts**
  - Square Cut Shoulder Roast (Bone in) (Braise, Roast, or Smoke)
  - Shoulder Roast (Bone out) (Braise, Roast, or Smoke)
  - Forequarter/whole shoulder roast (bone-in) (Braise, Roast, or Smoke)
- **Shanks** (Braise)
- **Shoulder Chop** (Bone in) (Grill, Broil or Pan Roast)
- **Grind** (can be used for sausage)
- **Stew** (Braise)

RIBS

- **Roasts**
  - Rack of Ribs (Bone in) (Roast)
  - Saddle Roast (Bone out) (Roast)
- **Rib Chops** (Grill, Pan Fry, or Pan Roast)
- **Breast**
  - Riblets (Grill, Smoke, or Braise)
  - Denver Style Ribs (Grill, Smoke, or Braise)

LOIN

- **Roasts**
  - Bone in (Roast)
  - Saddle Roast (Bone out) (Roast or Pan Roast)
- **Loin Chops** (Grill, Pan Fry or Pan Roast)
- **Flank**
  - Trim
- **Sirloin**
  - Boneless Roast (Roast)
  - Kebab (Grill or Broil)
  - Grind

LEG

- **Roasts**
  - Boneless (Braise, Smoke, or Roast)
  - Bone in (Braise, Smoke, or Roast)
- **Butterflied** (Boneless) (Grill, Smoke or Pan Roast)
- **Steaks** (Bone in) (Grill, Broil, or Pan Fry)
- **Grind**
- **Kebab** (Grill or Broil)
- **Shanks** (Braise)
- **Fifth Quarter**
  - Neck
  - Bone in Roast (Braise)
  - Stew (Braise)
  - Grind
- **Organs**
  - Heart (Grill, Smoke, or Pan Fry)
  - Tongue (Braise)
  - Liver (Pan Fry)
  - Kidney

A Glossary of Cooking Methods

Quick and Hot Cooking Methods

Broil:
This involves a high-heat source elevated above the meat. It basically works like an upside down grill. This offers very little temperature control.

- Cuts can either be marinated beforehand or have a rub applied.
- Recommended for cuts 1½-inches or thinner that lay flat.

Grill:
This involves a high-heat source below the meat. The fuel source is typically charcoal, gas, or wood. Smoke can be added via the addition of wood chips or sawdust. Depending on your grill set up you can create different temperature zones, using direct and indirect heat for better temperature control.

- Cuts can either be marinated beforehand or have a rub applied.
- Recommended for cuts, less than 2-inches thick.

Pan-Fry:
This is a stovetop method where the meat is seared in a hot pan and flipped at least once. This can be done in a dry pan, or a pan with some fat (butter, oil, or lard) in it.

- Cuts can either be marinated beforehand or have a rub applied.
- Recommended for tender cuts less than 1-inch thick.

Pan-Roast:
This method involves meat that is seared in a hot pan on the stovetop, flipped, and then transferred into an oven to finish cooking. You can also flip this order, starting in a low-degree oven and finishing in a hot stovetop pan, a technique known as a reverse sear.

- Cuts can either be marinated beforehand or have a rub applied.
- Recommended for tender cuts 1- to 3-inches.
- Slow and Low cooking methods

Barbecue and Smoking:
This is where the meat is cooked at a low temperature for an extended period. Wood or charcoal typically acts as the heat source while also providing smoke. Barbecue can involve dry- or moist-heat, depending on how humidity is controlled.

- Cuts typically have a rub applied to them or are brined before being cooked.
- Recommended for ribs or large cuts that have adequate amounts of connective tissue and/or fat.

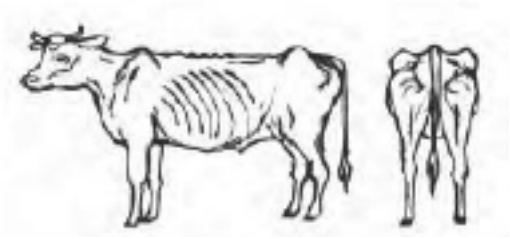
Braise:
This is where the meat is cooked in a liquid/sauce, often you sear or brown the meat first. This can be done on a stovetop, in an oven, or with a slow cooker.

- Recommended for tougher cuts with abundant amounts of connective tissue.

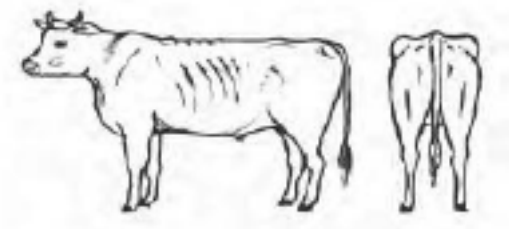
Roast:
This is where the meat sits in an uncovered vessel in an oven.

- Recommended for cuts thicker than 2” or large roasts.

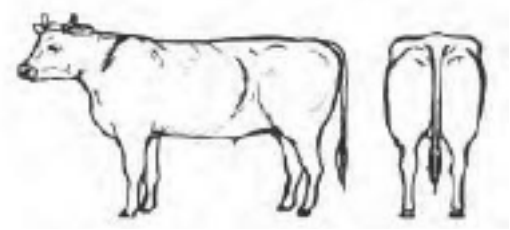
Cattle Body Condition Scoring



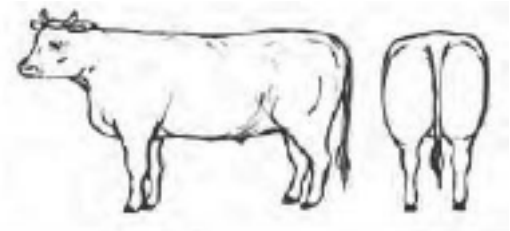
Condition Score 1
- Backbone prominent
- Hips and shoulder bones prominent
- Ribs clearly visible
- Tail-head area recessed
- Skeletal body outline



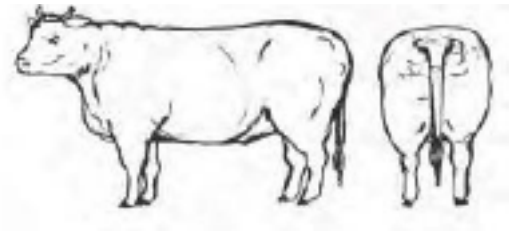
Condition Score 2
- Backbone visible
- Hips and shoulder bones visible
- Ribs visible faintly
- Tail-head area slightly recessed
- Body outline bony



Condition Score 3
- Hips bones visible faintly
- Ribs generally not visible
- Tail-head area not recessed
- Body outline almost smooth

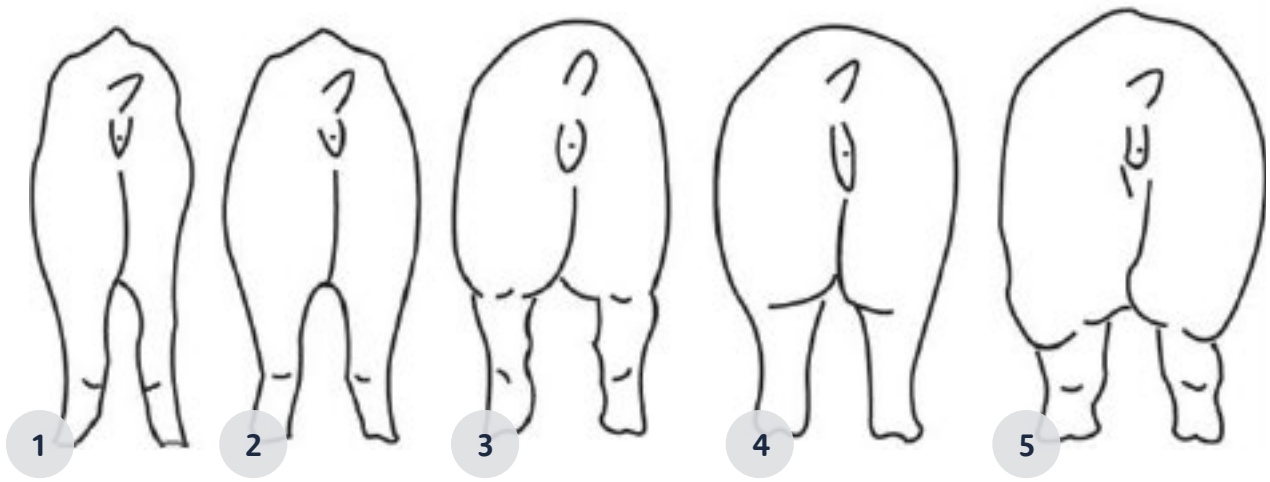


Condition Score 4
- Hips bones not visible
- Ribs well covered
- Tail-head area slightly lumpy
- Body outline rounded



Condition Score 5
- Hips bones showing fat deposit
- Ribs very well covered
- Tail-head area very lumpy
- Body outline bulging due to fat

Sow Condition Scoring

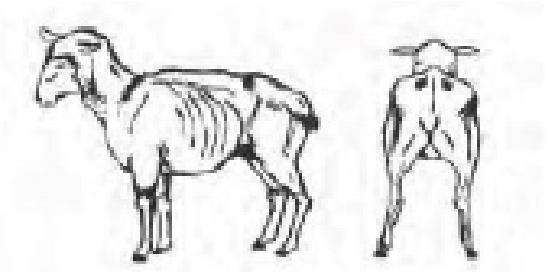


Condition Score 1
Scores are arranged from 1 (left) which is assigned to emaciated sows to 5 (right) which is reserved for excessively fat sows. **A score of 3 idea ideal.**

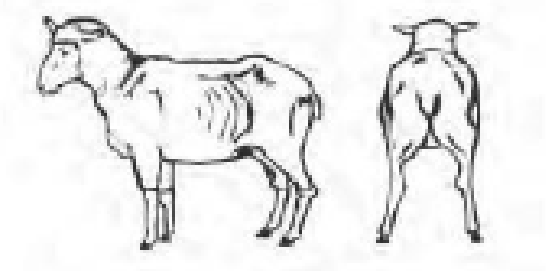
Taton from "Assessing Sow Body Condition" by R.D. Conffey, G.R. Parkor, and K.M. Laurent (ASC-158); 1999).

Score	Last rib backfat depth (in.)	Condition	Body Shape
1	<.6	Emaciated	Hips, spine prominent to the eye
2	.6-.7	Thin	Hips, spine easily felt without pressure
3	.7-.8	Ideal	Hips, spine felt only with firm pressure
4	.8-.9	Fat	Hips, spine cannot be felt
5	>.9	Overfat	Hips, spine heavily covered

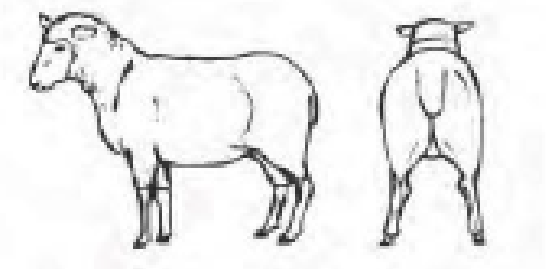
Sheep Body Condition Scoring



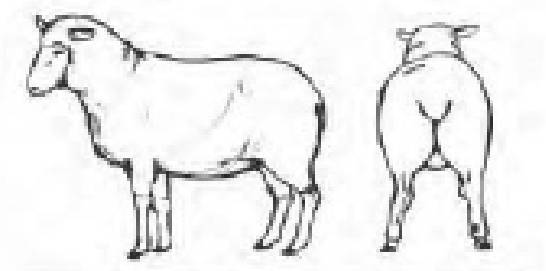
Condition Score 1
- Appearance angular and narrow
- Backbone raised and sharp
- Hallow behind ribs
- Tail feels bony
- Neck bones prominent



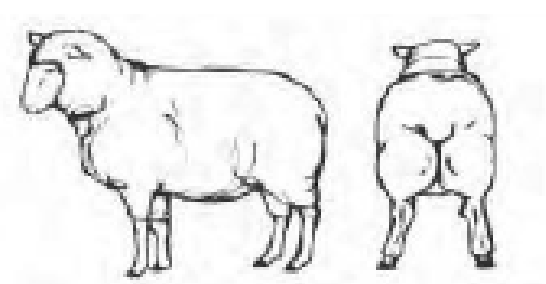
Condition Score 2
- Backbone raised but smooth
- Ribs are easily felt
- Tail bone easily detectable
- Thin neck



Condition Score 3
- Backbone slightly raised
- Ribs smooth, can just be felt
- Tail bones barely detectable



Condition Score 4
- Appearance well rounded
- Backbone can just be felt
- Ribs are covered
- Tail firm and rounded



Condition Score 5
- Appearance very well rounded
- Backbone barely detectable
- Ribs cannot be felt
- Tail fat and broad

Yields

Different species have different yield averages. Below is a breakdown of the expected average yield for beef, pork, and lamb, respectively, raised on a pasture based system. These are just averages, so the yield for your animals- depending on management practices, breed, age, etc-may vary from what is described below. It is highly encouraged that you do your own yield tests for your animals/product.

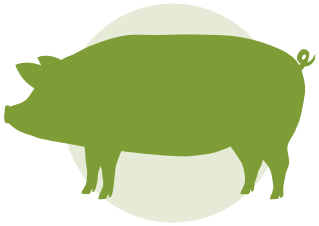
Some processors use technology such as Vista Track that can also provide yield data, ask your processors if they have such technology. Conducting semi-regular yield tests can help you determine pricing and profits as well as make management decisions about your livestock such as when you decide to send them to slaughter, what breeds you are raising, and how you are feeding and finishing your animals.

BEEF

1000 lbs Steer, live weight

630 lbs hanging weight, dressed 63% yield (37% loss)

- **Bone-in 450 lbs** - 70% yield from hanging weight, 45% yield from live weight
- **Boneless 315 lbs -** 50% yield from hanging weight, 31% yield from live weight
  - Chuck 29%
  - Round 22%
  - Loin 16%
  - Rib 9%
  - Plate 9%
  - Flank 5%
  - Brisket 4%
  - Shank 3%
  - Offal 3%

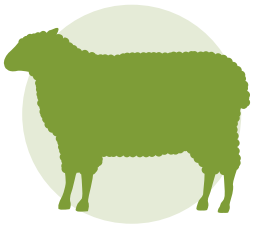


PORK

300 lbs Pig, live weight

210 lbs hanging weight, dressed skin on- 70% yield (30% loss)

- **Bone in 160 lbs** - 76% yield from hanging weight 53% yield from live weight
- **Boneless 140 lbs** - 66% yield from hanging weight, 46% yield from live weight
  - Fresh Hams 20%
  - Pork Loin 16%
  - Belly 16%
  - Spareribs 4%
  - Boston Butt 6%
  - Fresh Picnic 8%
  - Trotter (feet) 2%
  - Head 3%
  - Back Fat 16%
  - Misc. Trim 5%
  - Jowl 2%
  - Offal 2%



LAMB

90 lbs Lamb, live weight

45 lbs hanging weight, dressed 50% yield

- **Bone in 34 lbs** - 75% yield from hanging weight, 37% yield from live weight
- **Boneless 24 lbs** - 55% yield from hanging weight, 26% yield from live weight
  - Shoulder 23%
  - Rack 15%
  - Loin 12%
  - Leg 33%
  - Foreshank and Breast 12%
  - Offal 5%

Clockwise from left: Christian Stovall with Dan Carr at Hidden Mountain Farm; Ruby Duke of Raven & Boar Farm *(photo by Wade Dunstan)*; Katie Adkins of Plymouth Meats.

Other Resources

fsis.usda.gov/inspection/compliance-guidance/small-very-small-plant-guidance

goodmeatbreakdown.org

meatsuite.com

United States Department of Agriculture
National Institute of Food and Agriculture

NORTHEAST EXTENSION RISK MANAGEMENT EDUCATION

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