



Institute of Agriculture and Natural Resources

**UNL BEEF**

SATURDAY, AUGUST 1, 2020

# How Many Pounds of Meat Can We Expect From A Beef Animal?

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This article discusses how to estimate how much meat you will receive when purchasing an animal to harvest. Photo credit Troy Walz.

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Consumers who buy a live animal from a local cattle producer or 4-H member for custom processing are often surprised by the amount of beef they receive, the amount of freezer space needed and that they did not get back the entire live weight of the animal in retail cuts. This article will discuss how to estimate how much meat you will receive when purchasing an animal to harvest.

Dressing Percentage is an important term to remember as it represents the portion of the live animal weight that transfers to the hot carcass weight.

Dressing percentage is calculated as: (hot carcass weight ÷ the live weight) x 100.

The hot carcass weight (HCW) is the weight of the unchilled carcass in pounds after the head, hide and internal organs have been removed. For most fed cattle, the HCW will be approximately 60 to 64 percent of live animal harvest weight. For example, a 1400-pound animal with a hot carcass weight of 880 pounds has a dressing percentage of approximately 63%, which is calculated as follows:

$$(880 \text{ hot carcass weight} \div 1400\text{-pound live weight}) \times 100 = 63\%.$$

It is not uncommon for the buyer of a live animal to question, “The dressing percentage of my 1400-pound steer was 63% but I only got 550 pounds of meat – where is the rest of my meat?” The calculation of dressing percentage is based on hot carcass weight. The hot carcass weight includes bones, excess fat and moisture loss that will not be packed and wrapped for home consumption. The hot carcass weight is not the actual amount of meat that the consumer will put in his or her freezer.

Many factors can affect the dressing percentage. Anything that adds weight to the live animal but does not appear on the carcass will lower the dressing percentage. Factors that might add to the live animal weight but not be included in the hot carcass weight include:

- Hide
- Horns
- Pregnancy
- Mud and/or manure on the hide
- Gut fill

All beef animals are not created equal. Therefore, the dressing percentage is not consistent from one animal to another. Some of the primary factors that influence the dressing percentage include breed of the animal (dairy vs beef), live weight and how it was finished (grain fed or grass fed). The table below shows the relative dressing percentage for various types of beef animals and background conditions.

Average Dressing Percentage for Various Types of Cattle	
Type/Condition of Beef Animal	Relative Dressing Percentage
Traditional Feedlot Beef Type	62 -64%
Restricted Feed Prior to Weighing	Higher
Cattle Weighed Without Gut Fill	Higher
Over-finished (fat) Beef Type	Higher
Under-finished (thin) Beef Type	Lower
Grass Finished	Lower
Dairy Type	Lower

Pregnant Heifer	Lower
Mature Cow	Lower
Cattle Weighed with Gut Fill	Lower
Source: How Much Meat to Expect from a Beef Carcass, University of Tennessee Extension PB1829	

A beef carcass is composed of 70 to 75% water. As it is chilled, water evaporation will cause the carcass weight to decrease. It is not uncommon for a chilled carcass to weigh 2 to 5% less than the hot carcass. That means our example 880-pound carcass could lose nearly 40 pounds during chilling solely due to water loss by evaporation!

After a carcass is cooled, it will be further processed into the retail cuts you bring home. The carcass is split in half, and further separated into “primal” (or wholesale) cuts. This process is referred to as “breaking down the carcass or fabrication.” Beef primal cuts in the front-quarter include the rib, chuck, shank, brisket, and plate; while the hind quarter is composed of the flank, round and loin (short loin and sirloin). The table below shows the typical weights and percent of a carcass of various primals from an 880 lb. carcass.

Wholesale cut	Pounds	Percent of carcass
Chuck	236	26.8
Rib	84.5	9.6
Brisket	33.5	3.8
Shank	27.4	3.1
Short Plate	73	8.3
Flank	45.75	5.2%

Round	197	22.4
Loin	151.4	17.2
Hanging tender, kidney fat & cutting losses	31.7	3.6
Total	880	100%
Source: How Much Meat to Expect from a Beef Carcass, University of Tennessee Extension PB1829		

Wholesale or primal meat cuts will be further processed into sub-primals or retail cuts. The basic concept of fabricating beef retail cuts is to separate tender muscles from less tender muscles, thick muscles from thin muscles and fat from lean portions. What remains when bone and fat are removed is referred to as yield, or the percent of boneless, closely trimmed retail cuts. For example, according to the National Cattlemen's Beef Association publication entitled "Beef Cut: Primal and Sub primal Weights and Yields," the round typically makes up 22% of the hot carcass weight. For an 880 – pound carcass, the round would be approximately 194 pounds. About 20 percent of that weight is made up of fat and bone. This leaves approximately 155 pounds of meat, including steaks, roasts, and ground product, that will be packaged for consumption.

Factors that affect yield of retail cuts include:

- Carcass Fat – External carcass fat, or backfat, has the greatest impact on the percent of retail product from a carcass. As more fat is trimmed away from the retail cuts, less weight will be included in the final packaged product; thus, a lower percentage of retail cuts.
- Carcass Muscularity – Superior carcass muscling can increase the yield of a carcass. Dairy – type animals with lower lean-to-bone ratios typically yield lower than beef type animals.
- Cutting style or cutting directions given to the processor can affect carcass yield. For instance, the amount of bone-in versus boneless cuts, trimming of retail cuts and the percent of fat of the ground beef will affect retail yield.



- Aging – the two major advantages of aging meat are improvement in tenderness and enhancement of a “beefy” flavor. A typical aging period of seven to fourteen days allows for tenderness development. Long term aging also can have a negative effect on carcass yield as it results in more weight loss from the carcass due to further moisture loss.

#### Approximate Yield of an 880 lb. Carcass

Cuts	Trim (inches)	Ground Beef		Approx. amt of freezer meat (lbs.)
		Lean (%)	Fat (%)	
Boneless steaks and roast	1/8	90	10	500
Bone-in steaks and roasts	1/4	80	20	585
Mixture of Bone -in steaks and boneless steaks and roasts	1/8	80	20	570
Boneless steaks and roasts from very fat animals	1/8	90	10	410
Boneless steaks and roasts from Holstein (dairy animal)*	1/8	90	10	465

\*A Holstein steer was used in the example to show how a light muscled animal will affect the amount of take-home product.

Source: South Dakota State University. Note estimations may vary by 25 pounds or more.

**Chuck 236 lbs. (26.8 percent of hot carcass weight)**

	Useable meat	Fat and Bone
Blade pot roast	85	
Stew or ground meat	46	
Arm pot roast	32	
Cross rib pot roast	15.3	
Boston cut	14.2	
Fat and Bone		43.5
Total	192.5	43.5

<b>Rib 85 lbs. (9.6 percent of hot carcass weight)</b>		
	Useable meat	Fat and Bone
Standing rib roast	34.8	
Rib steak	17.8	
Short ribs	6.8	
Braising Beef	4	
Ground Beef	5.1	

Fat and Bone		16.5
Total	68.5	16.5

Loin 151 lbs. (17.2 percent of hot carcass weight)		
	Useable meat	Fat and Bone
Porterhouse	26.7	
T-bone steak	13.6	
Club Steak	7.4	
Sirloin	59	
Ground beef	4.2	
Fat and Bone		40.1
Total	110.9	40.1

Round 197 lbs. (22.4 percent of hot carcass weight)		
	Useable meat	Fat and Bone
Top round (inside)	30	



Bottom round (outside)	29	
Tip	18.8	
Stew	11.8	
Rump	7	
Kabobs or cube	3	
Ground Beef	20.3	
Fat and bone		77.1
Total	119.9	77.1

Flank 46 lbs. (5.2 percent of hot carcass weight)		
	Useable meat	Fat and Bone
Flank	4.6	
Ground Beef	18.2	
Fat		23.2
Total	22.8	23.2

Plate 73 lbs. (8.3 percent of hot carcass weight)		

	Useable meat	Fat and Bone
Plate, stew, short ribs	58.4	
Fat and bone		14.6
Total	58.4	14.6

<b>Brisket &amp; Shank 61 (6.9 percent of hot carcass weight)</b>		
	Useable meat	Fat and Bone
Boneless	13.4	
Stew or ground meat	27.4	
Fat and Bone		20.2
Total	40.8	20.2

<b>Miscellaneous 31.7 lbs. (3.6 percent of hot carcass weight)</b>	
	Miscellaneous Cuts and Trim
Hanging tender, KPH fat and cutting losses	31.7

In summary, the amount of meat that is cut and wrapped for consumption will be much less than the live weight of the animal. A 1400-pound beef animal will yield a hot carcass weight of approximately 880 pounds. Once cooled, the carcass weight will be approximately 840 pounds. When deboned and trimmed, there will be approximately 570 pounds of product to fill your freezer.

It is important to remember that fat, bone and trim that is discarded from the carcass are not simply thrown away. These products are known as byproducts and can be used in various industries across the spectrum. From leather, pet food, and fertilizer to medical equipment, cosmetics and sporting equipment; the value of a harvested animal stretches far past your freezer.

It is important to understand that these numbers will vary based on many factors. Not all harvested animals weigh 1400 pounds. Some may be harvested at 1100 pounds and some at 1500+ pounds. Some animals may be dairy type and others may be beef type. Some may be grass finished and some may be grain finished. All these factors contribute to how much meat you take home.

When deciding to purchase an animal for harvest, keep in mind the space you have available for safe and effective storage. A quarter of beef takes an approximately 4.5 cu. ft. of chest freezer or a 5.5 cu. ft. upright freezer. A side (half), requires around 8 cu. ft. of space, while a whole beef will need 16 cu. ft.

To summarize: A 1,400-pound steer, one-half inch fat, average muscling, yields an 880-pound carcass. The 880-pound carcass yields approximately:

- 570 pounds boneless trimmed beef;
- 280 pounds fat trim and bone;
- 32 pounds of kidney, pelvic, and heart (KPH) fat, trim loss and carcass shrink.

**Sources:**

Preparing to buy a Quarter of Beef, University of Minnesota Extension  
Beef Cuts Primal & Subprimal Weights and Yields Cattlemen's Beef Board and National Cattlemen's Beef Association.

How Much Meat To Expect From a Beef Carcass University of Tennessee Extension Publication 1822

How Much Meat Can You Expect from a Fed Steer, South Dakota State University

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