



Beef Math and Questions

Road 39 Ranch

Mancos, Colorado

970-707-3020

Meat@road39ranch.com



Dear Customer,

The information here is intending to answer the questions we often get regarding the purchase and pricing of buying a “whole” or “half” cow. There are a lot of questions people have or at least should have before they buy a cow. We approached this in the form of frequently asked questions. If you don't want to read the whole article, you can simply review the questions. Food is expensive, and buying quality meat is expensive. Buying a whole cow for your freezer is a big expense. Hopefully, this will help you understand what to expect.

Road 39 Ranch is a working Hay and Cattle Farm. We also operate a USDA inspected meat processing facility on this farm. We process our own animals here and we process animals for other local ranches for sale, and for neighbors that raise animals for their own use. We sell our animals as whole or half but also offer box beef in beef cuts like you would find in the grocery store or online.



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What does buying a whole cow mean?

How is the cow priced?

How much meat do I get from a cow?

Buying a whole cow means you are buying an entire beef. If you buy from Road 39 Ranch you are buying one of the cows we have raised, and we will process it on site. If you are buying from a rancher and they are delivering it to us for processing, we are the processor. If you buy a cow from us, we will quote you a price per pound on the hanging weight of the animal that includes the animal and standard processing. If you buy from another rancher, you pay them for the animal and either you or the rancher pays us for the processing charges. The hanging weight of an animal is also called the carcass weight, or sometimes the hot carcass weight. It is the carcass immediately after the skin, head, entrails, hide, etc. are removed. The carcass will hang in an aging cooler for 14 days before it is cut into the meat you bring home. This carcass is a percentage of the live weight of the cow. Usually, 60% to 67% of the live weight. This represents the edible portion before processing. During ageing, called dry ageing, some moisture evaporates, and the weight of the carcass is reduced. If you choose to keep all the cuts of the meat to be bone-in, and elected to have no fat trimmed, your actual take home meat would be very close to the carcass weight. About 93% of the hot carcass weight. Normally though, the excess fat is trimmed, dry thin pieces from the edges are trimmed, connective tissue, and bones with very little meat are all removed. Additionally, you will likely choose many cuts to be boneless. From the trim the fat is retained for ground beef but usually to make the beef 85% to 95% lean so much of the fat is thrown away.

So, buying a whole cow means you get the entire cow, usually around 1200lbs, after the inedible parts are removed you have a whole cow carcass of about 756 lbs., this is the weight you pay processing fees on. You get to select the types of cuts, whether the cuts are boneless or bone in, the thickness of steaks, the size of roasts etc. Based on those choices the carcass is cut and packaged then frozen. The weight of cuts depends on your choices but is usually around 60% to 70% of the carcass weight. That is 491 lbs.

So, buying a whole 1200lb. cow yields about 491lbs of packaged cut meat to put in your freezer.



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**Example
Whole Cow**

**1200 lb
Angus Steer**

**Example
Half Cow**

**1200 lb
Angus Steer**



**756 lb
Carcass Weight**



**756 lb / 2
378 lb
½ Carcass Weight**



**491 lb
Packaged Beef
Cuts**



**491 lb / 2
245 lb
½ Packaged Beef
Cuts**





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Are all butcher cattle the same weight? No, we use the example of 1200 lb. steer because that is the target weight we use. Depending on whether the animal is a cow, a steer, or bull. What age, what breed, what it has been eating- can all effect the weight of the live animal. Most animals are between 1000 lbs. live weight and 1600 lbs. live weight when they are brought in for harvest.

Is the Carcass weight always the same percentage of the live weight? No. What breed, and the sex of the animal impact the carcass weight. Some breeds are tall and have bigger bone structure. Some breeds have heavier hides, and horns. Some animals may have very full stomachs. All of these can change the percentage of the carcass yield. In general, though, it usually falls in the range of 60% to 67% . *(Based on that percentage range, live weight to carcass weight could be an 84 lb. difference.)*

Is the weight of the cuts always the same percentage of the carcass weight? No. There are many things that impact this. If you choose all bone in cuts or boneless cuts the weight of all the bones is not included. If you decide not to take the organ meat (heart, tongue, liver, sweet breads), or other cuts like ox-tail, soup bones. Those choices decide how much weight gets put into wrappers. In some cases, some of the organ meat might not be available due to the inspections process. USDA inspectors can decide to reject the organs and they then can't be provided.



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What impact does Fat have on carcass weight and the weight of cuts? The amount and type of fat plays a big part in the final weight of the meat. If an animal enjoys a good diet over its entire life, then fat is intermixed with the muscle, if the animal is harvested at the right time. This is the marbling fat. Some breeds like Angus and Wagyu are known for this trait. Grass fed beef are known to be slightly leaner for the same age compared to grain supplemented animals. This marbling fat is part of the meat cuts. Other fat like the fat around the internal organs or excess fat covering the carcass is usually cut off during the processing. Animals that have a lot of this fat yield less in the wrapper, than properly fed and aged animals.

Does the processing effect the weight of the cuts?

Yes. For example, the amount of fat that is included in the ground beef impacts the weight. More fat in the burger yields more weight of burger, but generally speaking burger that has more than 15% fat content is not desirable. For example: the difference between 85% burger and 93% burger on 200 lbs. is 16lbs. In addition, Road 39 Ranch processes the trim on steaks and roasts to be prep ready – this means we do not leave extra fat on requiring it to be removed before cooking.



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Is buying a whole or half cow the best way to buy beef? That depends. Are you buying beef to:

- Get the best price?
- Get a particular type of beef?
- Get the cuts made a particular way?
- Get local animals, or animals raised a certain way?
- Get the freshest product?

These and many other questions go into this decision. If you want the absolute lowest price the grocery store specials and sales will usually be cheaper in total. But if you want to know where your beef comes from and want to have the cuts made a certain way, or want a particular breed or feeding plan, then buying from a rancher and having that beef processed is a good way.

The most important questions we ask customers when they are thinking about buying a whole beef is:

Do you eat all the cuts you get in a whole cow? If you only eat steaks and burger then you will end up with a lot of cuts in the bottom of your freezer. If you like to cook roasts, stews, steaks, if you like short ribs and brisket then buying a whole or half is cost effective and fun.

How much beef do you eat? If you have a big family or cook a lot of beef at home, then a whole beef makes sense. (If you end up with 450 lbs. of beef in cuts and you allow 1 lb. of beef per day for a two-person household and you eat beef every day you have 450 days of beef. For a family of 4 that would be 225 days eating beef every day. If you ate it 3 days per week that would be 75 weeks of meals)



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What is the ratio of cuts you get in a whole beef?

This question is the most confusing of them all. (*It would be nice if you like T-bone Steak to get your whole cow cut into T-bone Steaks.*) The ratio of cuts comes from where on the cow the cuts come from.

In general terms:

From the **491 lbs.** of cuts available in the 1200 lb. steer you harvest you get.

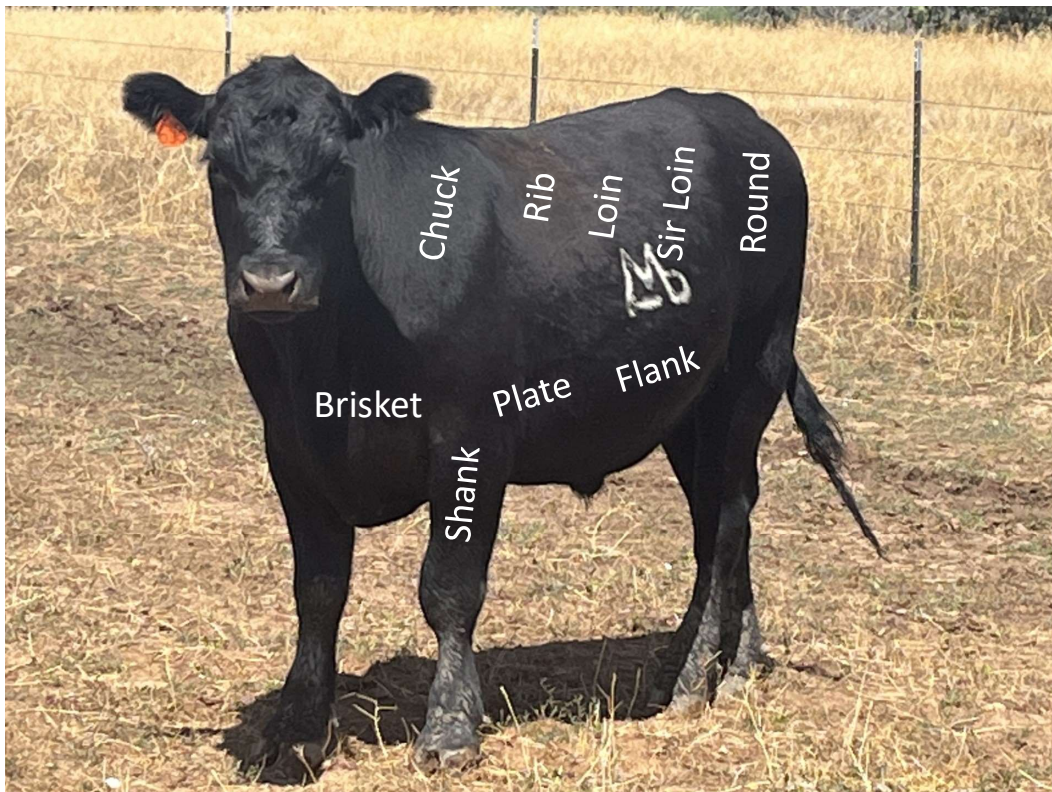
About 78 lbs. of Rib and Loin Steaks

About 88 lbs. of Chuck Roasts and Steaks

About 84 lbs. of Round Roasts and Steaks

About 49 lbs. of "other" cuts (Brisket, soup bones, Osso Buco, Ox tail, organs)

About 192 lbs. of stew meat and burger.



**Chuck 28% , Rib 12%, Loin 9%, Sirloin 7%, Round 25%,
Brisket 5%, Shank 3%, Plate 6%, Flank 5%**

These are all approximate numbers to give a concept of the meat total not including organs



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How much freezer room does it take to store a whole cow? Of course, it depends on the size of the cow. In general terms we recommend 15 cubic ft of freezer space per cow. Chest freezers are the most efficient since gravity works for you. Vertical freezers require you are good at stacking. The rule in general is about 1 cubic foot for every 40 lbs. of wrapped beef.

What is the best way to package the cuts?

Obviously, this is an opinion since many materials suppliers and butchers will have their own recommendations. Road 39 Ranch uses a heavy plastic wrap directly on the meat and then wraps in freezer paper. We think this is the best long-term way to package. The plastic keeps the air from getting to the meat which prevents freezer burn, the freezer paper protects the plastic. We also offer vacuum packaging. In theory vacuum packaging is better and it has the benefit of being able to see the meat which is great if you are reselling the beef. But the bone-in cuts can pierce the plastic as can simply dropping the frozen meat on a hard surface, completely ruining the seal. In addition, frozen vacuum-packed cuts are nearly impossible to stack without sliding and falling.





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How long is the meat good for? We won't attempt to answer this directly since the definition of good is subjective. The USDA website states:

Frozen beef will be safe indefinitely... For more food safety information, you can call the USDA's Meat and Poultry Hotline toll-free 1-888-674-6854 between 10:00 am and 6:00 pm EST or e-mail: mph hotline@usda.gov

At Road 39 Ranch, we have found that properly wrapped beef retains good look and flavor for a very long time. We believe the key is to freeze the beef as soon as possible. That is why immediately after cutting and packaging we freeze the beef by placing it in plastic baskets to allow good airflow and quick freezing. Then the meat is packaged in new boxes only after it is frozen.

If you buy a whole cow, it is very likely that some portion of the meat you eat will be well over 12 months old. Our experience has been that properly wrapped and frozen beef retains taste and quality for a very long time.

No matter the season beef is good food.

