

Grass-Fed Beef versus Grain-Fed Beef

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If you've wondered about grass-fed beef, here's the skinny on price, quality, taste, and cooking. By Kim Cross

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A large herd's worth of beef cattle has passed through the *Cooking Light* Test Kitchen over the past 24 years, almost all of it standard-issue, grain-fed supermarket meat. But with beef, as with everything in the American diet, change is afoot. Shoppers are seeing more and more grass-fed beef in regular grocery stores, along with meat from breeds marketed as special (like Angus), and meat from organically raised animals. The local/sustainable movement has been singing the praises of the grass-fed cow, while the grain-fed industry has been under attack by food activists. The grass-fed cow, which eats from a pasture and is not "finished" on a diet of grains and supplements for rapid weight gain, is said by its promoters to be better for the planet (less energy goes into growing grass than grain); better for the beef eater (less overall fat, and more omega-3s and other "good" fats); and better for the cow (critics decry feedlot practices as inhumane). In this article, though, we're looking not at meat politics but at three things that most cooks are acutely interested in: price, taste, and nutrition.

Price may be the first thing you have noticed about grass-fed beef: In supermarkets, small-production, grass-fed meat can be a lot more expensive than your average grain-fed beef, just as artisanal cheese costs more than industrial cheddar. But the cook will notice that the meat often looks different, too—sometimes a lot darker, often with less of the coveted fat-marbling you see in the highest-grade grain-fed meat.

To dive into the subject, we bought half a cow. Specifically, we bought half of a 648-pound Brangus cow, pasture-raised by Alabama farmer Melissa Boutwell, who is pretty local: She works about 175 miles from our main editorial offices.

Boutwell Farms supplies regional restaurants, which have included James Beard Award–winning Chef Frank Stitt's restaurants in Birmingham.

We talked to Boutwell about her husbandry. We saw our meat through the butchering process, took delivery of 243 pounds of meat (plus bones) cut to our specifications, and conducted blind tastings in our Test Kitchen. We learned that we could dodge supermarket prices by buying in bulk: Our cost per pound of Boutwell's beef was \$5.32, including everything from ground beef to liver to filet mignon, which made it only marginally higher than similar quantities of regular grain-fed beef prices in local supermarkets, and a lot less than we would have paid for premium grass-fed or grain-fed meat.



How our half-cow broke down: we got 42% of our meat in cuts suitable for roasting or for braising, 21% was good for sautéing or grilling, and 37% was ground. We also got bones and offal.

As for nutrition, we put fat-content claims to the test by sending some of our finest grass-fed steaks for nutritional analysis, along with supermarket and specialty grain-fed cuts.

And on the matter of taste, we confirmed that grass-fed beef can be delicious and versatile but, if it comes from a lean cow like the one we bought, requires careful cooking lest the extra effort of buying it go to waste on the plate. (We're still cooking our way through steaks, ground beef, chuck, roasts, and ribs, plus bones and organs, and we will provide beef recipes from our grass-fed project as the year goes on.)

Buying beef directly from farmers not only is a logical next step in the "buy local" movement but also harkens back to the way many of our parents or grandparents bought meat. All you need is to do some digging for local suppliers and buy a good-sized freezer for the supply ([find our primer on sourcing and buying](#)). Some readers are already doing it, as we learned after putting the word out on [Facebook](#), and one benefit of bulk buying is that it obliges the cook to experiment and enjoy less familiar cuts of meat.

"Purchasing a quarter cow was very educational," says *Cooking Light* reader Julie Lineberger. "I had never even cooked a roast, and now I am comfortable with roasts, brisket, and all sorts of cuts."

Of course, most cooks won't want to buy a whole grass-fed cow or even a half-cow. One option is to "cow-pool" with curious friends. Another is to turn to a CSA, or community-supported agriculture group. CSAs have been popping up like mushrooms in many cities, and many deliver quantities of meat on a weekly or monthly basis.

The Skinny on Grass-Fed Beef

As we stood at the checkout at a Publix supermarket with some grass-fed cuts, a young checkout clerk asked, "So, what *is* grass-fed beef?" Hearing the short answer—meat from cows that eat only grass—he looked surprised. "I thought all cows just ate grass."

All cows do graze on pasture for the first six months to a year of their lives, but most finish at a feedlot on a concentrated mix of corn, soy, grains, and other supplements, plus hormones and antibiotics. This growth-spurt formula is the backbone of a hugely productive U.S. beef industry. A feedlot cow can grow to slaughter weight up to a year faster than a cow fed only forage, grass, and hay. "That's one year that you don't have to feed the cows in the feedlot," notes [Eatwild.com](#) founder Jo Robinson, who spent the past decade examining scientific research comparing grass-fed and grain-fed animals. "Conventional factory meat is so cheap because they've done everything to speed growth and lower the cost of feed."

The feedlot process not only speeds the animal to slaughter weight but also enhances fat marbling, which is one factor that determines a cut of beef's USDA rating—the more fat within the red meat, the richer the taste, the higher the grade. Most supermarket beef is Choice, which is one step below Prime, the top grade typically found in steak houses.

Boosting fat levels changes the nutritional composition of the meat, of course, and, from a health point of view, not for the better. A study by researchers at California State University in Chico examined three decades of research and found that beef from pasture-raised cows fits more closely into goals for a diet lower in saturated fat and higher in "good fats" and other beneficial nutrients. Grass-fed beef is lower in calories, contains more healthy omega-3 fats, more vitamins A and E, higher levels of antioxidants, and up to seven times the beta-carotene.

Skeptics such as Chris Raines, a professor of meat science at Penn State, say the benefits of the different fat profiles are overblown: "Some people get very excited about the fatty-acid profile of grass-fed beef. Then, in the same breath, they'll talk about how wonderfully lean it is. We're talking up the good fats that aren't really there."

The National Cattlemen's Beef Association, which says it supports all forms of beef production, echoes this much-ado-about-not-much theme. Shalene McNeill, who has a PhD in human nutrition and is Executive Director for Human Nutrition Research at the association, acknowledges that "if you feed (cows) grass, you can slightly increase the omega-3 content, but if you look at it in terms of a whole diet, it's not a significant advantage to human health." Ditto, McNeill says, for some other "good" nutrients.

Yet a 6-ounce grass-fed beef tenderloin may have 92 fewer calories than the same cut from a grain-fed cow. "If you eat a typical amount of beef per year," Robinson points out in *Pasture Perfect*, a book about the benefits of pasture-raised animals, "which in the United States is about 67 pounds, switching to grass-fed beef will save you 16,642 calories a year." It would also, if you paid supermarket prices and dined on tenderloin, cost you about \$300 more.

Despite an uptick in consumer demand for grass-fed beef, the market is still relatively small—possibly less than 3% of all U.S. beef sales. And while the number of U.S. grass-fed beef producers is rising—from 50 in 2002 to more than 2,000 today—they face big challenges, including higher operating costs, a shortage of processors, loose standards for the definition of "grass-fed," a lack of consistent quality, and consumer wariness about taste and texture.

Meeting the Meat

Standing in a meat locker among a small crowd of hanging beef sides at a family-run abattoir, we learned some lessons about beef from a guy with an 8-inch knife and a rancher who was wearing eye shadow. Melissa Boutwell, the rancher, practices rotational grazing with the deliberate precision of an industrial process engineer. She had offered to let us choose our half-cow in person. Bill Towson, the butcher and owner of the family-run Towson Fine Meats in Tifton, Georgia, agreed to let us watch his team cut up Boutwell's cow to fit our specifications.

Towson made a clean slice between the 12th and 13th ribs of an Angus cow and a Brangus (an Angus-Brahman hybrid), two grass-fed cows raised in identical conditions. "USDA inspectors use this single cut to determine the grade of the entire cow," said Boutwell, who raised both of these animals. Delicate veins of fat running through the meat play a critical role in flavor and grade. It was easy to see the difference in the exposed rib eyes: The Angus had more marbling compared to the superlean Brangus. Next to our Brangus carcass was a much scrawnier specimen that had little fat and whose meat had the dried-out look of jerky.

Another lesson, then, about grass-fed beef: It's not only about the grass, but also the breed, and the cow.

We were looking for a lower-fat cow, so we chose the Brangus. Though lean, it was still blanketed with a jacket of fat that would play a flavor role in the evolution of the meat. The fat would mostly get trimmed away during the butchering, but before then it would protect the meat during the dry-aging period, usually 10 to 14 days, in which the carcass hangs in a cold locker while natural enzymes break down tough muscle fiber and tenderize the meat. It's worth noting that although the best steak-house steaks are dry-aged, most supermarket beef is wet-aged in a plastic vacuum-sealed bag that prevents shrinkage but also precludes the concentration of beefy flavor that occurs with water loss. The amount of fat cover also determines how much is available to go into the ground beef—which we ordered in 85/15 and 90/10 meat-to-fat ratios.

The fat on our grass-fed cow looked different from the fat we have been accustomed to cooking. Compared to the bright, white fat of conventional beef, grass-fed fat is often yellower, stemming from the higher levels of beta-carotene. And as we would learn, the quantity and the quality of our cow's fat would play a key role in cooking.

The Bottom Line: Taste and Tenderness

Our Test Kitchen experimented with various cuts of grass-fed beef, both from our Brangus cow and from local supermarkets. The meat had good, clean beefy flavor but tended to be a lot chewier than we were used to, and sometimes drier. There can be such a thing as too lean in beef cuts that are conventionally fairly high in fat, like strip steaks and other luxury cuts. Adjustments had to be made for these steaks, which were producing less fat in the pan than we were used to and could turn tough.

"Fat is an insulator," says Deborah Krasner, author of *Good Meat*, the first major cookbook dedicated to sustainable meats. "So if you cook something that's very fatty, and you cook it badly, it's still going to taste pretty good because fat insulates the meat. When you have leaner meat, you don't have that safety net, so you have to cook it carefully." Cook with care, or chew like crazy, basically.

"Carefully" means that tougher cuts like short ribs or brisket require the very-low-and-slow approach—long cooking at low temperatures. But it means cooking a tender steak more aggressively than you might be used to for such a pricey cut. We decided to really turn up the heat on a thick, 12-ounce grass-fed New York strip purchased at Whole Foods, preheating a cast-iron pan on high, turning on the fan, and nearly smoking out the kitchen when the meat hit the metal. Testers were coughing and shaking their heads as the vent fans roared. After a billowing three-minute sear on each side, there was very little fat in the pan. Previous tests suggested that the meat, though good, would lack the buttery deliciousness many of us like in this rare treat. Recipe tester Robin Bashinsky turned down the heat and began basting the steak with two pats of butter (see [Pan-Seared Strip Steak recipe](#)). When done, the meat got a short rest under foil and then was sliced; it was perfectly medium-rare within.

Could a grass-fed cut, with its lower-fat content, rival a grain-fed cut? Yes: It was succulent, buttery, and robust, with a perfectly caramelized crust. The juices formed a simple, rich sauce.

But is this a paradoxical way to cook a steak bought in part for its lean fat profile—adding butter to "beef" up the flavor? (After all, grass-fed fans suggest it just takes time to come to love what Deborah Krasner calls "meatier, purer, more mineral" flavors.) Not necessarily. First, most of the butter does not cling to the beef, so we estimate the process adds less than half a gram of saturated fat to the final meat. (If you use the pan juices as a sauce, more is added, but total saturated fat for a serving is still only 4.4 grams.) Second, a cook may have bought grass-fed meat for many reasons—ecological, ethical, or to support local businesses—but still desires a hit of full-on steak-house flavor now and then.

As we tasted more beef, however, we found that there aren't clear-cut, consistent taste differences between grass-fed and grain-fed meat. This emerged after a blind tasting of eight New York strips, cooked identically. Samples included regular supermarket beef; steak from our grass-fed cow; and meat from a variety of grass-fed and grain-fed animals of different breeds raised in different states. The latter came from a "Discover Beef" tasting pack from The Artisan Beef Institute in Santa Rosa, California, whose founder, Carrie Oliver, applies the wine-tasting model to meats.

Our testers liked several samples but discovered no universal preference for grass-fed or grain-fed, finding various degrees of beefiness and juiciness across the samples. Beef really is like cheese or tomatoes or any other food: The proof is in the pudding, not in claims about the pudding. The cook needs to explore and sample with an open mind. But this is good: However the politics of beef resolve themselves, the move from industrial production toward more emphasis on breeds, feed, care, and provenance will present the American cook with more choice, more variety—and more pleasures in the kitchen and on the plate.

Kim Cross | *From the April 2011 Issue*