

TO YOUR HEALTH

Is Grass-Fed & Finished Beef Really Better for You?

There are many claims about the superior health qualities of pastured meat products, including wild fish (not “farmed” or corn-fed). Research indicates that animals raised on natural forage translates into meat with higher levels of Omega 3 fatty acids (the good ones), lower levels of Omega 6’s (the bad ones), and a better over all ratio of 6’s to 3’s (the best situation).

We have read and seen compelling presentations by meat scientists that indicate that corn feeding reduces the nutritional benefits of those meats touted as healthy -- even fish!

Research also indicates that grass-fed cattle are less likely to harbor the strain of E.coli bacteria O157:H7 that causes a deadly hemorrhagic colitis/hemolytic uremic syndrome. A grain-rich diet alters the biochemistry of the bovine digestive system to create an environment more conducive to the growth of the deadly strain of E. coli. (Note: all mammals, including humans, will have common E.coli as part of their normal digestive system microflora. Grass-feeding is NOT a guarantee against E.coli.)

Grass diets also provide much higher levels of beta carotenes than do corn diets. You may notice a more yellow tinge to the fat in this beef, which is because of the higher beta carotene content. Beta carotene (Vit. A precursor) is responsible for the orange color of carrots, for example. This is the same principle as eggs from “free-range” chickens. Those yolks are more orange, as compared to light yellow yolks from confinement chickens fed corn.

What We Do Know

Despite the preliminary findings, the jury is still out on whether “grass-fed beef is really better for you.” Some feel that the benefits of the Omega-3 fatty acids are negligible; however, research we saw presented in October 2009 by Clemson University meat scientist Susan Duckett made a strong case for grass-fed beef in a lineup against a wide variety of other meats, from farmed salmon to chicken and grain-fed beef.

In addition, 2006 research from Australia showed a marked loss of omega-3 fatty acid content after even short term grain feeding. One fact that most of the research does seem to agree upon is that the Omega 6: Omega 3 fatty acid ratio in the diet should be 5:1 or less and that the typical American diet often averages upwards to 15:1 (O6:O3) ratio.

Of course, here’s what we do know: our beef is free of added hormones and preventive antibiotics (and when necessary to treat an animal for sickness, it is removed from our beef sale program). Our grasses are not treated with pesticides or herbicides.



Here’s the other fact about our beef, and what we love most: *it is low in fat*. In May of 2013, we submitted one pound of ground meat from each of 6 different grass fed/finished steers processed over the course of a year to Dr. Liz Boyle, meat science specialist at Kansas State University for nutritional testing.

Displayed below is the standard nutritional label generated by Dr. Boyle from the results of that testing. The nutritional tests performed also included a complete analysis of both Omega 6 and Omega 3 long chain fatty acids. While that information is not part of a standard nutritional label, Dr. Boyle did provide us those results in her report.

Great news! A 100 gram serving of our grass fed ground beef provides a ratio of 3:1 omega 6 to omega 3 fatty acids, less than the recommended maximum of 5:1 and significantly less than the typical American diet of 15:1.

Grass-fed beef is perhaps more similar to other grazed meats that are touted for their lean health benefits (Elk, buffalo) than to their grain-fed counterparts. Diabetes runs in our family, so we must take our weight and our diet very seriously -- which, ideally, means a diet rich in lean protein and fresh vegetables, and low in starches and carbohydrates.

Mettenburg Farms Ground Beef
5/17/2013

Nutrition Facts	
Serving Size 4 oz (raw) (100g)	
Servings Per Container Varied	
Amount Per Serving	
Calories 160 Calories from Fat 70	
% Daily Value*	
Total Fat 8g	12%
Saturated Fat 3g	15%
Trans Fat —g	
Cholesterol 60mg	20%
Sodium 60mg	3%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 0g	
Protein 21g	
Vitamin A 0%	• Vitamin C 0%
Calcium 0%	• Iron 10%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

We find our grass-fed beef suits this dietary goal perfectly. Here in the Midwest, it makes little sense to base a diet on corn-fed fish that's trucked in from God knows where, when we have acres upon acres of luscious grasses that grazing animals can convert into the Perfect Food. (Well, we think it's perfect.)

We feel that the low-fat, high-water-content of our beef is positive for our health, and contributes to a cleaner mouth-feel of the meat, but can make it more challenging to cook! We hope this cookbook can help you along the learning curve of working with grass-fed meats.

A Little More About Corn

As mentioned above, USDA labels are based on fat content – prime being the highest fat content, choice the next and so on. These labels were developed when grain feeding became popular in the 1940's.

It is possible to reach “choice or prime” with grass feeding. However, it is less likely, and in our estimation not necessarily desirable.

Compare corn feeding outcomes in cattle to “corn” feeding of humans. Humans who consume a high level of corn-based carbohydrate with a sedentary lifestyle (like a steer in a feed-lot) tend to become more obese than the human who must walk a lot and who eats more fiber and complex carbohydrates (like the steer who must walk over a pasture eating grass).

The active individual, bovine or man, develops more lean muscle. (Muscle = meat; fat = more waste and trim.) For a whole lot of reasons, we prefer the meat to the fat!

Sources

From J Animal Science 80(5): 1202-11, 2002 and J Meat Science 2005:70:35-44

• Lower in total fat - comparable to skinless chicken breast. • Grass Fed beef fat composition is higher in omega-3 fatty acids and conjugated linoleic acid (“good

fats”) whereas grain-fed beef fat is primarily omega-6 fatty acids (necessary but “bad fats” in excess) as we & as have 3-5 times less linoleic acid. (Omega-3’s and conjugated linoleic acid are the types of fats associated with a fish and vegetable - “Mediterranean” diet). Grasses are about 60% omega-3’s (formed from photosynthesis in the green leaves). Grain has a higher content of omega-6’s because it is not formed in the green leaves of plants. • 4-5 times more Vit. E than Vit. E. supplemented grain-fed beef. Higher amounts Beta-Carotene (Vit. A precursor) and Vitamin C. • Mettenburg Farm Grass-Fed Beef Cookbook” 9

Table 1. Nutritional Differences Between Grain Fed and Grass Fed Beef. *Polyunsaturated to Saturated Fat Ratio • Source: Cordain, L. Grass Fed Beef In The Human Diet. 2007.

Nutrient

ω-3 fatty acids □ ω-6 fatty acids □ ω-6/ ω-3 ratio □ (both ω-3 and ω-6) □ Fat content □ Saturated fatty acids P/S Ratio* □ Conjugated linoleic acid Vitamin E

Vitamin C Beta carotene Protein content

Grass Grain

Higher Lower Lower Higher Lower Higher Higher Lower Lower Higher
Lower Higher Higher Lower Higher Lower Higher Lower Higher Lower
Higher Lower Higher Lower

References

(65, 76-86, 9, 88,89) □ (76, 43, 40, 13, 83, 89) (65,76,42-43,13,83-86,9,88) (65,76,43,42,13,84,85,88) (65,76,43,40,77,66,13,83,9) (65, 76, 43, 42, 40, 83) □ (65, 76, 43, 42, 40, 13, 83) (65,76,42,86) □ (81, 9) □ (9) □ (9) □ (75)

From J Dairy Science 86:852-860, 2003:

Grass-fed cattle less likely to harbor the strain of E.coli bacteria O157:H7 that causes a deadly hemorrhagic colitis/hemolytic uremic syndrome. A grain-rich diet alters the biochemistry of the bovine digestive system to create an environment more conducive to the growth of the deadly strain of E. coli. (Note: all mammals, including humans, will have common E.coli as part of their normal digestive system microflora).

Also see studies by Duckett, Susan, et.al., Clemson University.

Ponnampalam, E.N; Mann, N.J., Sinclair , A.J.; Effect of feeding systems on omega-3 fatty acids, conjugated linoleic acid and *trans* fatty acids in Australian beef cuts: potential impact on human health; *Asia Pac J Clin Nutr* 2006;15 (1):21-29

Candela,, G; Lopez, B.; Kohen, L; Importance of a balanced omega 6/omega 3 ratio for the maintenance of health: nutritional recommendations; *Nutr Hosp.* 2011 *Mar-Apr*;26(2):323-9

Blasbalg, TL; Hibbeln, JR; Ramsden, CE; Majchrzak, SF; Rawlings, RR; Changes in consumption of omega-3 and omega-6 fatty acids in the United States during the 20th century; *Am J Clin Nutr.* May 2011; 93(5): 950–962