Telling the Grass-Fed Beef Story

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Beef customers are being told many things about their food these days. The advertisements for beef products shout this product is safer, this one is healthier, this one is better for the environment, and many other claims of value. Mary Lou Quinlan, founder of the marketing company Just Ask a Woman, told attendees at the Food System Summit 2010 research conducted from January to June indicates the pressures of a bad economy, media stories about unsafe food, confusing and misleading labels and even friends questioning their food choices on Facebook all figure into their beef purchase decisions. How can a customer sort all of this out and determine the real value they want in their beef ? Many of these attributes are placed on grass-fed compared to grain-fed beef.

The reality is there is no evidence whatsoever that grass-fed beef has any advantage for safety, human health, or impact on the environment than grain-fed beef. Both types of beef deliver the important factors of nutrition in the human diet of protein, iron, and zinc in equal proportions.

On the environmental front, studies by Yan et al (2009) in Ireland used growth chambers to evaluate the greenhouse gas emissions from cattle with varying levels of forage and grain in the diet. Coupling these results with a 30% increase of harvest age of grass-fed cattle compared to grain-fed, it becomes clear there is a 500% increase in greenhouse gas emissions for each pound of beef produced from grass-fed compared to grain-fed cattle. Uncontrolled nitrogen and phosphate release to the environment, 35% more water use, and 30% more land use for grass-fed cattle compared to grain-fed increases the environmental impact of strictly grass feeding. A model reported by Canadian workers (Janzen et al, 2008) accounts for carbon loss from fossil fuels for corn production and other factors of production for both grass- and grain-fed cattle and shows the added efficiency of animal production and resource use from intensive grain feeding will reduce the collective environmental impact of grain-fed compared to grass-fed beef.

Two usual claims for grass-fed compared to grain-fed beef is the greater content of conjugated linoleic acid or CLA, which was shown to decrease tumor growth in mice in laboratory studies, and that the grass-fed product is lower in cholesterol. Cholesterol content has never been different in grass- or grain-fed beef. That is just a convenient rumor that got started. Cholesterol does not follow fat content, and foods higher in cholesterol than beef, like shellfish, eggs, and venison, often have very little fat. There are also some legal issues for false labeling of cholesterol content that can get people in trouble.

The ‘potent anti-carcinogen’ CLA story may be one of the biggest hoaxes played on the consumer because the values used to differentiate grass-fed from grain-fed beef are from raw meat. Samples of raw grass-fed beef consistently have twice the CLA content as a proportion of total fat than samples from raw grain-fed beef. This means the typical grass-fed steak has the same CLA content as a Certified Angus Beef ®, heavily grain-fed steak because there would typically be twice as much total fat in the CAB steak. However, this is all irrelevant because studies show when the meat is cooked, there is no difference in CLA content because a large amount of the fat is lost in cooking. Even if people ate the meat raw, you would have to eat 176 pounds of grass-fed beef daily to get the level fed to the mice in the original CLA study (Ha et al, 1987). It should also be noted that in the original CLA study 16 of the 20 mice getting huge doses of CLA still got cancer. The dosage of CLA from this study would have to be increased 182,000 times for an equivalent dose to an average person. The whole CLA story has been based on these 4 mice, making this result irrelevant to human health.

Similarly, the Omega-6 to Omega 3 ratio is an important feature of fat intake in humans. The recommended daily intakes of Omega:3 from the World Health Organization of 1.1 to 1.6 grams/day show it would require a person to eat 41/2 pounds of cooked grass-fed beef daily to meet the minimum daily requirement. Therefore, any speculation that eating grass-fed beef will enhance human health due to Omega:3 fatty acid consumption is clearly incomplete at best, and usually false.

Consumer science studies show food safety is important to consumers, and it is an important feature of food buying decisions. The advertisements for grass-fed beef that claim there are no chances of E. coli infection in humans from grass-fed beef are scary and dangerous, and not because this is a threat to traditional beef products. It is dangerous because it gives consumers a false sense of security. In the case of E. coli, this contamination happens in a processing plant and has nothing to do with how or where the animal was raised. Cattle in all types of environments-feedlots and pasture- have been shown to have the virulent form of E. coli in their digestive tract, and it requires the special care that is taken in beef processing plants to prevent meat contamination. It also requires consumers to use safe handling and cooking methods common to all foods for their safety, and these false claims do not diminish that need.

Grass-fed beef will usually be leaner with less fat in the edible portion than grain-fed beef, and this is due to less marbling, or the intramuscular flecks of fat measured in the ribeye steak. The conflict for beef customers and producers is that consumer studies indicate the desirable factors of tenderness, juiciness, and flavor-generally described as "quality" by consumers-are highly related to marbling content. One has to be careful what is described as 'lean' because leanness will be relative to marbling content in the edible portion of the meat. Consumers generally describe a steak as "fat" when it has a large amount of exterior or subcutaneous fat left on it. Since the consumer seldom eats this fat or it is cut off in the processing phase, little attention is given to the real source of fat in beef steaks-marbling. As the marbling content is increased, we increase the amount of saturated and other fats in the edible portion. Studies also show steaks can be too lean

because it will not be as desirable to consumers. We walk a fine line between keeping the product lean and making it a desirable eating experience. Premium grain-fed beef such as Certified Angus Beef ® must meet a high standard of marbling content, and few grass-fed cattle can meet this standard. We have no idea if the higher levels of marbling-resulting in high Choice and Prime quality grades-in grass-fed meat have a positive relationship to eating satisfaction. One small study showed it may actually be negative because of the influence on meat flavor (Steinberg, 2009).

It is very important that we have grass-fed beef as a choice for beef consumers because these are often consumers that do not buy other types of beef. However, the enterprise cannot be sustainable and engage new customers if it is based on false and misleading information. There are many other important factors for beef –buying decisions we can use to promote the grass-fed product. Locally-produced, animals raised in a pasture environment, source verification, and others are very important features of beef that consumers value. Grass-fed beef can capitalize on many of these attributes without some of the deception going on now.