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The Cornucopia Institute Position Paper on Organic Beef Finishing

And

Proposal for three-tiered labeling system for organic meat from ruminants

April 2010

Executive Summary

In February 2010, the USDA's National Organic Program released the long-awaited organic "pasture rule," specifying that ruminant livestock, such as dairy cows and beef cattle, must obtain a minimum of 30% of their feed from pasture during the grazing season.

The new rule contains an exemption for ruminant slaughter stock, such as beef cattle and bison, for a four-month period prior to slaughter—so they can be "finished" or "fattened" on a grain-based diet in feedlots. The USDA has requested comments from the public regarding this specific exemption. **Comments are due April 19th, 2010**.

In order to develop Cornucopia's position on this exemption, and gain a clearer understanding of the rule's effect on organic beef producers, Cornucopia researchers surveyed the nation's organic beef producers and reviewed previous public policy discussions on the matter.

Our survey results reveal that 83% of organic farmers and ranchers raising beef feed exclusively, or predominately, grass and hay until slaughter, and do not feel they need any exemption from grazing. The remaining 17% finish on grain and express their need and support for the exemption. Of all producers who finish beef cattle from whom we

either received a written reply or interviewed, 58% are 100% grass-fed and grass-finished, 25% finish on pasture with some grain supplementation, and 17% finish in feedlots on high-grain rations.

Rather than take a position either supporting or opposing the new rule's exemption, The Cornucopia Institute proposes a three-tiered labeling system for meat from ruminants.

The three labeling tiers would be as follows:

- "**Organic – Grain-Finished**" for producers who need an exemption from obtaining at least 30% dry matter intake from pasture.

- "**Organic – Pasture/Grain-Finished**" for those who maintain their animals on pasture and/or forage, meet the 30% dry matter intake from pasture during the grazing season, and feed supplemental grain on pasture.

- "**Organic – 100% Grass-Fed**" for those whose animals are 100% grass-fed, including forage, according to the AMS standard outlined below.

A clear labeling system would lead to greater transparency for organic consumers, and let the marketplace decide the viability of each organic production model.

The Cornucopia Institute Position Paper

Proposed three-tiered labeling system for organic meat from ruminants

In February 2010, the National Organic Program of the United States Department of Agriculture released the long-awaited organic "pasture rule," specifying that ruminant livestock animals, such as dairy cows and beef cattle, must obtain a minimum of 30% of their feed from pasture during the grazing season. The grazing season, according to the new rule, can be no less than 120 days of the year.

This new rule aims to close loopholes used by industrial-style organic livestock producers that practice what some in the organic community call "organics by substitution"—namely, operating a feedlot similar to conventional livestock agriculture and simply substituting organic feed and organic-approved herd health protocols in order to gain organic certification.

Grass-based organic farmers and ranchers, as well as many organic consumers, have long been critical of producers who confine ruminant animals to feedlots—a production system that they contend does not match the founding principles and the spirit of organics, especially since ruminant animals, such as dairy cows and beef cattle, have evolved to graze on pasture.

The new livestock/pasture rules close many loopholes in the organic dairy industry, which will ensure a level playing field for large and small-scale organic dairy producers. But instead of specifying that **all** ruminant livestock—dairy cows, beef cattle and other animals—must graze on pasture, **the new rule exempts slaughter stock, such as beef cattle and bison, for a four-month period prior to slaughter—so they can be "finished" or "fattened" on a grain-based diet.** Unlike in dairy production, where feedlots were mainly used by large-scale producers, feedlots are not uncommon for both large-scale and small-scale conventional and organic beef producers.

Indeed, some small- and medium-scale family farmers confine beef cattle to feedlots where they are given a diet that emphasizes grain during the finishing period that precedes slaughter. During this period, the animals generally do not obtain any feed directly from pasture and sometimes do not even have "access to pasture." Feeding grain in a feedlot during the finishing period speeds up growth—thereby reducing the time needed to reach slaughter weight—and changes the taste and quality of the meat to make it similar to conventional, corn-fed meat that American consumers know so well.

Since some organic producers currently finish their beef cattle on grain, the new rule's exemption for beef cattle will allow producers to continue this practice—using feedlots to feed organic grain during the last months of an organic animal's life.

The new rule allows organic producers to use "yards, feeding pads or feedlots… to provide finish feeding rations" for ruminant slaughter stock. For a period of 120 days prior to slaughter, or 1/5th of the animal's life (whichever is shorter), these animals

"shall be maintained on pasture" but "shall be exempt from the minimum 30% dry matter intake (DMI) requirement from grazing."

The USDA has requested comments from the public regarding this specific exemption. **Comments are due April 19th, 2010**.

2001 NOSB recommendation for grain finishing

The new pasture rule's exemption states that even during the finishing period, ruminant slaughter stock "shall be maintained on pasture," which may make it difficult for some organic beef producers to comply with the new rule, since they currently provide no access to pasture during the finishing period and their facilities are not contiguous to pasture. These producers, and their organic certifying agents, under the previous regulations, have used a 2001 recommendation by the National Organic Standards Board (NOSB) as their guidance.

This recommendation states that

> *The producer of bovine livestock may be allowed exemption to pasture during the following stages of production:*
>
> *a. Dairy stock under the age of 6 months*
>
> *b. Beef animals during final stage of finishing for no more than 120 days*

Note that the recommendation gives a **complete exemption from grazing on pasture** for 120 days during the finishing period. Although the NOSB standard was never adopted, many producers finishing their cattle in feedlots have established their feedlots without adjacent pasture, operating under the assumption that no "access to pasture" was required during these 120 days.

The new pasture rule and its exemption for ruminant slaughter stock are different from this 2001 recommendation in an important way: the new rule requires that animals "be maintained on pasture" during the grazing season. This is a substantial change for producers who have relied on the 2001 NOSB recommendation on a complete exemption from pasture.

Organic Beef Industry Finishing Practices

Historically, most of the beef produced in the United States until the 1940's came from cattle raised and finished on grass. The feedlot industry took off in the 1950's when bumper crops of cheap corn and other commodities, produced with agrichemicals and federal subsidies, became widely available.[i] Today, interest in grass-based livestock agriculture is growing, both among producers and consumers.

While there is much variation in production practices, three basic production models exist in the organic beef industry.

- **Grass Fed/Grain Finished**
    - Beef cattle are raised on pasture during the growing season for the first 6-10 months of their lives. Producers then move the animals to a feedlot (or sell them to a feedlot operator), where they are given organic grain and hay. Grain in their diet speeds their growth, while some amount of hay provides necessary roughage. By providing a high-energy grain diet, producers are able to bring their animals to slaughter weight in as little as 14 months. Many believe that consumers prefer meat from grain-finished cattle due to its fat marbling and tenderness.
      Proposed New Label: "Organic – Grain Finished"

- **Grass Fed/Finished on Pasture with Supplemental Grain Feeding**
    - Beef cattle are raised on pasture throughout the animal's lifespan, including the finishing period, except when pasture grazing is not possible, such as in winter. During the finishing period (the months leading up to slaughter), producers maintain their animals on pasture but bring feed, containing grain, to feeders on pasture. Animals therefore do consume grain, and could not be considered "100% grass-fed." The percentage of their diet that consists of grain is commonly low, and the finishing period is generally much shorter than 120 days.
    - **Proposed New Label: "Organic – Pasture/Grain Finished"**

- **100% Grass Fed/Grass Finished**
    - Producers provide unlimited access to pasture and feed absolutely no grain over the lifetime of the animal. When pasture grazing is not possible, as in winter, animals are given forage-based feed such as hay. It commonly takes 2-3 years to raise a grass-fed beef cow to slaughter weight, although some 100% grass-fed producers, focusing on appropriate genetics for grazing and superior forage quality, market animals as young as 18 months of age.
      Proposed New Label: "Organic – 100% Grass-Fed"

To gain a deeper understanding of the popularity of these various finishing practices among organic producers, Cornucopia researchers conducted a survey of certified organic beef producers.

Survey Results

Survey Research

Cornucopia researchers sent a questionnaire to 30% of the nation's USDA-certified beef producers, asking about their production practices and stance on the proposed

exemption.[1] Mailed or e-mailed questionnaires were followed up with a telephone call to over 100 producers, including all 66 certified organic Cornucopia members producing beef, and an additional 40 randomly chosen certified organic producers who are not Cornucopia members.

In total, we either received written replies and/or telephone interviewed 54 organic beef producers. Of these 54 producers, 48 specifically finish ruminant slaughter stock, whereas 6 were listed as beef producers because they either raise beef calves, but don't finish them, or sell culled dairy cows for hamburger meat. The 54 producers surveyed represent approximately 8% of the nation's organic beef producers.

Our survey results reveal that 83% of organic farmers and ranchers raising beef feed exclusively, or predominately, grass and hay until slaughter, and do not feel they need an exemption. The remaining 17% finish on grain and would need the exemption. Of all producers who finish beef cattle from whom we either received a written reply or interviewed, 58% are 100% grass-fed and grass-finished, 25% finish on pasture with some grain supplementation, and 17% finish in feedlots on high-grain rations. The 17% that do finish on grain in feedlots include some large industrial-scale, medium-scale and small-scale family farm operations that likely make up a high percentage of the nation's organic beef production.

When also counting the position of the surveyed beef producers who do not finish beef cattle themselves, but either raise feeder cattle or sell culled dairy cows as meat, Cornucopia found that 78% of organic beef producers oppose an exemption from grazing, or feel neutral about it, and 22% specifically support an exemption from grazing for ruminant slaughter stock.

Interviews

We interviewed numerous organic beef producers who range from selling direct to consumers to selling to the largest organic cooperative in the country. We also interviewed representatives of various organic beef producer groups, including cooperatives, privately held companies and coalitions. These groups collectively represent 271 organic beef producers, which is nearly 40% of the nation's organic beef producers.

One organic beef cooperative, representing 27 organic producers, is exclusively 100% grass-fed and its members would not need the exemption. The cooperative's administrator stated that achieving high-quality beef that grades out at Choice is possible with the "100% Grass Fed" production model.

[1] USDA's National Agricultural Statistics Service (NASS) data reports 713 certified organic farms producing beef cows. Cornucopia sent questionnaires to 206 organic beef producers, which represents approximately 1/3 of the nation's organic beef producers

The director of an organic, grass-fed beef producers' coalition believes that organic beef production and grazing should be synonymous. The coalition represents 60 members, all of which are grass-based and would not need the exemption.

A large organic cooperative that markets organic beef, pork and chicken does not have a grass-finishing policy, and members and staff of this cooperative explained during interviews that the cooperative encourages grain finishing to achieve a higher percentage of "Choice" grading in the USDA's classification system for meat (see more on "Choice" grading below). The cooperative lists 197 organic producers as producing beef, although it is unclear how many produce beef cattle versus sell their culled dairy cows for hamburger meat.

This cooperative uses the 2001 NOSB recommendation as a guide, and therefore allows feedlots without adjacent pasture for a 120-day finishing period of beef cattle. The new pasture rule and exemption, as currently written, would provide substantial hardship to many, though not all, of this cooperative's beef producers. On the other hand, several producers belonging to this cooperative explained that they do not need the exemption at all, including some that use the 100% grass fed model. Given the range of production practices used by members of this cooperative, as explained during phone interviews, it is difficult to estimate the percentage of cooperative members who would need the exemption.

A privately-held company interviewed by Cornucopia produces organic, 100% grass-fed beef that is not graded, to avoid the issue of grading "Choice," and rather focuses on marketing its meat as "healthy." According to this company, business is growing and its producers, currently numbering 14, do not need an exemption since they are all 100% grass-based until slaughter.

The New Rule's Effect on Organic Beef Producers

Eighty-three percent of surveyed certified organic beef producers use either the "100% Grass Fed" or "Grass Fed/Finished on Pasture with Grain Supplements" model. For them, the exemption is not necessary since they feel confident that their animals obtain at least 30% DMI from pasture during the grazing season.

For the 17% of beef producers who do use the "Grass Fed/Grain Finished" model, and quite likely produce a disproportionate number of the nation's cattle marketed as organic, the exemption's language and requirements would be burdensome, and would either force them to materially change their production model or force them to leave the organic beef industry. Most likely, some of the conventional feedlot operators that have diversified into organic production would be affected by the new rule.

Grain-finishing producers have pointed out the following problems with the current exemption:

- **"Ruminant slaughter stock shall be maintained on pasture for each day that the finishing period corresponds with the grazing season."**

- Producers who currently finish on grain are worried that they will not be able to comply with the "maintained on pasture" requirement. Unlike dairy cows, which habitually move back and forth between the barn/milking parlor and pasture, beef cows generally are not kept in feedlots with adjacent pasture and have not been "trained" to move on a daily basis in and out of a feedlot. Maintaining these animals on pasture, while allowing the use of a feedlot, is therefore impractical and nearly impossible in many production systems. Some feedlot operators finish cattle on contract, or purchase animals for "fattening" and do not have the facilities or inclination to become graziers.

- **"The finishing period shall not exceed 1/5th of the animal's total life"**

  - For some producers currently finishing their cattle on grain, 1/5th of the animal's life is too short. Many bring in their animals at the end of the grazing season in fall, and keep them in the feedlot until they are slaughtered in late summer or early fall of the following year. These animals spend more than 1/5th of their life, sometimes more than half of their life, inside a barn or in a feedlot.

    That said, other grain finishing producers we surveyed use much shorter finishing periods, sometimes as short as 45 days, and support the exemption as currently written.

The New Rule's Effect on Organic Beef Consumers

For many organic consumers, the *USDA Organic* seal on food packages is the gold standard of eco-labels. The term "organic" signifies a holistic approach to sustainable food production—doing what is best for the environment, farm animals, and consumers. It is a trusted label, backed by federal standards, third-party certified, and enforceable by the government. Many organic consumers, therefore, will likely be surprised and disappointed when they find out that organic beef could come from an animal that was kept in a feedlot, and given a grain-based diet, for months leading up to slaughter—virtually in an identical production environment to that of conventional cattle.

Cornucopia's Position

Since nearly one quarter of beef-producing Cornucopia members stated that they need an exemption to pasture grazing (waiving the 30% DMI requirement) in order to continue their current practice of finishing beef cattle on grain, Cornucopia is not taking a position on the exemption. We encourage organic beef producers, as well as organic consumers, to send in their personal comments to the USDA. An action alert with detailed instructions for submitting comments is available on www.cornucopia.org.

Both producers finishing on grain and producers finishing on pasture feel strongly about this rule and exemption.

On one side, some believe that grain finishing and confinement are required to meet marketplace demand, thus expanding opportunities for farmers and ranchers to convert to organic production.

Alternatively, grass-based farmers argue that grain finishing cattle, be it with organic or conventional feed, produces unhealthy cattle, meat of inferior nutritional quality, unsanitary conditions for the animals, and environmental concerns — inconsistent with common assumptions consumers have about organic animal husbandry/environmental practices.

Proposal for a Three-Tiered Labeling System

Rather than supporting or opposing the exemption, Cornucopia proposes a three-tiered labeling system for organic meat from ruminants, which would allow organic consumers to make informed decisions in the marketplace and choose either meat from grain-finished animals, meat from animals that were always pastured and grain finished, or meat from animals that were 100% grass-fed, depending on their preference.

A clear labeling system would lead to greater transparency for organic consumers, and let the marketplace decide the viability of each organic production model.

Our three-tiered labeling proposal was <u>overwhelmingly</u> supported by beef producers during informal discussions during our polling.

The three labeling tiers would be as follows:

- "Organic – Grain-Finished" for producers who need an exemption from obtaining at least 30% DMI from pasture.

- "Organic – Pasture/Grain-Finished" for those who maintain their animals on pasture and/or forage, meet the 30% DMI from pasture during the grazing season, and feed supplemental grain <u>on</u> pasture.

- "Organic – 100% Grass-Fed" for those whose animals are 100% grass-fed during the grazing season, and 100% grass and/or forage-fed outside of the grazing season, according to the AMS standard outlined below.

The current AMS standard for a "Grass-Fed" marketing claim for ruminant livestock and meat products (organic or conventional) reads as follows:

> *"Grass and forage shall be the feed source consumed for the lifetime of the ruminant animal, with the exception of milk consumed prior to weaning. The diet shall be derived solely from forage consisting of grass (annual and perennial), forbs (e.g., legumes, Brassica), browse, or cereal grain crops in the vegetative (pre-grain) state. Animals cannot be fed grain or grain byproducts and must have continuous access to pasture during the growing season. Hay, haylage, baleage, silage, crop residue*

without grain, and other roughage sources may also be included as acceptable feed sources."

We propose using this standard for the "Organic – 100% Grass Fed" label. USDA's Quality Systems Verification Program (QSVP) currently verifies this current USDA grass-fed claim through third-party audits by AMS officials, in accordance with part 62 of Title 7 of the Code of Federal Regulations. To avoid label confusion, to standardize the label for organic producers, and to prevent a surge of audit requests to the USDA's QSVP from organic producers, we propose that any organic producer be audited for the grass-fed claim by his/her current organic certifier. AMS Livestock and Seed Program officials who receive a request for the AMS grass-fed label from a certified organic producer would be instructed to immediately forward this request to the producer's organic certifier, allowing them to perform the necessary audit and verification.

Since producers are already maintaining records concerning the management of their animals, and detailing their feed consumption, little if any additional labor or expense should be necessary to administer these labeling options.

Rationale for Three-Tiered Labeling System

Benefits exist for the three production models. If meat products from ruminant animals are clearly labeled and identified according to the production model, it provides an opportunity for the consumer to make informed decisions in the marketplace regarding the model they choose to support. Rather than forcing producers to change their management model through regulation, this alternative labeling system will allow the marketplace to determine the success of each system. It also creates opportunities for producers to meet the range of organic consumer expectations.

Benefits of the Three Production Systems

"Organic – Grain-Finished"

1. Texture and Flavor

Because most American consumers have become accustomed to the texture and taste of grain-finished meat from feedlots, the conventional wisdom in the beef industry is that consumers prefer its familiar taste. Some taste panels have substantiated this belief; several trained taste panels found grass-fed beef to be less palatable than grain-fed beef in flavor and tenderness.[ii]

2. USDA grading

The USDA uses a grading system for beef, with eight beef quality grades ranging from "Prime" to "Canner." The grading system is based on two main criteria: the degree of intramuscular fat ("marbling") and maturity, or estimated age of the animal at slaughter.

The three highest grades are Prime, Choice and Select, with Prime steaks available mostly at high-end hotels and restaurants, and Choice and Select available in supermarkets. According to the grading system, Choice is considered a high quality grade, and Select is considered acceptable—leaner and therefore less tender and juicy than Choice or Prime.

Given this difference in grades, beef producers are traditionally paid more for a "Choice" animal than a "Select" animal. Conventional wisdom in the beef industry is that grain-finishing is an effective method for achieving "Choice" grading, which is why some organic producers finish on grain.

That said, some grass-based ranchers contend that achieving a competitive, high percentage of "Choice" grading is possible with 100% grass-fed animals. Other 100% grass-based producers admit that achieving the same level of Choice grades is not possible without grain supplementation, but have built successful businesses based on marketing their ungraded meat as "leaner," "lower in fat" and "healthier."

3. Quicker Production and Economic Benefits

Grain is more calorie-dense than pasture or forage, which is why grain rations lead to more rapid growth in beef cattle. A grass-fed animal generally gains 2 pounds per day when on pasture, whereas a grain-fed animal can gain as much as 4 to 5 pounds per day. Generally, a grass-fed cow commonly reaches slaughter weight in 2-3 years, although sometimes as quickly as 18 months. A grain-finished animal, on the other hand, gains weight much more rapidly and reaches slaughter weight as quickly as 14 months.

For producers, feeding on grain therefore means that animals can be sold more quickly. Waiting a couple of years for an animal to reach slaughter weight, according to some producers we interviewed, would be economically unfeasible for them.

"Organic – Pasture/Grain-Finished"

The "Organic – Pasture/Grain-Finished" label is an important one, accommodating producers who maintain their animals on pasture during the grazing season throughout the animals' lifespan, but who also benefit from feeding their animals small amounts of grain, which is brought out on pasture. Without this alternative label, many producers feel they are economically handicapped and competing with feedlot-based production.

For these producers, the small amounts of grain supplementation are very important. For some, the slightly faster growth rate during the summer and fall means they can achieve slaughter weight before weather conditions force the animals off pasture during the second year of their lives. They benefit from feeding small amounts of grain since it means that they can slaughter the animals before winter, when they might have to be brought off pasture, and their weight gain slows.

Some producers who finish on pasture with grain supplementation also stated that they are able to achieve a higher percentage of animals that grade "Choice" than they would

on 100% forage. Others, especially those selling directly to their customers, have also stated that their customers seek meat from pastured animals—for the many reasons stated under the "Organic – 100% Grass-Fed" section—but prefer the taste and texture of the meat when animals were offered some grain supplementation. These producers are responding to consumer demand, showing that the "Organic – Pasture/Grain-Finished" label is an important and viable marketplace alternative.

"Organic –100% Grass-Fed"

1. Animal Health

One substantial argument for exclusive grass and forage feeding of ruminants is that ruminants are healthier and less likely to suffer gastrointestinal problems when offered their natural diet. As advocates of 100% grass-fed meat like to point out, ruminants, after all, evolved to eat grass and are not equipped, physiologically, to digest complex carbohydrates like grain.

One animal health problem that habitually arises in feedlots, and is completely prevented when cattle remain on pasture without grain supplementation, is the gastrointestinal condition called acidosis. With acute acidosis, the acidity level and glucose levels in the animal's intestines increase markedly due to grain consumption, leading to damage to the intestinal wall and at times, other health conditions such as laminitis, polioencephalomalacia and liver abscesses.[iii] If left untreated, the condition can cause dehydration and respiratory and cardiovascular failure, which can prove to be fatal.[iv]

In conventional feedlots, producers deal with acidosis by, among other treatments, giving antibiotic feed additives, inoculating cattle with certain microbial strains, and plastic feed pellets for roughage.[v]

Treatment of routine, low-dose antibiotics is, of course, prohibited in organic production, as is the feeding of plastic pellets. Organic producers, therefore, feed higher rations of organic hay and other plant-based roughage (as opposed to plastic roughage) to keep acidosis under control.

Without question, the most natural way to avoid this serious condition is by feeding ruminants their natural diet, which they are equipped to digest without health problems: pasture and forage.

Consumers Care: Farm Sanctuary recently blasted the organic label for not taking animal welfare seriously, and cited feedlots.

An "Organic – 100% Grass Fed" and "Organic – Pasture/Grain Finished" label, which communicate to consumers that cattle are on pasture during the grazing season, give consumers the option of choosing meat that was produced under superior conditions for animal health.

2. Consumer Health

A growing body of research points to substantial health benefits to consumers from consuming 100% grass-fed meat as opposed to grain-finished meat. Studies show higher levels of beneficial fatty acids, vitamins and antioxidants in grass-fed meat.

Fatty acids

Generally, grass-fed meat is lower in overall fat content than grain-finished meat.[vi] Studies also show that grass-fed meat is consistently higher in beneficial omega-3 fatty acids, leading a more favorable omega-6:omega-3 balance than grain-finished meat.[vii] Interestingly, studies show that as the concentration of grain is increased in the grass-based diet, the concentration of omega-3 fatty acids decreases in a linear fashion.[viii]

Research also consistently shows that grass-fed ruminant animals produce 2 to 3 times more conjugaged linoleic acid (CLA) than ruminants fed on high grain diets, largely due to a more favorable rumen pH.[ix] CLA, a naturally occurring fatty acid found in small amounts in meat and dairy products, is believed to have anti-carcinogenic, anti-atherosclerotic, anti-diabetic and immune-enhancing effects, as well as a favorable influence on body fat composition.

Studies also show that specific saturated fatty acids that are more detrimental to cholesterol levels are found in higher levels in grain-finished meat than grass-finished meat.[x]

Vitamins and Antioxidants

Some consumers may notice that 100% grass-fed meat may have a yellow hue, which is due to higher levels of carotenoids, the precursor to Vitamin A.[xi] In fact, cattle obtain carotenoids directly from fresh pasture, which is why forage-based diets without grazing, such as hay and silage, do not confer the same nutritional benefits to consumers. In the process of making silage, haylage or hay, as much as 80% of the carotenoid content is destroyed.[xii]

Vitamin E is another vitamin that has been shown, in repeated scientific studies, to occur in higher levels in meat from grass-fed cattle than meat from grain-finished animals.[xiii] Antioxidants such as vitamin E protect cells against the effects of free radicals, thereby possibly preventing chronic diseases such as cancer and cardiovascular disease.

***Consumers Care*:** According to a recent study by the Organic Trade Association, parents are primarily motivated to choose organic products for health reasons. 55% of parents who buy organic products do so because they believe them to be "healthier for me and/or my children."[xiv]

3. Food Safety

Harmful foodborne pathogens, which can be deadly, especially to young children and the elderly, are a major concern to consumers. Studies show that some pathogens, especially E. coli, may be preventable when ruminants are given their natural diet of pasture and hay.

Early studies from the 1960's and 1970's showed that a decrease in hay intake and overfeeding with grains causes an increase in total fecal coliform counts.[xv] The groundbreaking study that defined this debate was by Cornell researchers in 1998.[xvi] They found that cattle fed a 90% corn/soy ration (typical of feedlot diets) contained generic E. coli populations that were 1000-fold higher than cattle fed a 100% good-quality hay diet. The researchers also found that the E. coli recovered from the feces were 1000-fold more resistant to the "acid shock" test (simulating whether it would survive the 'acid shock' of entering the human stomach) than the E. coli recovered from cattle fed 100% hay. The scientists found that switching cattle from a grain-diet to a hay-diet five days prior to slaughter could reduce the prevalence of E. coli. One limitation of this study is that no O157:H7 e. coli, a particularly dangerous strain, were detected.

A 2009 review of scientific studies of the past 10 years concludes that "comparing grain-fed to forage-fed cattle still indicates that more E. coli (including O157:H7) is present in the feces of grain-fed cattle."[xvii]

4. Climate Change

In November 2009, The Soil Association, the UK's premier organic research group, reported that "grass-fed livestock have a critical role to play in minimizing carbon emissions from farming." Crops can literally pull carbon out of the air, and different plant types affect the biological processes of agricultural soil carbon accumulation differently. According to The Soil Association, "arable crop residues are relatively poor at forming soil carbon, legumes are better, and grass is very good."[xviii] The authors concluded: "Grasslands for grazing livestock, whether permanent pasture or temporary grasses on mixed farms, represent vitally important soil carbon stores."

5. Taste of Meat

A recent study by Penn State researchers, spurred by the growing interest in grass-fed meat, provides evidence that points to the acceptability of grass-fed meat among consumers. The researchers conclude that most consumers find the taste and tenderness of grass-fed beef acceptable in blind taste tests.[xix]

In certain media outlets, the superior taste of grass-fed beef is increasingly touted, and journalists and bloggers have conducted their own informal taste tests. For example, a 2009 article in *The Village Voice* tested grass-fed versus grain-fed beef, and uses the following words to describe the grain-fed steak: "mild," "almost flavorless," "greasily bovine," "slightly mushy," "flaccid," "fatty" and "characterless." The author describes the grass-fed steak as "strongly flavored," "slightly tangy and rich," "firm," "chewy" and "mouth-filling." She concludes: "So the grass-fed, local steak wins this battle. If it's almost

three times the price, we can all eat it one-third as often, but enjoy it three times as much."[xx]

In *Slate*, a popular daily web magazine, the author of "Raising the Steaks" writes: "Can someone please explain why that gargantuan USDA Prime strip loin I ate in Las Vegas last year had about as much flavor as a cup of tap water?" He put together a panel for a blind taste test of various types of steak. The winner, hands-down, was grass-fed beef. The author writes: "Never have I witnessed a piece of meat so move grown men (and women). Every taster but one instantly proclaimed the grass-fed steak the winner, commending it for its "beautiful" and "extra juicy" flavor that "bursts out on every bite."

6. Responding to Consumer Demand

The media is fueling the increase in consumer awareness of the benefits of grass-based livestock agriculture. In the past year alone, numerous articles have appeared in both media outlets that are popular with organic consumers, such as *Mother Earth News*, and mainstream media such as *Forbes* and *Time Magazine*. This media attention is fueling consumer demand for organic, grass-fed meat—a clear "USDA Organic – 100% Grass-Fed" label would help consumers identify these products in the marketplace, and help organic grass-based producers confidently market their products.

Time magazine, "The Grass-Fed Revolution," June 2006:

> *With more consumers questioning how their food is grown and organic fruits and vegetables exploding into a multibillion-dollar market, grass-finished meat and dairy look like the next food frontier.*[xxi]

Mother Earth News, "The Amazing Benefits of Grass-Fed Meat," April/May 2009:

> *It is not unrealistic to expect that we as a nation could convert millions of acres of ravaged industrial grain fields (plus millions of acres of land in federal conservation programs that cannot currently be used for grazing) to permanent pastures and see no decline in beef and dairy production in the bargain.*
>
> *Doing so would have many benefits. It would give us a more humane livestock system, a healthier human diet, less deadly E. coli, elimination of feedlots, a bonanza of wildlife habitat nationwide, enormous savings in energy, virtual elimination of pesticides and chemical fertilizers on those lands, elimination of catastrophic flooding that periodically plagues the Mississippi Basin, and most intriguingly, a dramatic reduction in global warming gases.*[xxii]

Forbes magazine, "The Healthiest Foods on Earth," July 2009:

> *Meat, contrary to its terrible reputation, can be a health food if—and this is a big if—the meat comes from animals that have been raised on pasture land, have never seen the inside of a feedlot farm and have never been shot full of antibiotics and hormones.*[xxiii]

Perhaps one of the most influential players in the media is Michael Pollan, who has touted the benefits of grass-fed meat in his best-selling books including *The Omnivore's Dilemma* and *In Defense of Food*, as well as the documentary *Food Inc*. When he appeared on the Oprah Winfrey show on January 21, 2010, he stated: "I eat grass-fed beef" and told his audience to "eat animals that themselves have eaten well," referring to grass-fed meat.

The lack of meat labeled as grass-fed and organic in the marketplace, initially because of USDA regulatory constraints, has fueled the growth of the "natural" grass-fed category. The three-tiered labeling system, with an option for "Organic – 100% Grass-Fed," will help organic producers communicate with consumers and improve their market share.

Conclusion

Since arguments can be made on behalf of the three production systems, it would be beneficial for organic producers and consumers to be able to easily differentiate them in the marketplace, with a clear label for each one.

Given growing consumer awareness of the benefits of grass-finishing, leading to increasing market demand for such products, it is important to help grass-based producers market their 100% grass-finished products.

Grass-based producers who give grain supplementation on pasture are also conforming to consumer expectations that organic means grass-fed, but are benefiting from small amounts of grain as well. Right now, these producers are handicapped when competing on price with grain-finished organic beef or non-organic grass-fed products. Offering better communications options on the label, with third-party certification and USDA oversight, will have great utility.

At least two grass-finished labels already exist, one is administered by USDA's Agricultural Marketing Service and the other is administered by the non-profit organization, American Grassfed Association. While both standards require 100% grass or forage as the animal's diet during its entire lifespan, these standards are not as rigorous or as recognized as the organic label in the marketplace.

The organic label is, and should remain, the gold standard of eco-labels. To prevent consumers from losing faith in the organic label—a real possibility when consumers learn that "organic" does not always mean "pastured" or "grass-finished"—we must strengthen the organic label's transparency in terms of finishing of ruminant slaughter stock. A three-tiered labeling system, which will allow consumers to choose between grain-finished organic, pasture/grain-finished organic and 100% grass-finished organic meat, will achieve these goals.

Powerful industry participants are likely to argue in favor of accommodating grain finishing in feedlots, without meaningful access to pasture or grazing on pasture. If they succeed, there will be only one legal definition of organic meat, which will include

feedlots and an exemption from grazing, which will leave the organic label vulnerable to criticism from those with concerns about animal welfare, nutritional quality and environmental sustainability. Moreover, an organic definition that allows the use of feedlots without pasture will render the organic label exceedingly susceptible to continuing competitive pressures from non-organic, "natural" marketers that offer pasture-based meat.

With a clear labeling system for organic meat from ruminants, consumers and the marketplace can decide the viability of each production system.

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