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Organic, natural and grass-fed beef: Profitability and constraints to production in the Midwestern United States

Abstract: Farmers considering a transition from conventional beef production to one of several alternative production systems (such as organic, natural, or grass-fed) need to be well informed about the possible challenges and constraints of making this shift.

Question & Answer

Q: What are the options for farmers interested in beef production alternatives?

A: Iowa farmers need to produce organic or grass-fed beef at lower costs of production than those modeled and/or receive higher price premiums for their niche beef to be profitable. Before converting to grass-fed or organic production systems, growers need to improve their forage base and develop highly productive and efficient grazing systems. In addition, beef genetics that enable animals to efficiently produce meat on forage-base or limited grain diets are needed for these systems.

Background

Market opportunities are growing for organic, natural and grass-fed beef in the United States. However, there are various constraints to farmers seeking to enter these alternative production streams. Identifying and quantifying economic and technical constraints to producing for these specialty markets are the first steps toward helping Iowa beef producers make informed business decisions.

Objectives for this project fall into three categories:

Production costs:

1. Determine the average costs of production to achieve current market-grade standards for organic, natural and grass-fed beef.
2. Calculate the costs of transitioning to these production systems.

3. Develop a user-friendly computer spreadsheet tool that farmers can use to quickly evaluate the cost and return potential for these niche market products given their resource base.

Technical constraints to production:

1. Characterize the technical constraints to these production systems.
2. Identify information resources available.
3. Propose additional research and information needs to help address these constraints.

Initial market assessment:

1. Through a series of interviews with potential marketers, brokers or other players in the organic beef markets, develop a sense of the trend and scope of these markets. This evidence will be anecdotal because of the fragmented nature of this market. However, some key aspects would include how to sell the entire beef carcass at a premium.
2. To the extent possible, study comparative advantages available to Midwestern operators and objectively gauge where other regions may hold advantages that would need to be overcome or neutralized on a competitive basis.

Approach and methods

Internet and telephone surveys of specialty beef marketing companies were conducted. Production niches were characterized based on marketing descriptions and strategies. Models of production operation and costs for each beef niche market were constructed using data from farmers surveyed, and information gathered via conversations with producers, ISU nutritionists, and production researchers. Cost and cash flow were projected over time and calculated to include the costs and delayed returns due to transitioning to these alternative systems.

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Budget:

\$31,850 for year one

A survey of 194 upper Midwest beef producers in 2005-2006 yielded 35 individual responses. Farmers were questioned about their transition to niche beef and marketing systems.

Results and discussion

Based on the analysis and prices modeled, the conventional beef production system is more profitable than natural, organic, or grass-fed beef (based on premiums being paid in late 2005). The profitability analysis assumes the beef enterprise pays the market-based opportunity cost for inputs used, including organic grain and hay. The results also indicate that selling prices and premiums are key determinates of profitability. The cash flow analysis showed that with organic premiums of 30 and 40 percent over conventional prices, the grain-fed organic beef produced a higher net present value than the conventional system. Grass-fed systems needed premiums 60 to 70 percent higher than conventional systems to generate a higher net present value.

The survey results showed that farmers were most highly motivated by fitting their production system to their own values (86 percent) and to the resources of their farms and ranches (66 percent). The increase in available markets for these niche beef products (51 percent) and the possibility of increased profits (54 percent) were second in importance among respondents for adoption of their current system.

Farmers used a range of strategies when making the move to their current niche system. Their initial focus for change often was on grazing management and beef breed selection. Other early alterations were made in marketing, cow feeding programs, time of calving, and eliminating antibiotics. Farmers responding to the survey cited marketing, grazing management, and their own management expertise as the major challenges in transition making. And, not all challenges were resolved once the transition was made.

Conclusions

- Most of natural beef programs analyzed exceeded the USDA definition for this type of meat. Producers may use that as a marketing strategy to highlight their product differentiation. The Humane Farm Animal Care seal is a good example of a differentiation tool.
- Producers considering organic production must be concerned about beginning a management intensive grazing (MIG) system. Good-quality pastures and high yields were

shown to be indispensable for organic producers who don't confine animals in feedlots.

- Grass-fed cattle grow more slowly than grain-fed cattle because they are not implanted with supplemental growth hormones. They also tend to be marketed at a lighter slaughter weights. Well-designed research and carefully monitored field observation are needed to validate or improve the model that has been developed.
- Conservation Reserve Program (CRP) land being returned to production allows producers to capture organic price premiums more quickly than a conventional conversion to organic and therefore, they could achieve a higher beef selling price sooner. However, converting CRP land will likely require an initial investment (i.e., investing in new fencing and renovating pastures), as was shown using the cash flow analysis.
- More work is needed to determine the effect of the price premiums on organic and natural beef. Even though price premiums were assumed to be relatively constant, they are more likely to vary over time. This also is true for the prices of the organic commodities used in the production of organic beef.
- Conventional beef production is the most profitable system if market prices are paid for inputs. Natural beef was the second most profitable option, given the premiums assumed. The natural niche is a rapidly growing beef market and market access has increased in the last few years.
- If producers value their land and feedstuffs at less than market value, the organic grain- or grass-fed beef operation can be a viable option. The best chances of profitability for organic grain-fed operations will be where these farmers also produce their own grains, typically at less than the market value. Even though organic producers may strive to close their mineral cycle by feeding cattle on the farm, the lower efficiencies of beef, relative to other classes of livestock in converting grain to saleable products, may limit this production model. Producers of both organic and grass-fed beef will need to produce high-quality forage at low cost and manage animals to harvest it efficiently to profit in these production niches.
- There appears to be a profit opportunity for organic grass- and grain-fed beef producers, but relatively few producers are taking this route. Perhaps the organic market is still immature and the price and price premium formation are not clear for producers. Successful examples of conversion and market demand will help producers determine if these niche markets are appropriate for them.

Impact of results

Beef producers in Iowa and the upper Midwest now have access to information not previously available about costs of production for several niche beef marketing streams. They soon will have access to electronic, interactive tools to help perform their own calculations. Project information has been shared at national meetings and formed the basis for a successful grant proposal on beef production from the USDA Sustainable Agriculture Research and Education (SARE) program. Both principal investigators have presented, and will continue to present, the project results both to alternative and conventional agriculture groups.

Education and outreach

A slide presentation on "Organic, Natural and Grass-fed Beef: Profitability and Constraints to Production in the Midwestern U.S." is available online at: [www.leopold.iastate.edu/research/marketing_files/workshop/presentations/Organic Beef.pdf](http://www.leopold.iastate.edu/research/marketing_files/workshop/presentations/Organic%20Beef.pdf)

A paper related to the project, Organic, Natural and Grass-fed Beef: Profitability and Constraints to Production in the Midwestern U.S., is available online at: www.agmrc.org/NR/rdonlyres/4E75A966-BEB6-4FD1-A12F-AB158F97D18B/0/organicnaturalgrassfedbeef.doc

"Organic, Natural and Grass-fed Beef: Profitability and Constraints to Production in the Midwestern U.S.," a summary of the full research paper listed above has been prepared and formatted in a shorter form for farmers and farm lenders. See the online Ag Decision Maker web site.

An Organic Beef Profile (May 2006) can be found online at: www.agmrc.org/agmrc/commodity/livestock/beef/organicbeefprofile.htm

A listing of contacts and other information from the project, "Resources for Organic, Natural and Grass-fed Beef Producers," is available on-line at www.leopold.iastate.edu/research/eco_files/beef.pdf

Decision support aids, including a spreadsheet and interactive budget forms, are being generated. The Beef System Evaluation for Conventional and Alternative Beef Systems spreadsheet allows the comparison among conventional, natural, natural grass-fed, organic grain-fed, organic grass and grain-fed and organic grass-fed beef production systems. Users can vary input amounts and prices and output prices to obtain estimates of profitability for one or more systems. The spreadsheet will be linked at the ISU Value Added Agriculture web site in 2008.

The Organic and Grass-fed Beef Budgets B1-23 12 Worksheet calculates the annual cost per acre for maintaining improved organic grass pastures. It assumes management intensive grazing (rotational pastures). It also calculates costs for maintaining a cow and producing a calf, and the costs to raise an organic feeder animal to market weight. Check the Ag Decision Maker web site.

Co-investigator John Lawrence presented results from the project at the May 2006 Iowa Beef Center training for 15 ISU beef field and state specialists; Leopold Center MFSI workshop, November 2006; North Central Iowa Cow-Calf Conference in January 2007 to 60 participants, mainly farmers; and the Colorado Nutrition Round Table in Fort Collins, Colorado, for 70 consultants, September 2007.

Daryl Strohbehn, ISU Extension beef specialist, presented the results at the National Cattlemen's Beef Association meeting in Reno, Nevada in July 2006.

Leveraged funds

Information from this grant was used in seeking a North Central SARE research grant. The funding for the SARE project is \$149,966.

A Montana organic producers group is using the Cost of Production spreadsheet developed as part of this project to leverage a \$22,000 grant from the Montana Department of Agriculture. It will help organic producers document their cost of production for organic grass-fed beef in 2008.

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