

Develop Value-added Marketing Channels
for a Vertically Coordinated
Beef Production and Processing System
in Ohio

FSMIP Final Report

Submitted by the Ohio Department of Agriculture
Agreement No. 12-25-G-0309
July 31, 2002

Develop Value-added Marketing Channels for a Vertically Coordinated Beef Production and Processing System in Ohio

The market issue to be addressed by this project is the inability of the current beef production and marketing system to effectively pay beef industry segment participants for producing a consistently uniform and tender meat product that meets the demands of consumers. The overall goal of this project is to develop value-added marketing channels through family farms and packing operations that will encourage and support a profitable and sustainable vertically-coordinated beef production, processing, and marketing system. This system will be dedicated to providing Ohio consumers with source-verified, safe, high-quality beef products that are produced and processed in Ohio. In order to accomplish this goal, the following approaches were taken:

1. Identify market segments in the hospitality, restaurant and food service sector that would be interested in purchasing guaranteed aged and tender beef products.
2. Develop a grid pricing system that pays the cow-calf producer for supplying beef animals with the genetics and management history necessary to achieve consistently tender, high-marbled carcasses.
3. Identify beef processing facilities that would be interested in being involved in this statewide project
4. Develop innovative products using the chuck and round portions of the beef carcass
5. Identify the potential for both the by-product market and specialty products that meet the demands of ethnic markets within Ohio.

Market Research — Consumer Survey

Prior to tackling the first goal of identifying retail and restaurant market segments interested in purchasing a guaranteed aged and tender beef product, the Ohio Department of Agriculture needed to understand the potential marketability of beef sold as Ohio born and raised. The ODA contracted with the University of Dayton's Center for Business and Economic Research (CBER) to conduct 400 10-minute telephone interviews with Ohio consumers with household incomes above \$70,000. Participants must be the primary grocery shopper for their family and must eat beef at least once each week. Past market research and survey results were obtained from the National Cattlemen's Association to confirm that these efforts would not be duplicative of research previously conducted. Below is a summary of the conclusions from this survey of Ohio consumers:

Beef characteristics that would be important to have associated in the consumer's mind with "Ohio Born and Raised Beef." — Several characteristics are of critical importance to consumers when thinking about beef cuts in general and then when thinking specifically about Ohio Born and Raised Beef. "Freshness" had the highest mean importance ranking for beef cut characteristics and was chosen as the "most important" characteristic by twice as many respondents as the next characteristic "Lean." These two

characteristics also headed the list of characteristics it was important for Ohio born and raised beef to have.

There was a strong emphasis among consumers on the beef cut being “Wholesome/Safe.” Of interest, this characteristic and other elements of Safeness (No Hormones/Growth Promotants, No Additives, No Antibiotics) become more prominent when one asks specifically for characteristics it would be important to have associated with Ohio beef.

Appropriate Themes to Include in a Marketing Campaign — While it is clear that “Freshness” could easily be associated with Ohio Born and Raised Beef as a strong theme, (see above) those more attracted to beef if it had an Ohio association were more often concentrated on the local economic impact. Among the 50% of respondents, who indicated they would be more attracted to beef with the “Ohio Born and Raised” logo, 66% indicated it was because buying it would support the local economy and farmers. Only a quarter initially indicated they would be more attracted because of higher quality and freshness.

Appropriate Retail Outlets to Target — Most respondents purchased their beef in grocery stores (as a primary source). As a consequence, it’s not surprising a strong majority (66%) expected to see Ohio Born and Raised Beef there. In addition, despite only 11% using a Retail Meat Market/Local Butcher Shop as their primary outlet (another 33% had gone in the last 6 months), 45% indicated they would expect to see “Ohio Born and Raised Beef” offered there. Only a small number focused on farmers’ markets (10%), and very few mentioned other alternatives.

Characteristics of consumers who would be interested in beef labeled “Ohio Born and Raised Beef” — Attraction to beef labeled “Ohio Born and Raised” was greater for those younger than 65 and for those with household incomes, \$90,000 to \$110,000. These demographic characteristics are of some interest but there was significant attraction across all demographic groups.

The Price Differential Sustainable for Beef Labeled “Ohio Born and Raised Beef” — If “Ohio Born and Raised Beef” can be coupled with the critical characteristics of “Freshness” and Wholesome/Safe,” there is the definite potential to charge a sustainable price differential of 20% and still achieve significant market penetration. An estimated 40% of respondents in the higher income households suggested they might purchase at that price differential. Interest falls off substantially at price premiums of 40 to 50%.

One of the issues that came to light after the survey was complete was that the survey did not address how the consumer defines “fresh” and “freshness.” This problem may have been resolved if a telephone survey pre-test had been conducted. It was determined that consumer definitions of “fresh” and “freshness” could be included as a part of the Retail Meat Buyers Survey. Complete results from the consumer survey can be found in *Attachment 1 – Ohio Born and Raised Beef Survey Report*.

Market Research — Retail Meat Buyers Survey

Once the consumer survey was complete, the ODA worked with the CBER to develop a survey instrument to use when interviewing retail meat buyers. Unfortunately, funds were not available to survey both the retail and restaurant segments. However, producer groups who are particularly interested in marketing Ohio born and raised beef have identified the retail market as their first point of market entry.

The Ohio Department of Agriculture developed a list of 90 retail meat buyers from across the state. This list included national/regional chains, local chains with 10-20 retail stores, small independent meat markets and grocery stores. Contact was initially made with the buyer by a representative from the Ohio Department of Agriculture's Division of Markets to determine if they would be interested in participating in the survey. The majority of these individuals indicated that they would. The objectives of these interviews were to gain detailed information on:

- General meat buying trends
- Overall interest in a program focused on Ohio born and raised beef
- Standards/criteria that would be important for Ohio born and raised beef to meet
- Specific product delivery issues
- Marketing requirements

CBER called all 90 names provided by the ODA during the period of March-April 2002. Even after numerous attempts, CBER was only able to complete 35 interviews. This was somewhat disappointing since the majority of the buyers had initially indicated that they would be willing to talk with someone about this issue.

However, results from this survey were encouraging. More than 77% of those interviewed indicated that they would have some interest in a program to market Ohio born and raised beef. Slightly more than 20% of those interviewed said they would have a lot of interest in such a program. Only one of the 35 respondents indicated that they would not have any interest in the program. Complete results from this survey, including verbatim responses on open-ended questions are included as *Attachment 2 – Meat Buyers Survey Final Report*.

Develop a Grid Pricing System

Dr. Brian Roe, Assistant Professor, Department of Agricultural, Environmental and Development Economics of The Ohio State University, was charged with developing a grid pricing system that rewards cow-calf producers for supplying beef animals with the genetics and management history necessary to achieve consistently tender, highly-marbled carcasses.

Feeder calf growth and development are repeatedly simulated using realistic figures for how quickly calves grow (i.e., average daily gain) and how high of quality levels they reach (i.e., yield and quality grades). These simulations feature the introduction of random noise, which simulates the fact that each animal is different and will be affected by things such as weather, health and different genetic make-up.

Cow-calf operators' revenues and feedlot operators' profits for pens of simulated feeder calves are then calculated for these simulated cattle under a number of different sales arrangements using historic price data (i.e., for feeder calves, fed cattle and quality premiums and discounts) from the 1990 to 2000 time period. Successful grid pricing systems are then identified from these simulations. The simulations assume that feeder calves are primarily sold in the fall, as is currently the case, and that feedlots have the potential to gain quality premiums for animals that have high marbling (i.e., grade high choice or above) and suffer quality penalties for low-grading animals.

Successful grid pricing systems are defined as those that yield increased revenues to cow-calf operators when compared to selling calves at the going feeder calf market price. Logically, in order for such arrangements to be successful, they must also be appealing to the feedlot operator. We verify that the arrangement is more profitable to the feedlot operator than would be merely buying calves off the open market for the prevailing price.

We identified one type of grid pricing system, which we call a quality-premium sharing agreement, which can be successful (as defined above). Under this arrangement, a participating feedlot pays 90% of the prevailing cash market price for feeder calves at the time feeder calves are placed on feed with the remaining 10% placed in escrow. When animals have completed their time on feed, the participating feedlot markets the animals on a grid (carcass) basis with a slaughter facility that can return individual carcass data. When the feedlot receives payment for the carcass and after the feedlot learns of individual animal's carcass performance, the animal's net grading premium/discount is calculated. This net grading premium/discount depends upon how well the carcass graded and the prevailing premiums/discounts paid by the processor for different carcass grades.

For example, if an animal graded high choice and the premium over base price for obtaining high choice was \$5 per hundred pounds, the net grading premium would be \$5 multiplied by the animal's weight in hundreds of pounds. At the time the feedlot sells the finished animal and receives this information, it adds 75% of this net grading premium (which can be negative if the animal graded poorly) to the 10% of the animal's sales value. This amount had been placed in escrow at the time when the feeder calf moved onto the feedlot. The resulting net payment amount goes to the cow-calf operator. This is done for each animal in the pen of calves that was sold by the cow-calf operator to the feedlot. A detailed example is below.

Example 1. Calf grades high choice at slaughter.

<i>Nov. 1</i>	<i>500 lb. calf delivered to feedlot; market price for feeder calf = \$100/cwt. Feedlot pays cow-calf operator $0.90 * 5 * 100 = \\$450$ Remaining \$50 ($0.10 * 5 * 100$) placed in escrow</i>
<i>Jun. 1</i>	<i>Animal slaughtered @ 1200 lbs., grades high choice Premium for high choice = \$7/cwt. Net payment: $\\$50$ (escrow) + $\\$7 * 12 = \\$50 + 84 = \\$134^*$</i>

** Note: total payment from feedlot to cow-calf operator will depend on net payments summed across all calves in pen*

Other calves might not grade so well and may cause a negative net payment for individual calves. See example 2 below.

Example 2. Calf grades standard at slaughter.

Nov. 1	500 lb. calf delivered to feedlot; market price for feeder calf = \$100/cwt. Feedlot pays cow-calf operator $0.90*5*100 = \$450$ Remaining \$50 ($0.10*5*100$) placed in escrow
Jun. 1	Animal slaughtered @ 1200 lbs., grades standard Discount for standard = \$10/cwt. Net payment: $\$50$ (escrow) - $\$10*12 = \$50 - 120 = -\$70^*$

* Total payment to cow-calf operator will depend on net payments summed across all calves in pen.

We found that this type of sharing agreement, evaluated at historical prices observed during the 1990-2000 time period, would have yielded the sellers of high-quality feeder calves an average of \$10 to \$13 more per head over that time period than sales on the open feeder calf market. High-quality feeder cattle are defined as those with the ability to regularly reach high choice within a normal feedlot time frame. The sellers of average quality feeder calves, which are defined as having a 50-50 chance of reaching high choice within a normal feedlot time frame, earned an average of \$2 to \$3 more per head than selling calves on the open market. The sellers of low-quality feeder calves, defined as those calves that only occasionally can reach high-choice in a standard feedlot time frame, average \$6 to \$9 less per head than if they had been sold on the open market.

Feedlots benefited from the arrangement as well, so long as they received average quality feeder calves or high-quality feeder calves. Therefore, the feedlots received part of the grading premium and because these higher-quality feeder calves usually displayed other beneficial traits such as lower costs due to mortality and morbidity which were absorbed by feedlots under this simulated agreement. Feedlots can also use the agreement as a method to attract high quality animals because cow-calf operators with low quality cattle will tend to avoid such arrangements and not wish to sell animals under such agreements.

This work, and, in particular, the simulation infrastructure developed to conduct this work, can serve as a basis to fine-tune and evaluate other possible arrangements and to ‘test-drive’ arrangements suggested by other parties. The model is flexible, such that customized information concerning market conditions, arrangement details, or individual cattle traits can be used to modify the simulations.

Develop Value-added Products

The final segment of this grant dealt with the processing end of the chain. The major goal was to enable state-inspected processing facilities in Ohio to seek profit opportunities by creating value-added beef products for sale in retail outlets or restaurants. Researchers from the Ohio State University meat laboratory developed high-value products from muscles that are typically underutilized. Specialty products that would meet the demands of ethnic markets located within Ohio were also a focus of this portion of the research.

With increases in the number of people eating meals away from home, more demand has been placed on adequate labor and user-friendly products in the restaurant and retail industries. Therefore, items that are easy to prepare and/or require fewer preparation steps are necessary to serve the growing population that eats meals away from home. Ease of preparation is also a major consideration for meals that are prepared in the home.

The round and chuck portions of beef carcasses are underutilized because the traditional cuts from these primals do not readily lend themselves to quick and/or easy preparation. This study evaluated 13 different muscles or groups of muscles from the round and chuck to identify and develop convenient value-added beef products. Sixteen value-added products were developed using muscles from these portions of the carcass. A number of these items may serve as alternatives to traditional pork products for many ethnic groups. For more specific information on this portion of the grant see *Attachment 3 – Development of Innovative Beef Products Using the Chuck and Round Portions of the Beef Carcass*.

Results Achieved to Date

The FSMIP Development Grant has served as cornerstone in the development and decision-making process for the Ohio Family Farm Beef Industry Network (OFFBIN). The OFFBIN program has utilized the data gathered from the University of Dayton CBER market study to focus product development and marketing. These results have also aided the group's efforts to establish a network to recruit Ohio beef producers to produce both the feeder calves and market animals. This group is working with a group of state-inspected processing plants to market source-verified, safe, high-quality beef products that are born, raised and processed in Ohio.

OFFBIN will continue to use the survey results to aid in the development and implementation of an "Ohio Branded" beef product line. The grid pricing system will assist in the formation of a profit-sharing system within a vertically coordinated marketing plan.

Some of the new value-added products that were developed will be incorporated into the product lines that will be offered through the "Brand Program" that is currently being developed.

Results obtained through this project have exceeded the expectations set by the Ohio Department of Agriculture. The findings have saved the OFFBIN money and time and provided a much more accurate picture of the Ohio consumer and their needs.

At a recent meeting of the North American Agri Marketing Officials, representatives from 10 states and Canadian provinces requested copies of the marketing research that was conducted as part of this project. Even though this research was specific to Ohio, it is most likely applicable just about anywhere. It is encouraging to see that so many other states may benefit from this one portion of the project.

Project Partners

This project was a cooperative partnership between the Ohio Department of Agriculture and The Ohio State University. Along the way, information and guidance was also provided by representatives of the Ohio Cattlemen's Association, the Ohio Beef Council, and Ohio meat processors. Contributors include:

Bob Boliantz
E.R. Boliantz Company
1535 Cleveland Avenue
P.O. Box 968
Ashland, Ohio 44805
Phone: (419) 289-0736

Dr. Francis Fluharty
Coordinator: Ohio Beef Industry Center
Ohio Agricultural Research and
Development Center
1680 Madison Avenue
Wooster, Ohio 44691-4096
Phone: (330) 263-3904
e-mail: fluharty.1@osu.edu

Dan Frobose
Extension Agent, Beef Marketing
Agricultural Business Enhancement Center
440 East Poe Road, Suite 201
Bowling Green, Ohio 43402-1351
Phone: (419) 354-6915
e-mail: frobose.1@osu.edu

Elizabeth Harsh
Executive Director,
Ohio Cattlemen's Association and Ohio
Beef Council
10600 U.S. Route 42
Marysville, Ohio 43040
Phone: (614) 873-6736

Justin Lahmers
State Beef Cattle Extension Associate,
The Ohio State University
Director of Beef Improvement Programs,
Ohio Cattlemen's Association
10600 U.S. Route 42
Marysville, Ohio 43040
Phone: (614) 873-6736

Dr. Brian Roe
Assistant Professor
Department of Agricultural, Environmental
and Development Economics
Ohio State University
2120 Fyffe Road
Columbus, Ohio 43210
Phone: (614) 688-5777
e-mail: roe.30@osu.edu

Dr. Henry Zerby
Department of Animal Sciences
The Ohio State University
Columbus, Ohio 43210
Phone: (614) 688-4584
e-mail: zerby.8@osu.edu

Liana Lee
Chief, Division of Markets
Ohio Department of Agriculture
8995 East Main Street
Reynoldsburg, Ohio 43068
Phone: (614) 466-5338
e-mail: lee@odant.agri.state.oh.us