

USDA Process Verified: It Isn't As Easy As You Think

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“Well, I’m sure glad that’s over,” remarked Eugene. He was one of the producers whose farm had just been inspected as part of the audit done by the US Department of Agriculture’s (USDA) Agricultural Marketing Service. “What do you mean? This was only the beginning!” laughed Tom. Tom Moore had recently retired as head of meat procurement for a large Kansas City retail supermarket chain and had been hired as a consultant to help implement the process verification program for the supermarket’s product line of natural beef. The USDA inspectors had spent three days auditing several of the 22 retail supermarkets that sell the natural beef, the meat processing plant that processed the beef, and several of the 20-odd farms that produced the beef. The three day audit was the climax of more than three years of work.

In 1997, Rainbow Organic Farms began marketing natural beef in the Kansas City area through Hen House Markets under the trademarked Good Natured Family Farms brand name. The beef was obtained from approximately 25 producers, all members of the All Natural Beef Cooperative. Rainbow Organic Farms, located in Bronson, Kansas, had been responsible for securing a market for the beef.

Early on the producer cooperative had decided that it wanted to seek some type of certification. Rainbow Organic Farms and Balls Food stores, the retail supermarket partner, had decided that it made sense to certify the process if possible because while there were a growing number of beef alliances, few of them had a quality system based on ISO 9000. The USDA version of this quality system is known as ‘process verification’. Groups could write their own manual for production, complete with a paper trail to provide source verification in addition to process verification. It was determined that it would be advantageous for the Good Natured All Natural Beef program to become process verified for anticipated marketing advantages in addition to increased efficiencies in production at all levels. Over the next three years, the

producers in conjunction with Rainbow Organic Farms and Balls Food Stores sought out expertise to help them learn more about process verification and begin the process of setting up such a program with the intent of seeking verification by USDA.

Background

Rainbow Organic Farms has been marketing natural beef to the Kansas City metropolitan market since March 1997, through the Balls Food Stores retail grocery chain. Representing about 25 third and fourth generation Kansas and Missouri family farms that are members of the All Natural Beef Cooperative, Rainbow Organic Farms prepared marketing and packaging materials, negotiated retail grocery sales agreements, conducted in-store demonstrations and performed market research. These services, combined with favorable customer perception of the quality and value of the products, have resulted in annual sales increases averaging 40% per year for the last three years. The number of animals sold per week has risen from five to twenty with expected future increases if volume could be built. The middle meats (e.g., steak cuts) sell right away but the market for the roasts and hamburger has been slow. Various processed products such as a precooked roast, hot dogs, and sausage have been developed to utilize these meats. Product quality has also improved as the number of animals rejected under their program has fallen from over 30 head per year to less than ten last year.

Market research at Kansas State University has found that consumer preference for the natural beef marketed by Rainbow Organic Farms is attributable as much to taste and tenderness as the natural production methods.¹ This has been ascribed in part to the lengthier feeding cycle and dry aging of the entire carcass.

¹ Givry, S., M.A. Boland, and J. E. Fox. "A Consumer Survey to Identify Marketing Issues for Natural Beef." Department of Agricultural Economics Research Report #29, Kansas State University, Manhattan, KS, September 1999, 12 pages. <http://www.agmanager.info/agribus/econissues/default.asp>

The members of the All Natural Beef Cooperative have benefited from higher prices for their beef, ranging from 7% to 20% over the prices available to them from alternate processing channels. In 2000 the total direct increase in revenue to these families, 90% of whom have no off-farm income, was approximately \$26,000.

The Adrian Meat Company was the first beef processor utilized by the program. However, this plant burned down in 2000, forcing the group to look elsewhere for processing services. At present, Rainbow Organic Farms owns a processing plant that slaughters exclusively for the Good Natured Family Farms label including 20 head of beef and 300 chickens per week. The beef is custom slaughtered, allowing it to be marketed in a way that maximizes returns to the producer. Carcasses are dry aged for 10-14 days prior to breaking and shipping to the retailer.

Balls Food Stores encompasses a combined network of 23 Hen House and Price Chopper retail grocery stores in the Kansas City metropolitan area. Employing more than 3,000 people, it enjoys a reputation developed over 75 years for providing outstanding value and service to its customers. Ball's "team philosophy" in running its stores has earned the chain recognition as "among the nation's best in customer service," by Food People News, which named CEO Fred Ball as one of its "Food People of the Year" for 1996. In addition, it has adopted an aggressive check out automation plan, including a system that captures highly specific purchasing data at the consumer level, and was the first grocery operation in the local area to offer a popular "self check-out" capability.

Peterson, D., M.A. Boland, and E. Boyle. "Marketing Issues for Natural Beef Products: Opinions of Supermarket Meat Managers and Consumers." Department of Agricultural Economics Research Report #28, Kansas State University, Manhattan, KS, September 1999, 18 pages. <http://www.agmanager.info/agribus/econissues/default.asp>

Value Chain

The Good Natured Family Farms program begins at the producer level. Each producer owns cows that produce a new group of calves each year. When the calves are born, there are no distinguishing features to the animals except for the genetics, which are selected to best suit the cutout practices of the program. A majority of the cattle are ear tagged at birth. Records and history of the calves are maintained by the producer until delivery to the processor. There are particular requirements that must be adhered to during production with the Good Natured Family Farms program. The requirements are listed below.

- Raised on a family farm from birth to slaughter. If not raised on the farm from birth, the animal must be obtained from an operation where practices will allow animals to be conforming and marketed through the program.
- Fed a vegetarian diet (no animal by-products in feed).
- Grain-fed (at least 50% grain) for at least 60-90 days before slaughter.
- Free from sub-therapeutic antibiotics at any time.
- Free from antibiotics (injected or ingested) during the finishing period.
- Free from administered growth hormones.

The animals marketed through the program must follow all of the above requirements. Each animal has a passport that records all its history and is delivered with the animal to the processing plant at the time of marketing.

At the processing plant, the carcasses are dry aged before being cut for delivery to stores. Carcasses are processed in such a way that increases the per-pound value of the animal. This is accomplished through precise breaking and cutting practices, thereby maximizing the weight of the high value cuts. Boxed beef is then delivered to the retailer where further processing takes

place. All the meat is sold fresh (above 36° F) and is never frozen. All natural hot dogs are also produced and are available for sale at the grocery stores.

Value Created

The target customer for Good Natured All Natural Beef is a customer who is concerned that their beef is potentially healthier and one who wants to know how their beef was produced. A consumer survey of both conventional and natural beef eaters suggests that beef purchasing choices are made based on; 1) healthiness and safety, 2) appearance, 3) convenience, and 4) price. Therefore, Good Natured All Natural Beef has been promoted based on these factors.

The market served by Good Natured All Natural Beef falls somewhere in between organic and conventional beef.² Many consumers are not willing to pay for organic beef, which has a significantly higher price due to the use of organic feed grains, but they want more information than they can get with conventional beef. All Natural Beef provides the consumer with a moderate choice, giving the consumer information on how their beef is produced as well as where it came from. Rather than banning all antibiotic use as with organic beef, Good Natured beef allows therapeutic use of antibiotics up to a certain point during production to allow for treatment of illnesses.

Finally, the Good Natured All Natural Beef program has chosen to add value to their beef by attempting to increase consistency through dry aging of the beef. Prior to cutting, carcasses are dry aged for 10-14 days. This process has been shown to increase tenderness, a trait that has been shown to be highly desired by consumers, yet very difficult to produce consistently through conventional production methods or through genetic selection. Because of education and

² Boland, M.A. and T. Schroeder. "Marginal Value of Quality Attributes for Natural and Organic Beef." *Journal of Agricultural and Applied Economics*, 34,1(April 2002): 39-50.

uniqueness, it is hoped that consumers will try Good Natured All Natural Beef. However, it is also hoped that once they have a favorable eating experience, they become loyal customers.

Technology/Specifications

The use of technology by the Good Natured All Natural Beef program is very similar to conventional beef production. Ear tags are required to be used by all producers. This allows for the animal to be tracked throughout its lifetime and also allows the producer to record which animals have had superior cutouts or gain performance. The current tagging system utilizes a bar code on the back to provide convenient identification at the processing plant. The processing plant utilizes sophisticated scale, computer, and temperature control systems. Each animal is individually identified through production and processing. This is necessary both for safety and for the compensation of producers.

Producers are paid based on the cutout of their animals. This is a fairly progressive system in that most producers are paid on the dressed weight of their animals. Producers receive a higher price for the cuts of beef that make steaks and a lower price for the cuts used in ground beef. Through the price they receive for their animals, they are able to determine which cattle best fit the program and ultimately what the consumer demands. This pricing system encourages producers to increase not just pounds but valuable pounds with subsequent sales of animals.

Regulations

The purpose of the USDA Quality System Verification Program (QSVP) is to provide a USDA endorsed version of ISO 9000, a process verification program that is globally utilized in a variety of industries. The QSVP system currently uses a list of 20 requirements. Each of these requirements must be addressed in a participant authored manual. This manual details the

production system for that particular group. Production requirements vary between groups that apply to be process verified. These requirements are self-imposed and are deemed the ‘things that one is process verified for’. Special requirements for the Good Natured All Natural Beef program were listed earlier under the Value Chain discussion. Requirements can be as rigorous or as simple as a group desires. For instance, certain groups require nothing more than verification that an animal is of a particular breed and origin.

Once the group has written a manual, they can submit it to the USDA AMS and apply for an audit. Auditors will review the manual and then visit the actual production sites. For the Good Natured All Natural Beef program, the auditors visited one grocery store location, the processor, and two production operations. They asked various questions related to production practices documented in the manual and were very particular that each participant could present the paper trail specified in the manual.

Less than one percent of those who apply for certification of any program (e.g., process verified, non-hormone treated cattle, etc.) from USDA are granted certification right away. There are generally some items that need attention and they can then reapply. Only a handful of groups have been certified as USDA Process Verified nationwide and none involve the retailer as a part of the certification process.

Costs to Each Segment

Costs are a very important consideration when determining if a program should become process verified. Program development costs are grouped with implementation costs for the process verified quality program. Maintenance costs on a year-to-year basis are also documented below.

Development and Implementation

A). Labor

Labor cost for development and implementation of the process verified program was approximately \$183,000 over a 2-year period. There were 8 different part-time graduate students and staff who worked on the development and implementation for different periods of time. Several of these people were Kansas State University employees that worked almost exclusively with the Good Natured All Natural Beef program, in an attempt to develop a partnership between industry and the university and to learn more about the program. In addition, Kansas State conducted shelf life studies on various processed products made from natural beef because no such studies had been done previously.

B). Equipment

\$13,000 was spent on equipment to develop the quality system including scales, scanners, temperature and humidity tracers, and a computer. This equipment allowed both the processor and producers to have accurate measurements of the animals being processed. It also provided proper equipment to meet HACCP requirements for the processing plant.

C). Education and Training Materials

At the completion of development, internal training was necessary to educate participants at the producer, processor and retail level on the intricacies and importance of the developed quality system. Manuals and training guides were produced for those who needed them. Training meetings were held at the producer, processor and retailer level. A farm tour was held for the meat managers where meat managers visited some of the farms and listened to a number of speakers from industry and Kansas State University. During the farm tour, the meat managers

obtained first-hand knowledge of the origin of the product in their stores. The benefits of the farm tour were two-fold: First, the meat managers took the knowledge back to the consumers, and second, the meat managers felt they were a valuable link in the success of the product. Due in part to geography and season, there were 5 different training sessions held at various times for the producers. One training session at the retail level was held for the meat managers. The total cost of training and training materials was approximately \$10,000.

In addition to internal quality training, it was necessary to provide educational material to the consumers. An M.S. thesis done (see footnote #1) at Kansas State had found that 74% of beef eaters, and 79% of natural beef eaters who were indifferent in their attitudes towards natural beef changed their attitude to positive after reading an educational brochure. Therefore, posters and brochures were developed and displayed in the stores. Product demonstrations were conducted whenever possible in conjunction with special sales of beef products. Producers accompanied these product demonstrations whenever possible to answer questions any consumers may have about the products. Producers were typically paid mileage and a stipend for their time in the stores. The consumer survey has been developed and will be conducted in the near future. It is hoped that this survey will gain valuable consumer feedback and give suggestions for future products. The total cost of consumer education was approximately \$10,000.

Miscellaneous office supplies were necessary throughout the development of the process verified quality system for the Good Natured All Natural beef program. These costs totaled \$1,500 and included printer cartridges, copying costs, postage and paper costs. The sum of the detailed portions of education and materials costs was approximately \$22,000.

D). Travel

The cost of travel was calculated using average values per trip and estimating the number of trips made over the duration of the project. Trips were most frequently made to Bronson (location of plant), Kansas City (location of retail supermarkets), Manhattan (Kansas State University), and Sabetha, Kansas where the majority of producers live. Meetings were between different participants in the quality control program during both the development and implementation phases of the project. The total cost for travel was approximately \$9,000.

E). Certification and Publication

Certification and publication costs include the pre-audit performed by the American Institute of Baking. They performed a very detailed ISO 9000 based audit to provide an idea of the flaws that may be found by the USDA during a quality audit. They provided a report and corrections were made to the quality program based on their report. The USDA Process Verification Audit was performed at a cost of \$5,500 which was the standard fee charged by the Agricultural Marketing Service. Finally, the cost of publishing the corrected quality manual was included. Total certification and publication expenses totaled \$12,600.

F). Other Direct Costs

The total costs incurred by this particular quality system development and implementation project were approximately \$260,000. There was a great deal of sunk costs up front in learning more about process verification as well as developing markets for the beef. If there had been more information available on process verification when this process began, the startup costs would potentially have been lower.

Maintenance of Quality System

Each of the segments of the quality system have annual costs incurred for maintenance. The producer, processor and retailer have training, paperwork, and time spent on the annual USDA audit when process verification is achieved. One person needs to be responsible for upkeep of the manual, participant training, consumer training and maintenance of the quality system including internal reviews and audits. The producer incurs the cost of time filling out paperwork and maintaining the quality system on their particular operation. It is assumed producers will spend about 100 hours per year on training, audits, internal reviews, and paperwork to document the quality system. They will also incur the cost of travel to and from training sessions.

The processor has the most responsibility for documentation in this program due to the fact that they share responsibility on a large portion of the documentation with the producer as well as the retailer. They will spend about 730 hours annually on paperwork and practices directed at maintaining the quality system.

The retailer shares in very little of the maintenance responsibilities on an annual basis. Most of the documentation reflects the treatment of every product that is delivered to the store. The activity of greatest importance to the retailer on an annual basis is the education of its employees on the importance of the quality system and segregation practices developed. The retailers have a higher employee turnover rate and therefore need to do continuous education. Furthermore, the retailers need to be educated on the product in order to intelligently answer consumer questions and compliment point of purchase material. In-store training sessions and farm tours will take place as deemed necessary. The retailers contributes about 16 hours annually to the maintenance of the quality system for the Good Natured All Natural Beef program.

Results of the Audit

The results of the audit found that certain required elements were not addressed in the quality manual or through production practices. There were two non-conformances found which require additional documentation. When USDA Process Verified certification is achieved, there will be potential to further the positive image of Good Natured All Natural Beef through education of the consumers on what that certification means. The process verified label in a sense tells a consumer that the product is what it claims to be. As the number of unique beef alliances increases, the value of the process verified label as a marketing tool is expected to increase.

Future Product Evolution

Research has been conducted on potential natural beef products including hotdogs, Philly beef, pre-cooked roasts, and polish sausage. These products would add value to cuts of beef that are typically used in ground beef. Faster utilization of these cuts means that more beef can be produced to fill the demand for steak and other high value cuts of beef.

Currently, beef is being supplied to the Hen House Markets as well as a few of the Price Chopper stores. Increasing beef sold to the retailer is the main goal of the producer and processor at this point. Many in-store demonstrations and producer visits are being conducted in the next few months.

Finally, the Good Natured Family Farms label has expanded to include free-range chickens and eggs, as well as bottled beverage products including milk, egg nog and orange juice. The poultry program is now seeking to attain process verification. The increasing number of products marketed under this label will reach a greater number of consumers and increase

brand recognition to the advantage of all products under the label. The success of the Good Nutured Family Farms label is made possible by all the participants and hopefully in the future there will continue to be added value to smaller yet separate entities working together to produce wholesome, process verified products.

Summary

“Well, process verification remains the goal and we have learned a great deal in the process. We have tangible results,” Eugene indicated. “For example, the initial quality manuals were completed in three inch binders. Over a nine month period, these were reduced to a one inch binder which was used in the audit.” Tom laughed again, “That’s a fact.”

Author’s Note

Both of the non-conformances identified in the audit have been addressed and submitted to USDA AMS and currently process verification is being awaited. Kansas State University will be doing educational programs this winter talking about process verification and a website with electronic materials of a generic manual will be available. For more information, please contact Renee Hawkins at rhawkins@agecon.ksu.edu or 785-532-1662.