

## **Cattle Business in Mississippi – June/July 2005 “Beef Production Strategies” article**

### **Management Impacts on Beef End Product**

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The summer grilling season is here, and beef is showing up on many plates and at many picnics. The growing beef demand in the U.S. is something that producers can be thankful for as it provides support for cattle prices. High levels of beef demand should not be taken for granted though. Consumers choosing beef have expectations for a quality product. Management on the farm can impact the quality of the product being consumed. Negative impacts of management on beef quality can affect the entire industry.

The National Beef Quality Audit (NBQA) provides benchmarks for where the U.S. beef industry is in terms of beef product quality. Further, it identifies and ranks beef quality challenges and recommends strategies for improving beef product quality across the industry. The NBQA for fed cattle was last conducted in 2000. An updated NBQA is due out within the next year. While the list of the top ten quality challenges identified by the 2000 NBQA is not new, it provides relevant guidelines for improvements in genetic and management programs at the cow-calf and stocker levels in addition to the finishing phase. The top ten quality challenges identified were as follows:

- 1) Low overall uniformity and consistency of cattle, carcasses and cuts.
- 2) Inappropriate carcass size and weight.
- 3) Inadequate tenderness of beef.
- 4) Insufficient marbling.
- 5) Reduced Quality Grade/ tenderness due to growth promoting implants.
- 6) Excess external fat cover.
- 7) Inappropriate USDA Quality Grade mix.
- 8) Too much hide damage due to brands.
- 9) Too frequent and severe bruises.
- 10) Too frequent liver condemnations.

### **Better Beef through Genetic Improvement and Records**

When the top ten quality challenges identified by the 2000 NBQA are broken down, genetic improvement go a long ways towards addressing many of these challenges. Genetic improvement involves managing the breeding program to reach genetic and ultimately product targets. Reproductive and production traits are crucial traits to consider, as they are important factors affecting profitability. Additionally, carcass traits are very important in determining end-product value. Genetic improvements to achieve desired carcass traits are very attainable, particularly since the heritability (how much genetics influences the traits) is moderate to high.

Genetic improvement to produce beef that is satisfying to consumers starts with the seedstock and commercial cow-calf producers. Since Mississippi currently has

approximately 20,000 beef cattle operations and is largely a cow-calf state, there are many producers here that are making genetic selection decisions that impact beef consumers. There is a tremendous opportunity to use performance data, expected progeny differences, and ultrasound body composition scanning technology as selection tools in a balanced selection approach that includes functionality and productivity. Bulls are widely available that offer genetic packages that will help herds make significant progress towards meeting these product targets. At the same time, bulls that will not contribute to genetic improvement and may even take herds backwards in terms of genetics are readily available as well. It is up to each producer to be able to identify and willing to invest in bulls that will make positive genetic progress in breeding programs.

As selection tools continue to evolve, producers will have to make an effort to stay informed and evaluate the use of these new tools in individual beef breeding programs. Diligent record keeping and analysis is another must for genetic improvement. Industry goals put forth in the 2000 NBQA focused heavily on improved record keeping and analysis systems. They included developing and implementing a standardized electronic identification system, developing an information system that allows each producer to conduct a quality audit for his/her own herd, and having 100% of seedstock animals accompanied by meaningful genetic data such as EPDs for production and end-product traits.

The current development and implementation of a National Animal Identification System for 48-hour traceback of animal health emergencies opens up many opportunities for individual producers to use this tracking technology for following cattle through the production chain. For this information to be meaningful, it must then be used to improve cattle genetics and marketing strategies for higher net returns. There are already many commercial tracking systems in place in the industry and utilized by Mississippi cattle producers. In addition, education programs like the Mississippi Farm to Feedlot Project provide feeding and end-product data collection that can be used to direct genetic improvement efforts and target cattle marketing. In order to achieve the elimination of USDA Standard-grade carcasses and Yield Grades 4 and 5 as recommended by the 2000 NBQA, this type of data will need to be collected and used along with other genetic selection tools in breeding programs. Cost-effective feeding strategies will likewise need to be employed to meet these goals.

### **Optimizing Implant Use**

Colorado State University researchers reported in a 2003 study that lifetime implant protocols impact not only production characteristics such as growth rate but also beef quality and palatability. Implants increased lifetime average daily gain, hot carcass weight, and ribeye area and decreased kidney, pelvic, and heart fat. However, steers implanted twice during their lifetime produced carcasses with higher marbling scores than did steers receiving a total of four or five implants. Further, steaks from nonimplanted steers were rated higher for overall eating quality, and implanting steers at backgrounding increased steak shear force values. Warner-Bratzler shear is an objective method of measuring meat tenderness where steaks are cooked, cores are removed from the steaks, and then a machine measures the force required for a knife-

like device to cut through the core of meat. Higher shear force values indicate lower degrees of tenderness. Considering the research findings regarding use of growth promotant implants on both production and product traits, the 2000 NBQA recommended that producers and feedyards match implant strategies to cattle types to optimize product quality with economic returns.

### **Bruising Trims Profits**

Trim losses due to bruising reduce carcass value and are largely preventable. Although loin bruises decreased by approximately 40% from 1995 to 2000, the percentage of bruises in the round and brisket/flank/plate area increased significantly, and only 53.3% of beef carcasses evaluated in the 2000 NBQA exhibited no bruises. How cattle are handled on the farm and in the feedlot can affect carcass value via bruising and trim loss. Among the top changes made since 1991, feedlot operators reported in the 2000 NBQA that improving handling practices ranked fourth. Improved transportation practices also made the list. The presence of horns can also contribute to bruising. Dehorning can be addressed through both genetic selection and management. Progress has been made on removing horns. From 1995 to 2000 there were nearly 10% fewer cattle with horns according to the respective NBQA's.

### **Healthy Cattle, Healthy Returns**

The Mississippi Farm to Feedlot Project data over the last twelve years shows that healthy cattle are more likely to grade Choice or better than sick cattle regardless of genetics. The local veterinarian is an invaluable resource in designing and implementing a herd health program that is proactive and effective. Good herd health management is worthwhile no matter what at point in the beef production system cattle are marketed. Beef Quality Assurance is an important aspect of a herd health program. It means more than just proper injection administration and location. Beef Quality Assurance targets improving the eating quality and overall value of beef products through proper herd health, management, and genetics. Local veterinarians and Extension Service personnel can assist in Beef Quality Assurance efforts on the farm.

### **Smart Marketing**

Marketing cattle at the appropriate time and employing proper feeding strategies can help produce cattle that have appropriate carcass sizes, carcass weights, and amounts of fat cover. In addition, the emphasis on value-based marketing as opposed to commodity beef (just selling pounds) is not decreasing. The opportunities to create and capture more value for cattle abound. Providing incentives for genetically superior and preconditioned calves were both listed as priority changes feedlot operators had made since the first NBQA in 1991 through the most recent NBQA in 2000. A wide variety of incentive programs exist, but the bottom line is that producers who are able to document desired genetics and management practices are in a position to financially capture more value for their calves. Producers must also work to inform potential buyers of this added value in order to capture extra dollars.

The next time you fire up the grill and enjoy a steak or burger, remember that a quality product starts with good genetics and proper management at the cow-calf level and follows through the stocker and feeding phases. Mississippi beef operations can make a significant difference in beef quality for the entire industry and in the process become more profitable. For more information on beef production, end product, or related topics, contact your local county Extension office.