Beef Quality

IS EVERY CATTLE PRODUCER'S BUSINESS!

BEEF QUALITY ASSURANCE CERTIFICATION PROGRAM OVERVIEW

Targeted breeding equals customer satisfaction.

Proper management enhances beef quality and product value.

Responsible culling improves herd productivity and efficiency.

BEEF Mississippi Beef Quality Assurance Program

STATE MISSISSIPPI STATE UNIVERSITY EXTENSION

Mississippi Beef Quality Assurance Program

Since its inception in the early 1980s, the Beef Quality Assurance (BQA) program has been a cooperative effort between all facets of the beef industry. By uniting animal scientists, veterinarians, feed suppliers, animal health companies, packers, retailers, and state and federal regulators with producers, the BQA program encourages use of the latest science and technology to meet our customers' expectations for beef quality and safety.

The cattle industry has many customers throughout a calf's life cycle, including these:

- Cow-calf operator
- Backgrounder/stocker owner
- Feedlot manager
- Packer
- Retailer, grocery store
- Restaurant/food service
- Ultimate consumer

What Is BQA?

BQA is a program to ensure that beef and dairy cattle are maintained in a manner that will result in a safe and wholesome beef product for the consumer.

- **The purpose of BQA is to protect consumer confidence in beef safety and quality.**
- **The BQA program is designed to help producers—**
  - **learn about industry issues and practices**
  - **set production standards that can be met or exceeded**
  - **establish systems for data retention and record-keeping**

Initiated in 1991, the beef checkoff-funded National Beef Quality Audits (NBQA) have provided the industry a meaningful set of guideposts and measurements relative to the quality conformance of the U.S. beef supply (Table 1). The early beef quality audits focused almost exclusively on the physical attributes of beef and beef byproducts—factors such as marbling, external fat, carcass weight, and carcass blemishes. In fact, progress made by the industry over the years has reduced hide defects, injection site lesions, dark cutters, and bruises.

While these physical attributes are still fundamental to meeting consumer expectations for quality, the industry must now also consider more sweeping issues, such as food safety, sustainability, animal well-being, and the disconnect between agricultural producers and consumers.

TABLE 1. Quality Challenges

Ranked according to priority, 1991–2011, National Beef Quality Audit.

1991	1995	2000	2005	2011
external fat	overall uniformity	overall uniformity	traceability	food safety
seam fat	overall palatability	carcass weights	overall uniformity	eating satisfaction
overall palatability	marbling	tenderness	instrument grading	how and where cattle were raised
tenderness	tenderness	marbling	market signals	lean, fat, and bone
overall cutability	external and seam fat	reduced quality from use of implants	segmentation	weight and size
marbling	cut weights	external fat	carcass weights	cattle genetics

TARGETED BREEDING *Equals Customer Satisfaction*

Industry targets were set up to help the beef industry produce cattle that meet standards for portion size, marbling preferences, and efficiency in the packing industry. Knowing the industry targets and understanding how to reach them are the first steps in building a good, sensible breeding program.

Strive for consistency. Consistency makes production practices such as weaning, feeding, breeding, and marketing more efficient. Verification of source, genetics, age, and processing has become increasingly important in the beef industry, emphasizing the need for improved reproductive management.

The frame size of a calf will affect the finished market weight:

Frame size	Finished weight
small	below 1,100
medium	1,100–1,250
large	over 1,250

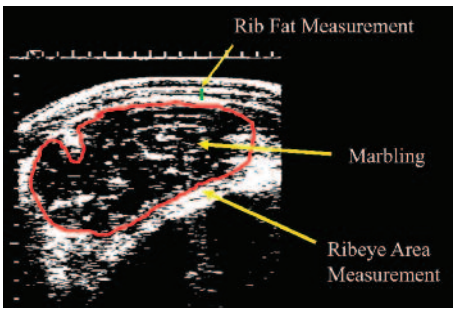
Along with frame size, muscling thickness is also important. Cattle with heavy or average amounts of muscling are desirable—large enough to satisfy a hungry appetite but still affordable to the ultimate consumer. Muscling traits influence red meat yield.

USDA Muscling Scores • Number 1–4

no. 1
moderately thick

no. 2
slightly thick

no. 3
average



Carcass ultrasound taken at the 13th rib.

Genetic selection is an important component of your breeding program that will result in a consistent, quality product. Tools such as expected progeny differences (EPDs) can be used to estimate how the offspring of an individual will compare to the offspring of other animals within a breed. Ultrasound can also be used to help evaluate heritable traits such as marbling and ribeye area (REA).

Optimal Live Cattle Characteristics

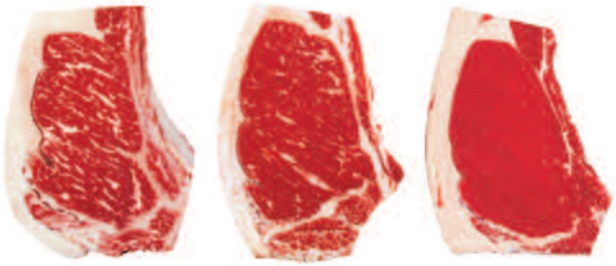
- Live weight between 1,000 and 1,350 pounds at maturity
- Classified with a USDA muscling score of 1 or 2
- Maximum backfat thickness over 12th and 13th ribs of .30 to .45 inch

Optimal Carcass Characteristics

Carcass weight	600 to 850 pounds
Backfat thickness	.25 to .49 inch
Ribeye area	11.0 to 15 square inches
Yield grade	1, 2, or 3
Quality grade	Select or higher

Obtaining carcass performance data from calves can contribute important information to your overall breeding program.

USDA quality grade: Prediction of eating quality. USDA quality grade is based on the amount of intramuscular fat in the longissimus dorsi, or ribeye muscle, and age of the calf. The amount and distribution of marbling in the ribeye is evaluated at the cut surface between the 12th and 13th ribs.

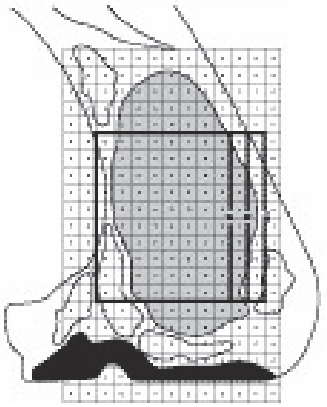


Moderately Abundant | Modest | Slight

USDA yield grade: Prediction of percent closely trimmed boneless retail beef product from a carcass. Hot carcass weight, backfat thickness, ribeye area, and percent internal organ fat determine how many pounds of beef can be sold from a carcass. USDA yield grades range from 1 (leanest; most amount of product) to 5 (fattest; least amount of product).

Increasing numbers of cattle are bought and sold on value-based pricing systems based upon projected USDA yield and quality grades of the cattle. Both must hit the target for customer satisfaction.

Produce a calf that fits the needs of the market. Along with meeting optimal targets, this will help ensure customer satisfaction!



PROPER MANAGEMENT *Enhances Beef Quality and Product Value*

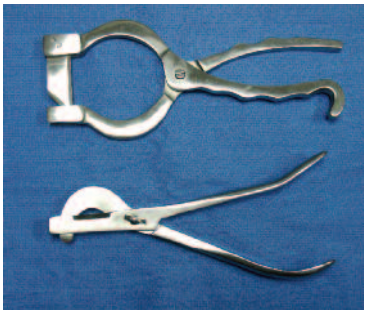
Proper management on the farm affects the quality and value of the beef purchased by consumers. Many of the things we do or fail to do on our farms have the potential to change beef quality for the consumer. The things we do should be good for our business, too, such as keeping calves healthier.

Use Proper Management Techniques

Proper management techniques produce healthy calves that stay healthy. Fewer sick cattle result in fewer treatments, fewer chances for harmful residues or defects, and more economical calf performance.

Proper management includes providing proper nutrition, reducing animal stress, vaccinating for disease protection, and controlling internal and external parasites.

- Design a health program with your veterinarian to prevent disease. Calves that have been properly weaned and vaccinated will be less stressed, healthier, and may bring a higher price.
- Castrate and dehorn calves as early as possible. These procedures are much easier on baby calves. Delaying them creates stress and lowers disease resistance. Dehorning calves early also decreases bruising. Consult a veterinarian and consider the use of anesthesia and analgesia (pain management) when performing these procedures in older calves.
- Internal and external parasites can affect animal performance. External parasites can also lower hide quality, reducing the value of the fed calf. Properly timed anthelmintics, fly tags, sprays, pour-ons, or other products can help prevent or decrease production losses due to parasites.



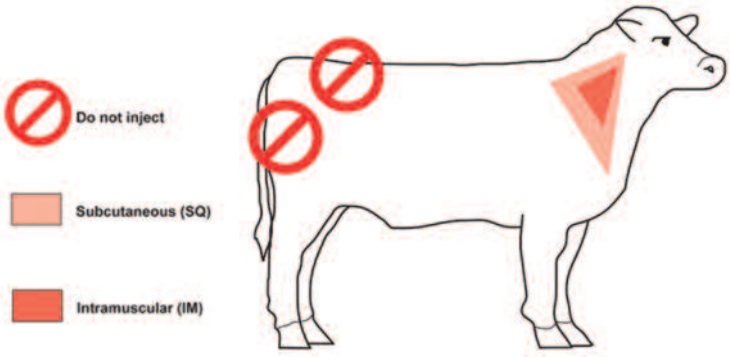
Avoid Injection Damage

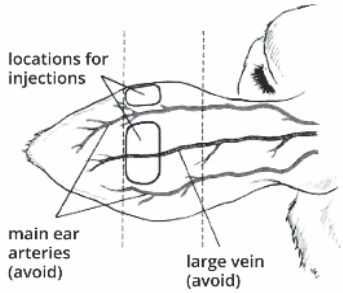
Any injection in muscle damages meat and decreases tenderness and eating quality.

All injections, intramuscular (IM) and subcutaneous (SQ), should be given in the neck region unless the product label states otherwise. When given a choice on the label, SQ (under skin) is the preferred method. Select the proper needle size and route of administration. Change needles frequently—at least every 10 animals or more frequently if the needle becomes dirty, dull, or damaged.

Use proper implant timing and location to ensure their safety and efficacy. Other ear injections should be given in the proper location. Follow withdrawal times for all products.

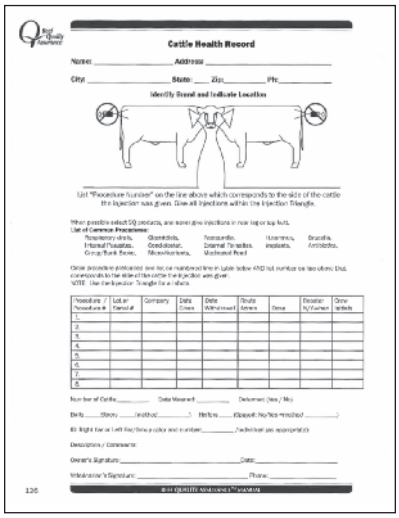
Route of Administration									
Viscosity of material	SQ (⅝ to ¾ inch needle)			IV (1 ½ inch needle)			IM (1 to 1 ½ inch needle)		
	Cattle Weight (lbs.)			Cattle Weight (lbs.)			Cattle Weight (lbs.)		
	< 300	300 - 700	>700	< 300	300 - 700	>700	< 300	300 - 700	>700
Thin (example - saline, vaccine)	18 gauge	18–16 gauge	16 gauge	18–16 gauge	16 gauge	16-14 gauge	20-18 gauge	18–16 gauge	18–16 gauge
Thick (example – oxytetracycline, inject. dewormer)	18–16 gauge	18–16 gauge	16 gauge	16 gauge	16-14 gauge	16-14 gauge	18 gauge	16 gauge	16 gauge
Select the needle to fit the cattle size (Smallest practical size without bending)									
Adapted from: National Beef Quality Assurance Training Manual									





- Keep syringes and injection equipment clean, and practice proper vaccine handling. Safeguard vaccines to maintain their effectiveness. Use modified-live vaccines appropriately. Administer no more than 10cc per site (less for calves), and give injections at least 4 inches apart.

Keep Good Records

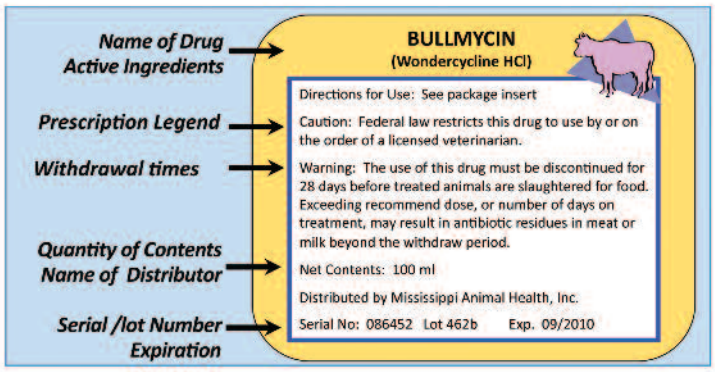

Cattle Health Record

Keep good records on all vaccinations and treatments administered to your animals. Keep all treatment and medication records for a minimum of 2 years.

Follow all drug and vaccine labels, and pay special attention to any withdrawal times.

Prescription drug use and any extra-label drug use (prescription or over-the-counter) require a valid veterinary-client-patient relationship. This means the veterinarian is familiar enough with the animal(s) or herd to make a diagnosis, the producer is willing to follow the instructions, and the veterinarian will keep records and be available for follow-up with that medication.

Read feed tags carefully. The use of medicated feeds containing a veterinary feed directive (VFD) drug must be approved by a veterinarian. Medicated feeds may not be used in an extra-label manner at any time.

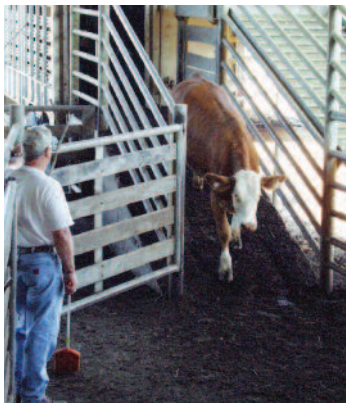


Use Proper Animal Identification

Individual animal identification is important to production records and management. Animals should be permanently identified to help with keeping treatment and vaccination records. Know your state's specific requirements for animal identification. Enrolling your farm in a premise registration system will also assist in identifying farms and animals in the case of an emergency.

Hide damage lowers the average fed-calf's value. Freeze branding will cause less damage than hot-iron branding. If calves must be branded, place brand high on the hip. Ribcage brands are discouraged because they cannot be trimmed out.

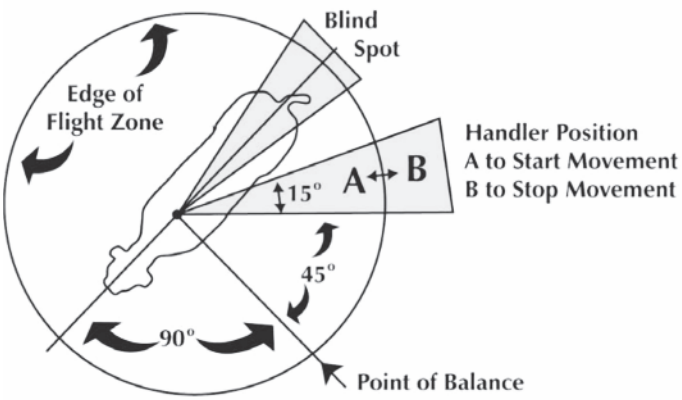
Practice Proper Handling



Use Low-Stress Handling Techniques

Always use low-stress handling techniques when working or transporting cattle to reduce bruising and stress. Bruising causes significant carcass trim. In addition, stressed cattle are more likely to become "dark cutters." To avoid bruises, handle cattle gently through chutes, and remove protruding objects like nails and broken boards.

Understand cattle behavior, and avoid excessive noise or visual distractions. Minimize or eliminate the use of electric cattle prods or "hot shots." Inspect equipment and trailers before each use, and follow trailer load limits. Ensure that other people handling your animals also do so in a quiet, calm, and stress-free manner.



Practice Good Biosecurity

Good biosecurity practices can help prevent and control disease. Biosecurity practices may include cleaning and disinfecting protocols, quarantine of new animals, and testing cattle for infectious diseases.

Have a visitor policy in place to promote disease control.

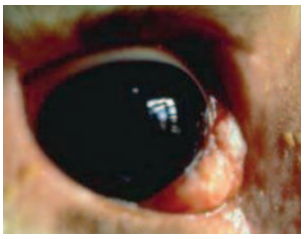
RESPONSIBLE CULLING *Improves Herd Productivity and Efficiency*

Animals are culled from a herd for a number of reasons, including advanced age, poor performance, reproductive status, injury, and disease. Cull animals can be considered non-fed cattle such as market cows and bulls. These cattle are truly market animals that are a part of the food supply—they account for 15–20 percent of total U.S. beef production. Overall, market cows and bulls generate about 70–75 percent of non-fed beef.

Challenges faced with marketing cows and bulls include food safety, animal welfare/handling, injection site lesions, antibiotic residues, bruising, hide damage, lameness, and downers. As a cow/calf producer, you should set standards for your herd, which includes regularly checking animal condition and monitoring for reproductive status, disposition, injuries, and disease. Quality checks should be conducted at least every year because they impact both herd productivity and product quality.

Check eyes.

Examine their eyes closely at least every time you get the animals up to work them. Untreated eye injuries can result in blindness or even loss of the animal. Bovine ocular neoplasia, or "cancer eye," is one of the leading causes of cow carcass condemnation.



Check mouths.

Cows must have adequate teeth to harvest forage for nutrition, milk production, and calf growth. Bad teeth can result in poor-conditioned cows.

1. solid-mouthed
2. smooth-mouthed
3. broke-mouthed

Check feet and legs.

Lameness results in poor performance and can lead to more serious conditions. If lame cows do not respond quickly to treatment, cull early to prevent more serious consequences.

swollen hock

septic arthritis

screw claw

Check udders and teats.

It takes a good udder to produce a good calf. Balloon teats or pendulous udders are difficult to nurse and will not improve over time. Mastitis destroys milk-producing tissue and should be treated promptly.

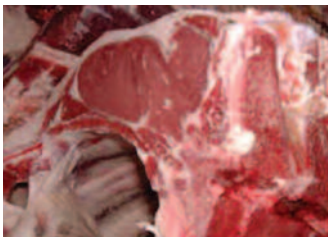
Check body condition.

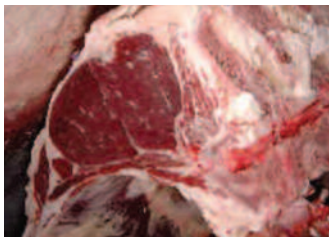
Cows should be body condition scored (BCS 1–9) twice a year at pregnancy checking and weaning. Thin cows lack energy reserves, do not breed back, and may become "downers." Fat cows are inefficient, more likely to have calving problems, and often do not wean a calf.

A. BCS 1 = emaciated
B. BCS 5 = moderate
C. BCS 9 = obese

Check disposition.

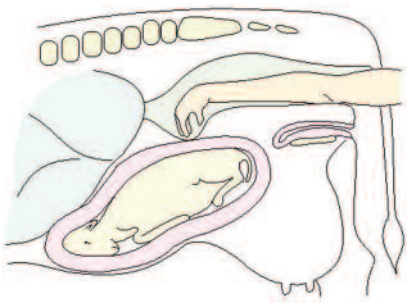
Cattle with poor temperaments can hurt other animals and their human handlers, and they are more likely to produce excitable calves. They do not gain well in the feedyard and tend to produce lower quality grades due to "dark cutting" meat. Cattle with poor dispositions should be culled.

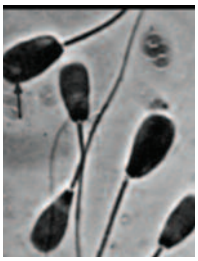




Check reproductive efficiency.

Annual pregnancy exams help identify open, defective, or diseased cows before they cause a liability. Conduct breeding soundness evaluations of bulls—including physical condition, scrotal circumference, and semen quality—before every calving season. Nonproductive cows and bulls should not be kept in the herd.

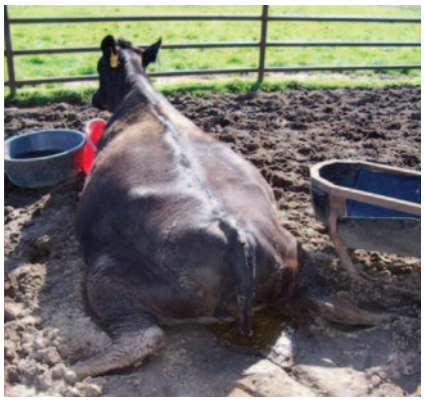




Market cattle promptly.

Other advanced conditions or injuries can impact animal welfare and public perception. Marketing cattle promptly before advanced conditions occur will promote better quality of life for the animal and be more efficient for the operation.

Non-ambulatory (downer) cattle can result from a variety of conditions. They require a prompt medical diagnosis and should be provided adequate feed, water, footing, and protection from the elements. They should be moved carefully without dragging.



Downer cattle cannot be sold and should be euthanized on the farm if they are not likely to recover. It is important to understand when to consider salvage (slaughter) and when to consider euthanasia in animals suffering from advanced conditions. A trained professional should humanely perform euthanasia.

Remember, cows and bulls are part of the beef supply.

- **Consider injection sites.**
- **Adhere to withdrawal times.**
- **Provide adequate care at all times.**
- **Make culling decisions early.**

PRODUCER CODE OF CATTLE CARE

Beef cattle producers take pride in their responsibility to properly care for cattle on their farms and ranches. The following are general recommendations for producers to consider in raising and handling cattle:

- ✓ Provide necessary food, water, and care to protect the health and well-being of animals.
- ✓ Provide disease prevention practices to protect herd health, including access to veterinary care.
- ✓ Provide facilities that allow safe, humane, and efficient movement and/or restraint of cattle.
- ✓ Use appropriate methods to euthanize sick or injured livestock, and dispose of them properly.
- ✓ Provide personnel with training experiences to properly handle and care for cattle.
- ✓ Make timely observations of livestock to ensure basic needs are being met.
- ✓ Minimize stress when transporting cattle.
- ✓ Keep updated on advancements and changes in the industry to make decisions based on sound production practices and consideration to animal well-being.
- ✓ **Do not tolerate persons who willfully mistreat animals.**

Would you eat what you produce?

Make every bite a good eating experience!

Your involvement in the Beef Quality Assurance certification program demonstrates your commitment to raise safe, wholesome, high-quality, and consistent beef cattle.

Mississippi Beef Quality Assurance Program

Mississippi Cattlemen's Association

Mississippi Beef Council

Farm Bureau Mississippi

Mississippi State University Extension

Beef Quality Assurance

Mississippi State University College of Veterinary Medicine

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