

Western Beef Resource Committee

Cattle Producer's Library

Quality Assurance Section

CL215

Beef Quality Assurance for Marketed Cows and Bulls

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Every producer must realize they are raising animals that one day will be consumed as human food. A healthy old cow is certain to become food when she is placed on the to-be-sold list. A bull has the same fate when he fails to meet the breeding demands of the owner.

Meat products from mature marketed cows and bulls represent about 20 percent of the total beef production in the U.S. Contrary to popular belief that they convert nearly all non-fed cattle to ground beef, packers save and sell 89 percent of the rounds and 40 percent of the top sirloin butts from non-fed cattle to be sold and consumed as steak. Also, revenue from sales of cows and mature bulls may account for 30 percent of a producer's annual income.

Choices of marketed animals are based on the individual production capacity and/or utility in relation to overall producer goals and expected economic return. Given the importance to beef markets and individual producers, decisions on marketing cows and mature bulls can have an impact on both.

The retail competition among beef, pork, and poultry products is strong. Added to the mix is a consumer concern for the total amount of meat in their diets. Further, there are lingering concerns among consumers about the safety of some meat products. These concerns and perceptions need attention to assure the beef consumer that the industry is meeting the high standards of quality and safety. Researchers conceived the beef quality assurance idea as a way to enhance the image of beef in the consumer's mind.

Quality Assurance for Animals Marketed When They Are Fully Mature

Beef quality assurance programs address several details that are important to the non-fed animal market including drug and chemical residue-avoidance, reduction of injection-site damage in back and rump muscles,

reduction of tissue damage from bruises, and excessive fat trim.

Many quality deficits in mature cows and bulls, such as advanced lameness, inadequate muscling in cows, heavy live-weights, and low dressing percentages in bulls, are also considered here. [See CL200, The Cattle Producer's Role in Beef Quality Assurance, for more recommendations on beef quality assurance goals.]

According to the NCBA's 1999 National Market Cow and Bull Quality Audit (see CL 290), two extremes in carcass defects account for the greatest revenue losses and are the most frequent findings for the mature non-fed cattle presented at slaughter: too thin or too fat. Inadequate muscling, or low muscling scores were found in 67 percent of cows and 15 percent of bulls at slaughter.

Researchers detected excess external fat or too high carcass weights in 62 percent of bulls and 28 percent of cows at slaughter. Combined, these defects accounted for \$233 million in revenue lost to the beef industry from the uncorrected quality defects in non-fed cattle.

To help solve this area of quality inconsistencies, cattle producers are encouraged to consider various strategies for marketing their adult cattle. Prices for slaughter cows and bulls are traditionally lowest in October to December and highest in February to April. For thin, inadequately muscled cows, one marketing option is to develop a feeding plan that improves their body condition before selling.

Short term feeding plans range from 30 to 100 days. For thin cows detected in the fall, one suggestion is to feed a ration developed for maximum gain for 30 days and market animals in better condition and higher weights. These thin cows will gain weight rapidly after removal of the calf at weaning time. Another option is to feed thin animals for minimum gain through the winter followed by a maximum gain ration and market them during the early spring when prices usually increase.

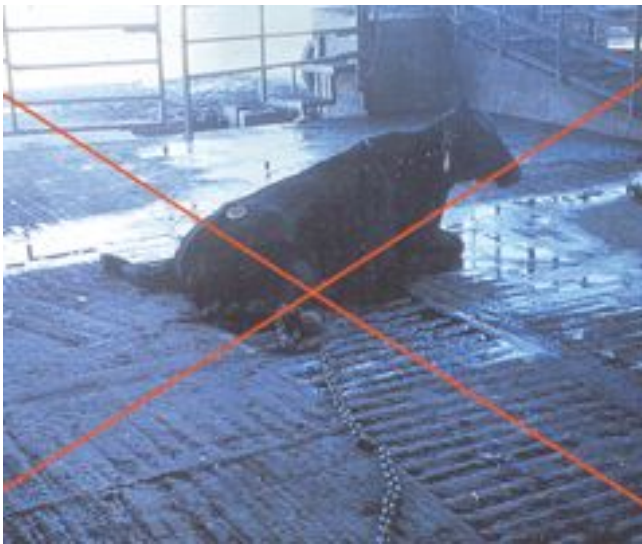


Fig. 1. Downer cow presented for slaughter.

Of course, the economic returns from feeding cows depend on feed costs and price at selling, so there are risks that producers need to analyze when considering whether to raise the value in their animals through holding and feeding. For cattle of excessive carcass size/weight (e.g., mature bulls), the marketing strategy should be to sell sooner, before they get so large. The same is true for cattle with excessive external fat, such as the open cow that lost her calf or who was missed from being sold the previous year.

Downer or Non-Ambulatory Animals

Before the discovery of Bovine Spongiform Encephalitis (BSE), also known as Mad Cow Disease, in a Holstein cow in the state of Washington in December 2003 it was common practice to present downer or non-ambulatory cattle at market and slaughter. In early January 2004 the U.S. Department of Agriculture (USDA) announced regulations that ban all downer animals and products from downer animals from entering the human food chain (Fig.1).

Private butchering, on farm or custom kill, of downer animals is no longer an acceptable practice. Producers are encouraged to market animals before they become so weak, thin, or lame that they are at high risk of going down in transit.

Cancer Eye, Lumpy Jaw, and Severe Lameness Defects

About 8 to 9 percent of adult beef cattle are presented at slaughter with a cancer eye (extreme to severe), lumpy jaw, or a disabling lameness (Table 1). These quality defects result in more than \$5 million in losses from carcass and partial tissue removal at processing annually.

Cattle with advanced diseases present an image at auction markets and processing plants that affect the viewer's perception of quality, wholesome meat. Much of this loss and negative public impact is avoidable.

Table 1. Percent of defects found in beef cattle at slaughter plants.

Muscling score too low	82.0%
Fatness score too high	49.0%
Disabled cattle	4.3%
Cattle with cancer eye	3.6%
Cattle with lumpy jaw	1.9%

For cancer eye problems, disease prevention programs need to consider sire and dam combinations that meet production goals plus reduce the risk of cancer eyes for the herd. Producers with their veterinarian could design monitoring and treatment protocols to detect cancer eyes earlier (Fig. 2). Then perhaps effective therapy could extend the productive life of the affected animal or at least provide the opportunity for earlier marketing of animals with minimal eye lesions.

Although prevention of lumpy jaw infections may not be effective, a well-designed disease monitoring program could detect the disease at an earlier stage when drug therapy is more effective. Also, there may be the opportunity for early disease detection and marketing before chronic infection causes excessive weight loss and/or before the infection becomes so invasive.

Quality deficiencies from severe lameness should be considered at two levels: (1) lameness with infection and (2) lameness without infection. Sometimes non-infected injuries, such as joint dislocation and tendon or muscle injury, may be treated conservatively until the severity of swelling and lameness subsides.

If the animal has had access to an adequate ration, a producer could reduce weight loss as well. With the effects of its injury reduced, the animal is a better market prospect in quality and profit. Where medically and economically feasible, these cases should receive appropriate therapy and nutrition before being marketed.

When therapy is not possible, or is economically infeasible, your veterinarian should be called to help determine if the animal's injury would prevent its sale as a food animal for human consumption. If, in the veterinarian's assessment, the animal is found acceptable for human consumption, it should be butchered



Fig. 2. Advanced cancer eye condition.

immediately to reduce suffering and further deterioration of quality.

Again, keeping public perception in mind, custom or on-farm slaughter might be the best decision. If your veterinarian has deemed the animal unfit for consumption, it should be humanely and immediately euthanized and disposed of.

Animals with lameness involving an infectious process, such as foot rot or joint abscesses and most compound fractures, should not be sent to slaughter with the expectation of being found acceptable for human consumption, or sent to auction for sale. From a quality assurance and animal welfare point of view, the animal should be medically treated to remove the infectious agent or humanely euthanized and disposed of.

All the issues raised by this topic require and encourage the participation of a competent and confident bovine veterinarian along with the livestock manager. These scenarios will demand crucial decisions that need to be made timely and/or planned for in advance. The bovine practitioner is the vital key in the cattle producer's overall quality assurance program for success.

Quality Assurance Recommendations for Mature Cattle

In consideration of overall quality, including food safety, a quality assurance program should follow these recommendations in marketing non-fed mature cattle:

1. Prevent residues and injection-site lesions by using responsible administration and withholding times for all animal health products.
2. Reduce risk for the development of antibiotic resistance by prudent and discretionary use of antibiotics.
3. Plan for high quality products by monitoring and managing non-fed cattle and marketing them before they are too fat or too thin.
4. Reduce risk for carcass condemnations and a poor public image for beef products by monitoring the herd's health and marketing cattle with physical disorders in a timely manner.
5. Decrease hide damage through strategic parasite control methods and using non-brand methods for cattle identification. When branding is necessary, use sites that reduce hide damage and discourage the use of multiple brands on one animal.
6. Reduce bruises by dehorning or tipping horns (see CL750), correcting deficiencies in facilities, trans-

portation and equipment, and improving cattle-handling skills.

7. Humanely euthanize disabled, downer cattle, and those with advanced cancer eye.

Conclusions

Producers are encouraged to join in and/or direct the efforts to enhance the quality of the meat product they produce. Good management and vigilance will help in this work by:

- Remembering to observe drug and chemical withdrawal times,
- Directing and/or encouraging discretionary use of drugs,
- Using sanitary injection techniques, and
- Using recommended injection sites, injection routes, and recommended dosage loads per site.

Develop good management plans that allow herd health monitoring for early stages of debilitating diseases plus cow and bull body condition with an eye toward future marketing of selected animals. Keep in mind that all healthy cattle will someday be human food.

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