

Chapter 4

Impact of Management Practices on Carcass Quality



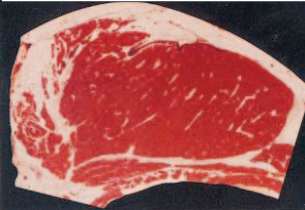
Improving quality and consistency begins with understanding the industry targets for carcass traits. As always, targets for carcass defects are zero.

To improve quality and consistency, it is necessary to receive feedback on the performance of cattle that leave the production unit. Use this information as a basis for setting goals. By making adjustments, the consistency of meat products can be improved. Areas to evaluate include the rate of gain of cattle and feed conversion rate, and carcass grade.

Carcass defects:

injection-site blemishes/lesions, bruises, dark cutters, liver condemnation, etc.

Avoid standards and yield grades of 4 or 5.



Trait	Target
Yield Grade	< 3.0
Quality Grade	> Select, A-Maturity, No Dark Cutters
Carcass Weight	600 to 900 lb
Ribeye Area	11.0 to 15.0
Brands	No Hot Brands



Importance of Genetics

Cutability, the percentage of boneless, closely trimmed retail cuts from a beef carcass, is reduced by both excessive external fat and inadequate muscling.

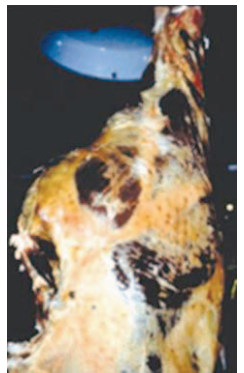
Muscling is more than a beef-quality issue; it is also a feedlot efficiency issue. Feeding practices that allow for the full expression of lean tissue (muscle) growth and development prior to finishing will also positively impact carcass cutability, even in lighter muscled cattle. Finally, muscle growth is energetically more efficient than fat accumulation, and this fact translates into better overall feed efficiency and a lower cost of gain in cattle with more muscle. Cow-calf producers must understand that their breeding and selection practices significantly impact muscling, as it is one of the most highly heritable genetic traits. Reducing Bruising in Carcasses

Bruising costs the beef industry \$22 million annually in carcass trim at the time of processing. The most common cause of bruising is a hard bump against a protruding object or horns.

Rough, careless handling causes more than 50 percent of all bruises. It is advised not to rush livestock. Let them follow the leader and move at their own pace. Following are recommended practices to help reduce bruising:

Horns

Horned cattle create bruises. Tipping of the horns will not reduce bruising. Polled cattle are recommended. Horned cattle need to be dehorned at an early age. Over-crowding horned cattle on a truck will increase bruising.



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Gates

Loin bruises are created when a gate is thrown into the side of an animal.

Protruding Objects

Broken boards, nails, and exposed bolts should be eliminated. Check facilities by looking for shiny, rubbed spots or tufts of hair. Sliding gates (vertical or horizontal) should be padded with large-diameter hose. Corners can be padded by cutting strips from old tires or conveyor belts.

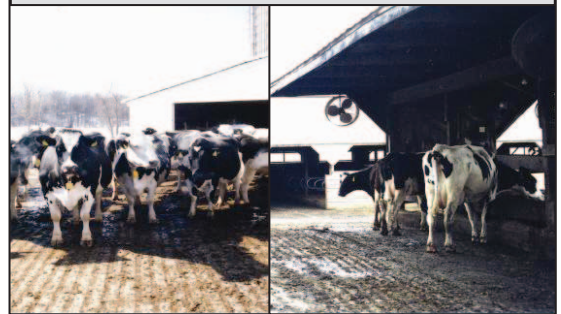
Fencing

Planks, sheet metal, or other fencing materials should be installed on the side of posts toward the cattle. If animals are being handled on both sides of the fence, install a rail to prevent cattle from catching hips on the posts. The area from 28 inches to 52 inches from the floor is the hazard zone.

Flooring

In new facilities with concrete floors where cattle are handled, prevent slipping and falling by scoring the concrete with an 8-inch diamond pattern with grooves 1 inch deep. In existing facilities, roughen the concrete or make a grid from 1-inch steel bars. Be sure to grind down sharp edges and let the concrete cure before permitting animal traffic.

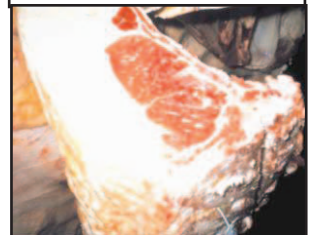
Grooved concrete floors and scored rubber padding improve footing and comfort. This is most important for high traffic areas such as parlor holding pens and feedbunk alleys.



Excessive External Fat

Excessive external fat costs producers \$50 per head of fed cattle marketed (2000 NBQA). Typically, the cost of this loss plus the carcass quality defects discussed in other sections of this BQA manual, are passed along to all producers because packers figure lost value into the prices paid for all cattle sold. In addition to average lost value to the market, excessive external fat creates less desirable yield grades, thus creating individual carcass discounts. Carcasses with adequate muscling and without excess external fat are rewarded for quality—particularly when sold on a grade and yield basis. National Beef Quality Audits indicated that beef quality improved with closely trimmed beef, heightened producer awareness of quality problems, improved cutability, and extended shelf-life or retail case-life of beef products. At the same time, the results of the audits show that more work remains to be done to improve eating quality and consistency.

Excessive external fat.



Dark Cutters

Dark-cutting beef carcasses (dark cutters) produce meat that is dark, firm, and dry, and result in significant economic losses in the United States. Dark cutters are caused by preharvest stress, which depletes muscle glycogen stores. Without sufficient glycogen in the carcass, lactic acid cannot be produced to reduce the pH of the meat. Weather, growth promotants, genetics, disposition, and handling practices before harvest all play a role in causing dark cutters.

Feedlots

Mean percentages of dark cutters per pen differed between individual feed yards. This finding indicates that the incidence of dark cutters was in part due to different management philosophies or the structural attributes of the feed yards. The percentage of dark cutters may also be affected by when cattle are harvested during the week. Cattle that are “startup” cattle for the week can be expected to have more dark cutters because they may have more time to stand around than other sets of cattle brought in during the week.

Implants

Data from Colorado State University indicate that cattle tend to have a lower incidence of dark cutters per pen when the time from reimplantation to harvest was longer than 100 days.

Environment

The occurrence of dark-cutting beef is highest during very cold weather combined with precipitation. These conditions increase the rate of body-heat loss and elicit shivering, which depletes glycogen stores. The incidence of dark cutters is high in hot weather or when large fluctuations in temperature occur over short periods of time (i.e., when temperatures fluctuate more than 10 degrees in a 24-hour period).

Mixing Different Groups of Cattle

Don't mix strange animals. Fighting to establish a new social order 24 to 48 hours prior to slaughter can increase the incidence of dark cutters. Bulls should be kept separate because mixing bulls with other cattle can cause dark cutters within 90 minutes.

Crowding

Crowding can increase the incidence of dark cutters.

Genetics

Temperament appears to be inherited. Producers are encouraged to add disposition as a selection criteria.

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