

CATTLE CARE & HANDLING GUIDELINES





A SAFE, WHOLESOME AND HEALTHY BEEF SUPPLY

Beef cattle producers take pride in their responsibility to provide proper care to cattle.

The Code of Cattle Care below lists general recommendations for care and handling of 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 medical care.
- » Provide facilities that allow safe, humane, and efficient movement and/or restraint of cattle.
- » Use appropriate methods to humanely euthanize terminally sick or injured livestock and dispose of them properly.
- » Provide personnel with training/experience to properly handle and care for cattle.
- » Make timely observations of cattle 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 upon sound production practices and consideration for animal well-being.
- » Persons who willfully mistreat animals will not be tolerated.

CATTLE CARE & HANDLING GUIDELINES



Cattlemen have long recognized the need to properly care for livestock. Sound animal husbandry practices, based on decades of practical experience and research, are known to impact the well- being of cattle, individual animal health and herd productivity. Cattle are produced in very diverse environments and geographic locations in the United States. There is not one specific set of production practices that can be recommended for all cattle producers. Personal experience, Beef Quality Assurance (BQA) training and professional judgment can serve as a valuable resource for providing proper animal care. The following information is to be used as an educational resource, all production practices should be adapted to specific needs of individual operations.



FEEDING AND NUTRITION

Diets for all classes of beef cattle should meet the recommendations of the National Research Council (NRC) and/or recommendations of a nutritional consultant. For local recommendations and advice, contact your state agricultural extension as a potential resource.

- » Cattle must have access to an adequate water supply. Estimated water requirements for all classes of beef cattle in various production settings are described in the National Academy of Sciences NRC Nutrient Requirements of Beef Cattle.
- » Provide adequate feed. Avoid feed and water interruption longer than 24 hours.
- » Feedstuffs and feed ingredients should be of satisfactory quality to meet nutritional needs.
- » Under certain circumstances (e.g., droughts, frosts, and floods), test feedstuffs or other dietary components to determine the presence of substances that can be detrimental to cattle well-being, such as nitrates, prussic acid, mycotoxins, etc.
- » Producers should become familiar with potential micronutrient deficiencies or excesses in their respective geographical areas and use appropriately formulated supplements.
- » Use only USDA, FDA and EPA approved products for use in cattle. These products must be used in accordance with the approved product use guidelines.

Feeding Guidelines for Beef Cows

Body condition scoring of beef cows is a scientifically approved method to assess nutritional status. Body condition scores (BCS) range from 1 (emaciated) to 9 (obese).

- » A BCS of 4-6 is most desirable for health and production. A BCS of 2 or under is not acceptable and immediate corrective action should be taken.
- » During periods of prolonged drought and widespread shortages of hay and other feedstuffs, the average BCS of cows within a herd may temporarily decline. This is not desirable, but may be outside the cattle owner's control until drought relief is achieved.
- » During periods of decreasing temperature, feeding plans should reflect increased energy needs. See additional Cold Stress proceedures (pg. 20)

Feeding Guidelines for Stocker Cattle

- » Stockers are raised on a wide variety of forages (native pasture, annuals, improved pasture) with minimal additional nutrient supplementation.
- » On growing forages, stocking rates should be established that meet production goals for growth and performance.
- » On dormant pastures, supplement cattle as needed to meet maintenance or growth requirements for the animal's weight, breed, and age as established by NRC guidelines and targeted production goals of the operation.

Feeding Guidelines for Feeder Cattle

Feedyard cattle can eat diverse diets, but the typical ration contains a high proportion of grain(s) (corn, milo, barley, grain by-products) and a smaller proportion of roughages (hay, straw, silage, hulls, etc.). The NRC lists the dietary requirements of beef cattle (based on weight, weather, frame score, etc.) and the feeding value of various commodities included in the diet.

- » Consult a nutritionist (private consultant, university or feed company employee) for advice on ration formulation and feeding programs.
- » Avoid sudden changes in ration composition or amount of ration offered.
- » Monitor changes in weight gain, feces, incidence of digestive upsets (acidosis or bloat) and foot health to help evaluate the feeding program.
- » A small percentage of cattle in feedyards develop laminitis or founder. Mild cases do not affect animal welfare or performance; however, hooves that are double their normal length compromise movement. In these instances, the individual animal should be provided appropriate care and marketed as soon as possible.



DISEASE PREVENTION, HEALTH CARE, AND CATTLE MANAGEMENT PRACTICES

Like other species, cattle are susceptible to infectious diseases, metabolic disorders, toxins, parasites, neoplasia and injury. Control programs should be based on risk assessment and efficacy of available products. Economic losses are reduced by early intervention through health management programs. Healthy herds are more productive. Management programs should be science-based and common-sense driven.

The producer should work with a veterinarian to determine the risk of infectious, metabolic and toxic diseases and to develop effective management programs when designing a herd health plan. A Veterinary/ Client/Patient Relationship (VCPR) is strongly encouraged.

Producers and their employees should have the taining and ability to recognize common health problems and know how to properly utilize animal health products and other control measures.

When prevention or control measures are ineffective, the producer should promptly contact a veterinarian for a diagnosis and treatment program to reduce animal suffering and animal losses.

A Producer's Guide for Judicious Use of Antimicrobials in Cattle

- **1. Prevent Problems:** Emphasize appropriate husbandry, management, hygiene, routine health examinations, and vaccinations.
- 2. Select and Use Antibiotics Carefully: Consult with your veterinarian on the selection and use of antibiotics. Have a valid reason to use an antibiotic. Therapeutic alternatives should be considered prior to using antimicrobial therapy.
- 3. Avoid Using Antibiotics Important In Human Medicine As First Line Therapy: Avoid using, as the first antibiotic, those medications that are important to treating strategic human or animal infections.
- **4.** Use the Laboratory to Help You Select Antibiotics: Cultures and susceptibility test results should be used to aid in the selection of antimicrobials, as neccessary.
- 5. Combination Antibiotic Therapy Is Discouraged Unless There Is Clear Evidence The Specific Practice Is Beneficial: Select and utilize an antibiotic to affect a cure.
- **6. Avoid Inappropriate Antibiotic Use:** Confine therapeutic antimicrobial use to appropriate clinical indications, avoiding inappropriate uses such as for viral infections without bacterial complication.
- 7. Treatment Programs Should Reflect Best Use Principles: Regimens for therapeutic antimicrobial use should be optimized using current pharmacological information and principles.
- 8. Treat the Fewest Number of Animals Possible: Limit antibiotic use to sick or at risk animals.
- **9. Treat for the Recommended Time Period:** This will minimize the potential for bacteria to become resistant to antimicrobials.
- **10. Avoid Environmental Contamination with Antibiotics:** Steps should be taken to minimize antimicrobials reaching the environment through spillage, contaminated ground run off or aerosolization.
- **11. Keep Records of Antibiotic Use:** Accurate records of treatment and outcome should be used to evaluate therapeutic regimens and always follow proper withdrawal times.
- **12. Follow Label Directions:** Follow label instructions and never use antibiotics other than as labeled without a valid veterinary prescription.
- 13. Extra-label Antibiotic Use Must follow FDA Regulations:

 Prescriptions, including extra label use of medications must meet the
 Animal Medicinal Drug Use Clarification Act (AMDUCA) amendments
 to the Food, Drug, and Cosmetic Act and its regulations. This includes
 having a valid Veterinary/Client/Patient Relationship (VCPR).
- **14. Subtherapeutic Antibiotic Use Is Discouraged:** Antibiotic use should be limited to prevention or control disease.

Cows

- » It is desirable for cows to have a BCS of at least 4 before the calving season.
- » During the calving season, cows should be checked regularly for calving difficulties. First-calf heifers may require more frequent observation and care.
- » Producers should consider contacting a veterinarian for advice or assistance if cows or heifers have calving difficulties that cannot be corrected by the producer within a reasonable amount of time.
- » Cows with mild lameness, early eye problems, mastitis or loss of body condition should be examined to determine well-being and promptly marketed as appropriate.

Calves

Castration and dehorning are done for the protection of the animal, other cattle in the herd and people who handle the cattle. In all cases producers may seek guidance from a veterinarian and advisability of analgesia or anesthesia for castration and dehorning of beef cattle, particularly in older animals, where development is more advanced.

- » Where practical, cattle should be castrated before the age of 3 months (90 days), or at the first available handling opportunity beyond this age.
- » Where practical, cattle should be dehorned while horn development is still at the horn bud stage, or at the first available handling opportunity beyond this age. This is because at this stage in development the procedure involves less tissue trauma. The selection of polled cattle is an alternative for horn management.
- » Weaning can be less stressful by castrating and dehorning calves early in life, vaccinating against respiratory diseases prior to weaning, and providing proper pre-weaning nutrition.

Stocker and Feeder Cattle

- » In all cases producers may seek guidance from a veterinarian on the advisability of vaccination protocols for incoming stocker and feeder cattle based on environmental and rearing conditions. The use of vaccines and parasite control should be based on risk assessment and efficacy of available animal health products.
- » Producers may seek guidance from a veterinarian on the availability and advisability of analgesia or anesthesia for dehorning of beef cattle, particularly in older animals, where horn development is more advanced.
- » A local anesthetic should be used when heifers are spayed using the flank approach.
- » High risk cattle should be checked at least daily for illness, lameness or other problems during the first 30 days following arrival.

- » Pregnancy in immature heifers can result in calving difficulties and subsequent trauma to the birth canal, paralysis or death of the heifer. For these reasons it is often more humane to abort pregnant heifers. This should be done under the direction of a veterinarian.
- » If heifers in the feedyard or a stocker operation deliver a full-term, healthy calf, it should be allowed to nurse to obtain colostrum. At all times, these calves must be handled humanely and provided proper nutrition. Compromised calves or fetuses should be promptly euthanized and disposed of according to local regulations.
- "Bulling" is a term to describe aggressive riding of a steer by one or more penmates. Bullers should be promptly removed from the pen to prevent serious injury.
- » Tail docking is not recommended. Increasing space per animal and proper bedding are effective means in preventing tail tip injury and necrosis.

IDENTIFICATION

Branding, ear-tagging, ear-notching, and radio frequency identification devices (RFID) are methods of identifying cattle.

- » If cattle are hot iron or freeze branded, it should be accomplished quickly, expertly and with the proper equipment. BQA guidelines recommend branding on the hip area.
- » Feeder cattle should not be re-branded when entering a feedlot unless required by law.
- » Brands should be of appropriate size to achieve clear identification.
- » Cattle should never be branded on the face or jaw.
- » Ear notching may be used to identify cattle.
- » Wattling, ear splitting and other surgical alterations for identification are strongly discouraged.





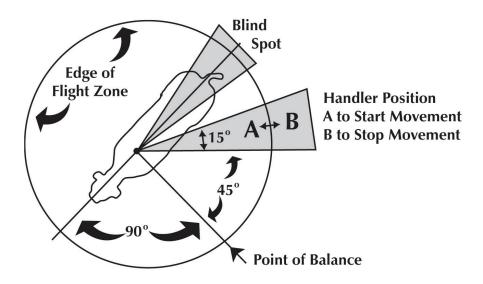
SHELTER AND HOUSING

- » Cattle in backgrounding facilities or feedyards must be offered adequate space for comfort, socialization and environmental management.
- » Pen maintenance, including manure harvesting, will help improve pen conditions.
- » Mud is more of a problem in the winter with low evaporation rates or improper drainage conditions. Accumulation of mud on cattle should be monitored as a measure of pen condition and cattle care in relation to recent weather conditions.
- » Feedyards should use dust reduction measures to improve animal performance.
- » Floors in housing facilities should be properly drained and barns and handling alleys should provide adequate traction to prevent injuries to animals and handlers.
- » Handling alleys and housing pens should be free of sharp edges and protrusions to prevent injury to animals and handlers.
- » Design and operate alleys and gates to avoid impeding cattle movement. When operating gates and catches, reduce excessive noise, which may cause distress to the animals.
- » Adjust hydraulic or manual restraining chutes to the appropriate size of cattle to be handled. Regular cleaning and maintenance of working parts is imperative to ensure the system functions properly and is safe for the cattle and handlers.
- » Mechanical and electrical devices used in housing facilities should be safe.

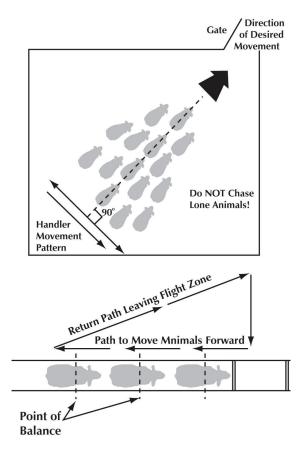
CATTLE HANDLING

Abuse of cattle is not acceptable under any circumstances.

- » Cattle should not be whipped or hit with objects that could cause injury, pain, or harm.
- » Kicking, prodding, or any other forceful actions should not be used on non-ambulatory cattle.
- » The use of sharp or hard solid objects to move cattle is not acceptable.
- » Avoid slippery surfaces, especially where cattle enter a single file alley leading to a chute or where they exit the chute. Grooved concrete, metal grating (not sharp), rubber mats or deep sand can be used to minimize slipping and falling. Quiet handling is essential to minimize slipping. Under most conditions, no more than 2% of the animals should fall outside the chute. A level of more than 2% indicates a review of the process may be of value, including asking questions such as: is this a cattle temperament issue, has something in the handling area changed that is affecting cattle behavior, etc.?
- » Take advantage of cattle's flight zone and point of balance to move them. For safety and welfare reasons, minimize the use of electric prods. Non-electric driving aids, such as plastic paddles, sorting sticks, flags or streamers (affixed to long handles) should be used to quietly guide and turn animals. When cattle continuously balk, cattle handlers should investigate and correct the reason rather than resort to overuse of electric prods.



- » Under desirable conditions, 90% or more of cattle should flow through cattle handling systems without the use of electric prods.
- » When cattle prods must be used, avoid contact with sensitive areas including the eyes, rectum, genitalia and udder.
- » Driving aids powered by AC current should never be used unless manufactured and labeled specifically for that purpose.
- » Some cattle are naturally more prone to vocalize, but if more than 5% of cattle vocalize (after being squeezed but prior to procedures being performed) it may be an indication that chute operation should be evaluated.
- » If more than 25% of cattle jump or run out of the chute there should be a review of the situation and questions asked such as: is this a result from cattle temperament or prior handling issue, was the chute operating properly, etc.?
- » Properly trained dogs can be effective and humane tools for cattle handling. Insure that barking or impeding cattle flow is minimized.
- » Cattle handling facilities can be evaluated using the BQA Assessment tools provided at bga.org



MARKETING CATTLE

The overwhelming majority of cattle are marketed in good health and physical condition. Compromised cattle should not enter intermediate marketing channels because of animal welfare concerns. Depending upon the severity of the condition, processing plant policy, and state or USDA regulations, cattle healthy enough to enter the food supply should be sold directly to a processing plant. Non-ambulatory animals should be humanely euthanized (see Humane Euthanasia section).



TRANSPORTATION

- » Knowingly inflicting physical injury or unnecessary pain on cattle when loading, unloading or transporting animals is not acceptable.
- » Cattle sorting and holding pens should allow handling without undue stress, be located near the loading/unloading facility and be suitable for herd size.
- » Provide properly designed and maintained loading facilities for easy and safe animal movement. Proper design of loading chutes as well as personnel that are knowledgeable of their proper use can assure the safety of both cattle and cattle handlers. Ramps and chutes should be strong and solid, provide non-slip footing, and have sides high enough to keep cattle from falling or jumping off. A ramp angle of 25 degrees or less will improve cattle movement.
- » All vehicles used to transport cattle should provide for the safety of personnel and cattle during loading, transporting and unloading.

- » Strictly adhere to safe load levels with regard to animal weight and space allocation.
- » Producers hauling cattle in farm and ranch trailers must ensure that adequate space is provided so that cattle have sufficient room to stand with little risk of being forced down because of overcrowding.
- » Cattle that are unable to withstand the rigors of transportation should not be shipped.
- » When the vehicle is not full, safely partition cattle into smaller areas to provide stability for the cattle and the vehicle.
- » No gap which would allow injury to an animal should exist between the ramp, its sides, and the vehicle.
- » Vehicle doors and internal gates should be sufficiently wide to permit cattle to pass through easily without bruising or injury.
- » Cattle should be loaded, unloaded, and moved through facilities with patience and as quietly as possible to reduce stress and injury.

NON-AMBULATORY (DOWNER) CATTLE

- » Marketing cattle promptly before this issue occurs will promote better quality of life for the animal and be more efficient for the operation.
- » A prompt diagnosis should be made to determine whether the animal should be humanely euthanized or receive additional care.
- » Provide adequate feed and water to non-ambulatory cattle at least once daily.
- » Move downer animals very carefully to avoid compromising animal welfare. Acceptable methods of transporting downers include a sled, low-boy trailer or in the bucket of a loader. Dragging downer animals is unacceptable. Likewise, animals should not be lifted with chains onto transportation conveyances. Animals should not be "scooped" into a frontloader bucket, but rather should be humanely rolled into the bucket by caretakers.
- When treatment is attempted, cattle unable to sit up unaided (i.e. lie flat on their side) and which refuse to eat or drink should be humanely euthanized within 24-36 hours of initial onset.
- » Even though signs of a more favorable prognosis may exist, cattle that are non-ambulatory must not be sent to a livestock market or to a processing facility.

HUMANE EUTHANASIA

Euthanasia is humane death occurring without pain and suffering, it should be utilized when an animal's condition is such that additional treatment options will not be effective. The decision to euthanize an animal should consider the animal's welfare. The producer will most likely perform onfarm euthanasia because a veterinarian may not be immediately available to perform the service. Persons who perform this task must be technically proficient and have an understanding of the relevant anatomical landmarks and the protocols used for humane euthanasia of animals. When euthanasia is necessary, an excellent reference is the BQA Euthanasia of Cattle and Calves guidelines.

Reasons for euthanasia include:

- » Fractures of the legs, hip or spine that are not repairable and result in immobility or inability to stand
- » Emergency medical conditions that result in excruciating pain that cannot be relieved by treatment
- » Animals that are too weak to be transported due to debilitation from disease or injury
- » Paralysis from traumatic injuries or disease that result in immobility
- » Disease conditions where no effective treatment is known, prognosis is terminal, or a significant threat to human health is present.

Methods of Euthanasia in Cattle

Acceptable methods for conducting euthanasia in cattle include gunshot and penetrating captive bolt with a secondary step to insure death.

Firearms for Conducting Euthanasia in Cattle

Gunshot is the most common method used for on-farm euthanasia of cattle. Effectiveness depends upon selection of the appropriate caliber of firearm, type of bullet or shot/shell, and accuracy of aim.

| Animal/ Firearm | Handgun | Rifle | Shotgun |
|--------------------|--|--|--|
| Calves | .32 to .45 caliber Solid-point bullet | .22 LR caliber or larger Solid-point bullet | .410 to 12 gauge #4-6 birdshot or slug |
| Adult | .38 to .45 caliber Solid-point bullet | .22 magnum or higher caliber¹ Solid-point bullet | 20 to 12 gauge #4-6 birdshot or slug (within 3 feet) |

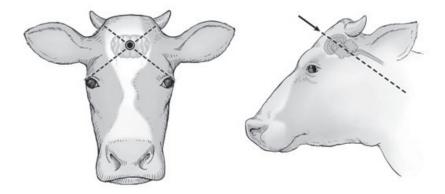
¹.22 LR is discouraged for use in euthanasia of adult cattle because it lacks sufficient ballistic energy to yield consistent results. Higher caliber rifles should be avoided as bullets may exit the body and place by-standers in danger.

Penetrating Captive Bolt for Conducting Euthanasia of Cattle

Captive bolt guns are designed to cause damage to the brain sufficient to cause an immediate loss of consciousness. However, death is not certain in all cases. Therefore use of penetrating captive bolt should be followed with a secondary step to assure death. Methods used to assure death include a second or third shot if necessary, exsanguination (bleeding out), or use of a pithing rod.

Anatomical Landmarks

Current information for adult cattle and calves indicates that the point of entry of the projectile should be at (or slightly above) the intersection of two imaginary lines, each drawn from the outside corner of the eye to the center of the base of the opposite horn. If a firearm is used it should be used within 3 feet of the target when possible and positioned so that the muzzle is perpendicular to the skull to avoid ricochet. When using penetrating captive bolt, operators are advised to restrain the head so that the captive bolt may be held flush with the skull.



Indications of Unconsciousness

When conducting euthanasia procedures one should always observe animals for the following behaviors:

- » Animal collapses immediately when shot and makes no attempt to right itself
- » Body and muscles become rigid immediately upon collapse followed by relaxation of the body, brief tetanic spasms and eventually uncoordinated hind limb movements
- » An absence of vocalization
- » An absence of eye reflexes and eyelids remain open facing straight forward
- » Immediate and sustained cessation of rhythmic breathing

These signs should be observed and monitored in all animals for which euthanasia procedures have been applied. Animals that attempt to right themselves, vocalize, blink with their eyes or begin rhythmic breathing are likely returning to a conscious state. In these cases one should immediately recheck the anatomical site used and re-shoot or re-apply the captive bolt. Confirmation of Death Criteria to be used for confirmation of death include lack of pulse, breathing, lack of corneal reflex, response to firm toe pinch (as with a hoof tester), failure to detect/hear respiratory sounds or heart beat by use of a stethoscope, graying of the mucous membranes, and rigor mortis. None of these signs alone, with exception of rigor mortis, confirms death. Rechecking of the animal for these parameters after a period of 20 minutes is a very useful method for confirmation of death.



Heat Stress Procedures

- » During periods of high heat and humidity and little wind, actions should be taken to minimize the effects of heat stress as cattle are processed and managed.
- » Provide adequate water.
- » If possible, avoid handling cattle when the risk of heat stress is high. The final decision must consider temperature, humidity, wind speed, phenotype and cattle acclimation. If cattle must be handled, a general rule is to work them before the Temperature Humidity Index (THI) reaches 84, if possible. As an example, when the temperature is 980 F and the humidity is 30%, the THI is 83. At a constant temperature, the THI increases as the relative humidity increases. Each one mile per hour increase in wind speed decreases the THI by approximately one point.
- » Work cattle more prone to heat stress first, earlier in the day or later if conditions moderate. For example, larger cattle should be processed during periods of lower THI.
- » Limit the time cattle spend in handling facilities where heat stress may be more significant.
- » Heat management tools, such as shades and sprinklers, should be considered if sufficient natural shade is not available.

Pasture Cattle Heat Stress Procedures

- » During summer, the THI in parts of the United States can be high.
- » Breeding programs should consider cattle's heat tolerance and ability to adapt to their regional environment.
- » Trees are abundant on most farms and ranches, providing natural shade and relief from heat. Cattle instinctively use shade and ponds for cooling when the THI is high.

Beef Cattle Temperature Humidity Index

| | | Relative Humidity (%) | | | | | | | | | | | |
|------------------|----------------------------------|-----------------------|----|----|----|----|----|----|----|----|----|----|----|
| | | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
| | 100 | 84 | 85 | 86 | 87 | 88 | 90 | 91 | 92 | 93 | 94 | 95 | 97 |
| | 98 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 93 | 94 | 95 |
| | 96 | 81 | 82 | 83 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
| | 94 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 |
| Ë | 92 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 85 | 86 | 87 | 88 | 89 |
| Temperature (°F) | 90 | 78 | 79 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 86 | 87 |
| aţn | 88 | 76 | 77 | 78 | 79 | 80 | 81 | 81 | 82 | 83 | 84 | 85 | 86 |
| pe | 86 | 75 | 76 | 77 | 78 | 78 | 79 | 80 | 81 | 81 | 82 | 83 | 84 |
| E E | 84 | 74 | 75 | 75 | 76 | 77 | 78 | 78 | 79 | 80 | 80 | 81 | 82 |
| | 82 | 73 | 73 | 74 | 75 | 75 | 76 | 77 | 77 | 78 | 79 | 79 | 80 |
| | 80 | 72 | 72 | 73 | 73 | 74 | 75 | 75 | 76 | 76 | 77 | 78 | 78 |
| | 78 | 70 | 71 | 71 | 72 | 73 | 73 | 74 | 74 | 75 | 75 | 76 | 76 |
| | 76 | 69 | 70 | 70 | 71 | 71 | 72 | 72 | 73 | 73 | 74 | 74 | 75 |
| | Temperature Humidity Index (THI) | | | | | | | | | | | | |

Normal <75 Alert 75-78 Danger 79-83 Emergency >84

When heat stress is extreme:

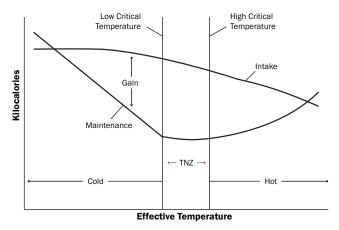
- » Ensure adequate drinking water is available.
- » Move or process cattle during the cooler part of the day.
- » Heat management tools, such as shades and sprinklers, should be considered if sufficient natural shade is not available.

Cold Stress Procedures

Cattle exposed to cold require more energy for maintenance, and performance will be reduced if action is not taken to provide for it. Some suggestions for reducing winter stress and maintaining production in cold weather are:

- » Adjust feed and energy rations to match performance requirements when cattle reach low critical temperature.
- » Provide wind breaks and shelters to reduce wind, moisture, and mud.
- » Construct feedlots and buildings in a manner that reduces winter stress due to temperature and moisture.
- » Provide bedding in severe conditions to allow cattle to lie down without direct contact with frozen ground.

Cattle will voluntarily seek protection from severe weather conditions if it is available. Modest protection by either natural or manmade structures can greatly reduce effects of extreme cold by allowing exposure to be intermittent rather than continuous.



Effect of temperature on rate of feed intake, maintenance energy requirement, and gain. Source: Ames (1980).

Estimated Low Critical Temperatures for Beef Cattle

| Coat Description | Low Critical Temperature |
|--------------------|--------------------------|
| Summer coat or wet | 59°F |
| Fall coat | 45°F |
| Winter coat | 32°F |
| Heavy winter coat | 18°F |

TRAINING AND EDUCATION

Management practices should be informally assessed every day to ensure that animal welfare is not compromised. Regardless, producers are encouraged to implement a system to verify efforts directed towards animal care and handling. This can be accomplished by:

- » Establishing a network of resources on cattle care
- » Following the Cattle Care and Handling Guidelines
- » Record training and education activities
- » Conducting self-audits or external audits of animal care and handling procedures
 - · Self-assessment guides are available online at bqa.org
- » BQA training and certification programs
 - · For more information go to bqa.org
- » Informal self-reviews should be periodically conducted by those involved with cattle feeding and care.

Training of those who handle cattle should include:

- » An understanding of the animal's point of balance and flight-zone
- » Avoiding sudden movements, loud noises or other actions that may frighten cattle
- » Proper handling of aggressive/easily excited cattle to ensure the welfare of the cattle and safety of cattle handlers
- » Proper use of handling and restraining devices
- » Recognizing early signs of distress and disease
- » How to properly diagnose common illnesses and provide proper care
- » Judicious use of animal health products and how to responsibly perform routine animal health procedures
- » Recognizing signs associated with extreme weather stress and how to respond with appropriate actions
- » Basic feeding/nutritional management of beef cattle

SELF EVALUATION

Self-evaluation is critical to continuous improvement. Producers are encouraged to utilize the BQA Self Assessments most relevant to their operation. Self Assessment guides can be found online at www.bqa.org.

CONTACTS

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