



Humane Farm Animal Care
Animal Care Standards
January 1, 2014

BISON

BISON

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PO Box 82, Middleburg VA 20118

HUMANE FARM ANIMAL CARE

Humane Farm Animal Care is a non-profit charity whose mission is to improve the lives of farm animals by providing viable, credible, duly monitored standards for humane food production and assuring consumers that certified producers meet these standards.

Humane Farm Animal Care is supported by a consortium of Animal Protection Organizations, Individuals, and Foundations.

The Humane Farm Animal Care Standards have been developed to provide the only approved standards for the rearing, handling, transport and slaughter of Bison, for use in the “Certified Humane” program. These standards incorporate scientific research, veterinary advice, and the practical experience of the farming industry. The standards are based on the Royal Society for the Prevention of Cruelty to Animals (RSPCA) guidelines, current scientific information and other practical standards and guidelines recognized for the proper care of animals.

Animal welfare is improved when livestock managers adhere to the following:

- Provision of access to wholesome and nutritious feed
- Appropriate environmental design
- Caring and responsible planning and management
- Skilled, knowledgeable, and conscientious animal care
- Considerate handling, transport, and slaughter

We are very grateful to the RSPCA; they have given us permission to use their standards and format as the basis for developing the Humane Farm Animal Care Standards.

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PART 1: INTRODUCTION

A. The Certified Humane® Label

The Certified Humane® program was developed to certify products from animals of farms and ranches that adhere to these standards. Upon satisfactory application and inspection, farmers and ranchers will be certified and may use the Certified Humane Raised and Handled® logo. Program participants are inspected and monitored by *Humane Farm Animal Care* annually. Charges levied cover inspections and program costs, which include promotional materials which help promote the products of the producers that are Certified Humane®.

B. Guide to the Use of the Animal Care Standards

- The broad objectives of the standard are described at the beginning of each section.
- The numbered requirements are the standards, all of which must be complied with.
- These standards are written to cover facilities in varying geographic and temperature regions and facilities utilizing different systems. Therefore, not all sections in these standards will apply to each facility.
- Boxed sections provide additional information or may highlight areas where the standards will be reviewed in the future.
- Farmers and ranchers must also comply with any local, state or federal requirements for bison production that affect the environment or safety of their product, as well as the Veterinary Practices Act of their state.

PART 2: FOOD AND WATER

OBJECTIVES: Livestock must have access to fresh water and a diet formulated or assessed to maintain full health and promote a positive state of well-being. Feed and water must be distributed in such a way that livestock can eat and drink without undue competition.

A. Food

FW 1: Wholesome, nutritious feed

Bison must be fed or allowed to forage for a wholesome diet which is:

1. Appropriate for their age and pregnancy status
2. Fed to them in sufficient quantity to maintain them in good health; and
3. Formulated or assessed to satisfy their nutritional needs according to guidelines set forth in The Bison Producers' Handbook.

FW 2: Free access to food

Bison must have free access to nutritious food each day, except when directed by a veterinarian.

FW 3: Feed records

- a. For other than pasture, producers must have written records of feed constituents, the inclusion rate and constituents of compound feeds, and any feed supplements, including those records or tags from a feed mill or supplier; and,
- b. Make records of feed available to the *Humane Farm Animal Care* Inspector during the inspection and at other times upon request.

FW 4: Substances prohibited in feed

- a. No feedstuffs containing mammalian-derived protein sources are permitted, with the exception of milk and milk products.
- b. Bison must not be implanted with any growth promoter.
- c. Bison must not be fed antibiotics deliberately to boost growth or feed efficiency.
- d. Antibiotics may only be given to animals for therapeutic reasons (disease treatment) and only under the direction of a veterinarian.
- e. Beta-agonists such as ractopamine and zilpaterol are prohibited in feed.
- f. Animal byproducts are prohibited

FW 5: Body Condition

- a. Bison must be fed so they sustain full health and normal reproductive capacity over their maximum foreseeable life span.
- b. Body condition change in bison must be carefully monitored according to the stage of production and season of the year.
- c. A body condition score (BCS) of 3 (on a 1-5 scale) is considered best for maintaining productivity and health. A body condition score of 2 or less requires immediate treatment.

- d. The following “Body Condition Scoring Guide for Bison” may be used to score bison.

<u>Score</u>	<u>Appearance</u>	<u>Condition</u>
1	Very thin	Many ribs visible, very sharp backbone, hip bones prominent and very sharp, rump muscles caved in, deep sunken depressions on either side of tail head, sharp topline over hump which is narrow with flat sides if viewed from front
2	Moderately thin	Some ribs visible, backbone evident but not sharp, hip bones readily seen and edges are sharp, rump muscles cave in slightly, sunken depression on both sides of tail head, hump is narrow but not sharp and sides are flat when viewed from front
3	Moderate	Ribs may be visible in summer but edges round and covered in flesh, backbone can be seen but not prominent, hip bones are visible but not sharp, rump muscles are flat and angular, slight hollowing on either side of tail head, hump is well developed but not bulging
4	Moderately fat	Ribs may be noticeable but edges round and covered in flesh, backbone not readily seen, hip bones barely visible, rump muscles are full but not bulging, slight depression on either side of tail head in bulls and no depression in cows, hump is full when viewed from front but not bulging
5	Very fat	Ribs not visible, backbone not visible and buried in fat, hip bones not discernible and rump is round and full, no depression around tail head on bulls and bulging with fat on cows, hump thick with rounded top when viewed form front

- e. An expanded version of the Body Condition Scoring Guide for Bison may be found in Appendix 1.
- f. Body condition score should be monitored with particular attention to weaning, 30 days post weaning, 90 days before calving, at calving, and at the beginning of breeding season.

Bison cows generally lose 10% of their body weight over winter in colder climates and will successfully give birth to their calf in the spring. In hot climates, the lean time may be the summer.

FW 6: Avoiding changes in food

Efforts must be made to avoid sudden changes in the type and quantity of feed, unless such changes are made under the direction of a veterinarian.

FW 7: Providing fiber

- a. Adult bison and calves over 30 days of age must be provided with forage or feed containing sufficient fiber to allow rumination.
- b. The fiber must be of such quality and length as to help avoid acidosis of the rumen

FW 8: Easy availability of food

1. Bison must have adequate amounts of forage or feed continuously available to eliminate feed competition.
2. If bison are fed from bunks or feeders, a minimum of 2 linear feet of bunk space per adult animal should be provided and space at self-feeders should be adequate to avoid competition.

FW 9: Supplying adequate nutrients

- a. Bison must not be maintained in an environment that is likely to predispose to them to nutrient deficiency.
- b. Managers must be aware of mineral deficiencies and excesses in the region of the ranch's location and correct these as appropriate.
- c. Producers must write a grazing and supplemental feeding plan and review it annually. The plan should describe stocking rates and rotation of pasture or range available for grazing the number and type of bison in the herd. A map showing size and location of grazing areas or pastures should be included. The plan should be available for the HFAC auditor to review.

The National Research Council Guidelines can be used to determine the nutrient composition of feedstuffs. The USDA Natural Resources Conservation Service Range and Pasture Handbook or your local NRCS office can help with nutrient content of local forages and rangeland use for bison grazing.

FW 10: Clean feeding equipment

- a. Feed troughs/bunks must be kept clean and monitored to avoid any stale or moldy feed.
- b. Automatic feeding equipment must be cleaned on a regular basis and maintained in good working order.

FW 11: Minimizing contamination of water by feedstuffs

Feeding and watering equipment must be designed, constructed, placed and maintained so that contamination of the animals' feed and water is minimized.

FW 12: Avoiding unsuitable feedstuffs

Control practices must be in place to minimize

- a. Livestock access to poisonous plants and unsuitable feedstuffs.
- b. Contamination of stored feeds by birds and vermin.

B. Food – Specific Provisions for Calves

FW 13: Diet requirements for calves

- a. Calves must be fed a wholesome diet, - appropriate for their age, weight, behavioral and physiological needs.
- b. Calves must not be weaned before the age of 6 months.

A low stress method weaning method as described in The Bison Producers' Handbook is recommended if calves are not left naturally with their family units or herd.

- c. Weaned calves should have adequate grazing or be provided a diet of grass hay (ad libitum).
- d. Antibiotics should not be used except therapeutically, as directed by a veterinarian.

FW 14: Colostrum

Every new calf must receive adequate colostrum from its dam, from another newly calved cow, or from a frozen colostrum source, as soon as possible after it is born and certainly within the first 8 hours of its life.

Colostrum must be received within the first eight hours of each calf's life and it should be allowed to continue to suckle for the first 24 hours after birth. When suckling the cow is not possible, sufficient colostrum should be provided manually. Approximately 6 liters (1.6 gallons) of colostrum should be administered by stomach tube, or bottle or bucket over the first 24 hrs (1.5 liters in each of 4 feedings). For a further 48 hours, calves should receive approximately 6 liters of colostrum/whole milk daily in at least two feedings.

FW 15: Orphan Calves

- a. Intentional orphaning of bison calves is prohibited.
- b. All orphaned calves or those unable to nurse should receive liquid food twice daily at least through the first 5 weeks of life until they are eating adequate quantities of suitable solid food.
- c. Sheep or goat's milk replacer should be utilized (The Bison Producers' Handbook) and mixed according to the manufacturer's instructions.
- d. Orphan calves must have access to starter feed appropriate for bison calves and grass hay or natural forage after 8 days of age.
- e. If calves are bucket fed, each calf should have access to an individual bucket.
- f. Orphan calves must not be weaned (ceasing to feed milk or milk replacer) before 6 months of age unless directed by a veterinarian. Nutritional weaning must be accomplished gradually by either diluting the milk with water or reducing the milk volume over a period of at least 5 days.

C. Water

FW 16: Water supply

Bison, including calves over 8 days, must be provided with access to an adequate supply of clean, fresh drinking water, except when directed by the attending veterinarian.

FW 17: Water for corralled bison

When bison are corralled, they must have access to water at all times, except when directed by the attending veterinarian.

*Bison generally require the following volume of drinking water:
1 gallon per 100 lbs. live weight per day.*

FW 18: Watering equipment

- a. Water troughs must be kept clean.
- b. When automatic systems are used, they should be checked at least daily to ensure that they are dispensing water if no other source of ad lib water is available.
- c. Water troughs must not result in continued wetting/fouling of loafing areas.

Type of terrain and weather conditions will dictate where water resources should be located. During the winter, water troughs should be kept clear of ice and accessible at all times. Bison should be checked regularly to assess availability of water and adjustments should be made as needed.

Whenever possible, troughs and gateways should be sited away from the bottom of slopes and dips in the ground. This will ensure better drainage and will allow areas of deep mud to be avoided.

FW 19: Water for bison on pasture or range

- a. A supply of fresh, clean water must always be available.
- b. The potential contamination of rivers, ponds, or streams with bison feces must be avoided in planning the water supply for Bison.
- c. Local, state, and federal laws must be adhered to regarding bison access to running or still water resources.

FW 20: Emergency water supply

Provisions must be in place to ensure an emergency supply of suitable drinking water is available in case normal supplies fail (e.g., due to freezing or drought)

PART 3: ENVIRONMENT

OBJECTIVE: The environment in which livestock are kept must take into account their welfare needs and must be designed to protect them from extreme physical and thermal discomfort, fear, and distress, and allow them to perform their natural behavior. Bison have a natural ability to adapt to variations in temperature and climatic conditions.

A. General

E1: Environment for Bison:

Bison must be raised with continual access to the outdoors

E 2:

- a. There must be no physical features of the environment both outdoors or indoors that may cause injuries to the animals that can be avoided. Injury is defined as damage severe enough for the formation of granular scar tissue to an extent significantly greater than would be caused by accidental bumps and scratches.
- b. Manmade surfaces where livestock walk must be made of non-slip material or be maintained so as to reduce the risk of slipping and not cause foot damage.

Excessive occurrence of the following may be indicators of environmental problems.

Wounds Knee, hock, swelling/calluses

Neck calluses Broken tails

Chronic scar tissue Abscesses

Hair loss Hematomas

Lameness due to laminitis, interdigital infections, bruised soles, soft feet

E 3: Maintenance of passageways

Facility alleyways, passageways and gateways must be maintained in order to prevent damage to animals' hooves.

E 4: Limiting the use of toxic substances

Animals must not come in contact with toxic fumes or chemicals from any source – natural or manmade.

E 5: Electrical installations

All electrical installations must be:

1. Inaccessible to animals;
2. Well insulated;
3. Safeguarded from rodents;

4. Properly grounded; and
5. Regularly tested.

E 6: Design of passageways

- a. Passages, such as gates or alleys, must be of such a design and width, and so constructed, to allow two adult bison to pass freely (except in chutes and races)
- b. Chutes and races should be designed with curves to prevent balking and permit bison to move smoothly through the system in a single line.

Resources in the Reference Section of these Standards include a description of materials and designs for handling facilities for bison.

B. Thermal Environment and Ventilation

E 7: Range conditions

Bison are usually raised under pasture or range conditions in the natural environment. Bison should have access to features that allow relief from extreme cold or heat during severe thermal swings. Natural landscapes such as draws, swales, trees, large rocks and outcroppings may serve this purpose.

E 8: Corrals or pens

Corrals or pens should be open to the environment with natural or manmade non-slip surfaces.

E 9: Extreme Weather

Animals exhibiting stress behaviors in extreme weather conditions should be provided an alternative environment and given an opportunity to perform behavioral adjustments to relieve stress.

C. Wind Breaks – Sun Shade

E 10: Thermoregulation

- a. All bison ranches and facilities must provide bison with the opportunity to thermoregulate in cases of extreme temperatures and weather conditions.
- b. Bison must be provided with adequate space to perform behavioral adjustments important to thermoregulation and have access to natural shelters or barriers.

E 11: Windbreaks

Windbreaks can consist of natural tree belts, fences, or manmade structures that are strategically placed to block prevailing winds. Natural geographic features such as hills or canyons may be used in pasture or range grazing conditions.

E 12: Shade and cooling

For hot or humid summer conditions, a natural water system must be accessible to the bison to provide cooling.

Bison may not seek shade even in sunny hot weather due to the natural loft of the hair which provides shade and ventilation.

E 13: Bare ground

- a. Bare areas of range or pasture should meet Environmental Protection Agency Standards for control of dust.
- b. During periods of prolonged wetness, mud must be managed so the depth of mud is not excessive or sufficient to cause bison difficulty walking to and from feeding and watering areas.

D. Area/Space Allowances

E 14: Lying area

Bison must have access at all times to a lying area which is:

1. Well-drained; and,
2. Of sufficient size to accommodate all bison lying down at one time in normal resting posture.

E 15: Hard floors

- a. Pens should be designed and made from materials that are appropriate for bison and impervious to water and urine.
- b. Surfaces must be slip resistant and grooved or scored but not abrasive to the livestock's feet. Diamond grooves 4 inches apart with a depth of 0.5 inches are preferred.
- c. Hard surfaced pens used for gathering or health recovery should be properly bedded with moisture absorbent bedding or rubber mats.
- d. Manure handling systems must be considered when using hard surface flooring systems, and installed unless manure accumulation can be prevented by other methods.
- e. Acceptable hard floors include grooved or unfinished concrete or rubber mats.

E 16: Feeding pens

- a. Growing bison must be grouped according to size and age with consideration to the animals' social structure.
- b. Bison may be maintained in feedlots for 90 days prior to slaughter.
- c. Open feedlots should be sloped to promote proper drainage away from resting/loafing areas, water supply, feed troughs/bunks, and fence lines.
- d. All local, state and federal environmental regulations must be adhered to.

- e. Requirements for space and slope of pens will change with drier or wetter climates, seasons, and soil types. Feedlots must be constructed to provide for adequate space, social and physical environment and comfort of the bison based on the geographic region in which they are located.

E 17: Space allowance

- a. Feeding pens for bison should allow a minimum of 400 square feet of space per animal and should be limited to 100 animals per pen.
The space allowance for bison held in pens should be calculated in relation to the whole environment, the age, sex, live weight, and behavioral needs of the stock, taking account of the presence of horns and the size of the group.
- b. Every animal must have sufficient access to water, feed, and a resting area.
- c. Bunk space for fence-line feeding in feeding pens should be at least two (2) feet per animal. Space at self-feeders should be adequate to avoid competition so that all animals maintain body condition. Less space may be provided for young animals and calves penned for veterinary care purposes.
- d. Bison must be provided with conditions in which they remain reasonably clean, for example, by avoiding local crowding.

E 18: Special holding areas

Bison must not be closely confined except in the following circumstances and even then only for a maximum of 2 hours:

1. For the duration of any examination, routine test, blood sampling, vaccination or tagging, or veterinary treatment;
2. For the purpose of marking, washing or weighing; or,
3. While they are awaiting loading for transportation.

E 19: Freedom of movement

Except as noted above (E18) all Bison must at all times have:

1. Sufficient freedom of sideways movement to be able to groom themselves without difficulty;
2. Sufficient room to lie down and freely stretch their limbs; and
3. Sufficient room to rise and turn around.
4. Cattle must not be tethered.

E. Calving Environment

E 20: Monitoring

- a. Appropriate space and distance from herd mates and people must be provided to avoid disturbing calving cows.
- b. Producer must keep heard observation records during calving season for calving problems to avoid suffering in case of difficulties in birthing.

Bison experience very few difficulties in calving. Excess human intervention can create unneeded stress of the mothers.

F. Handling Facilities

E 21: Passageways

- a. Alleys and gates must be designed and operated so as not to impede the movement of bison.
- b. When operating gates and catches, every effort should be made to reduce excessive noise, which may cause distress to the animals.
- c. Consideration should be given to fitting noise reduction mechanisms as necessary.
- d. Walls, alleys and gates should be built solidly and designed to minimize stress on the animals and provide for the safety of handlers.
- e. Walls of alleys and gates should be a minimum of 5 feet high with nearly-solid sides so bison will not attempt to escape through the gaps.

E 22: Maintenance of restraint equipment

- a. Hydraulic or manual restraining chutes must be adjusted for the proper size of bison.
- b. Regular cleaning and maintenance of all working parts is imperative to proper working of the system and safety of the bison and handlers.
- c. Hydraulic restraint systems should have their pressure relief valves adjusted to avoid excessive pressure applied to bison during restraint.
- d. Signs of excessive pressure exerted by a squeeze chute are vocalization when the animal is caught, straining, and difficulty breathing.

E 23: Solid-sided equipment

- a. It is strongly recommended that solid sides be used in races, chutes, crowding pens and loading ramps to avoid distraction, balking and efforts to escape.
- b. Chutes should have a solid roof as well as solid sides with drop panels or windows.

E 24: Loading facilities

- a. Loading facilities:
 1. Should provide a safe working environment for handlers.
 2. Must be kept clean; and,
 3. Must be well lit with a minimum of shadows.
- b. Both loading ramps and tailgates must be fitted with rails or some means of preventing the bison from slipping and falling off.
- c. Loading ramps with less than a 5% grade should be utilized and fitted with appropriately designed and spaced foot battens to minimize slipping. The hooves should fit easily between the battens (cleats) but the spacing should be narrow enough to prevent slipping.

G. Specific Provisions for Calves

E 25: Facilities for calves

- a. Pastures or range for calving should be selected to provide cows with a dry calving environment and access to natural or artificial shelter as weather conditions dictate.

H. Fencing

E 26: Design and maintenance of fences

- a. All fencing must be adequately inspected and maintained on a regular basis.
- b. In particular, electric fences must be designed, installed, used and maintained so that contact with them does not cause more than momentary discomfort to the bison.
- c. Fences of feeding pens should be a minimum of 5 feet in height and constructed of sturdy pipe and/or cable materials.

PART 4: MANAGEMENT

OBJECTIVES: A high degree of caring and responsible management is vital to ensure good animal welfare. Managers and caretakers must be thoroughly trained, skilled and competent in bison handling, husbandry and welfare, and have a good working knowledge of their system and the livestock under their care.

A. Managers

M 1: Farm Plan

All records, checklists, health plans, contingency plans, farm pest control plans, written standard operating and emergency procedures, policies and publications that the HFAC Animal Care Standards for Beef Cattle require the producer to keep and maintain, must be made available for the HFAC inspector.

M 2: Understanding the standards

Managers must ensure that:

1. All stock-keepers have a copy of the Humane Farm Animal Care, *Animal Care Standards for Bison*; and the *Bison Producers' Handbook*,
2. They and the stock-keepers are familiar with the standards; and
3. They and the stock-keepers understand the standards.

M 3: Management and record keeping activities

Managers must:

1. Develop and implement suitable training for stock-keepers, with regular updates and opportunities for continuing professional development. Producers/Managers must be able to demonstrate that staff with responsibilities for stock care have the relevant and necessary skills to perform their duties and, if necessary, are given the opportunity to participate in an appropriate form of training;
2. Develop and implement plans and precautions to cope with emergencies that affect the well-being of animals, such as fire, flood and interruption of supplies;
3. Provide an Emergency Action Plan, sited adjacent to a telephone point, highlighting the procedures to be followed by those discovering an emergency such as fire, flood, or power failure;
4. Ensure the Animal Health Plan (see H1) is implemented and regularly updated and that the required data are recorded appropriately;
5. Maintain and make available to the *Humane Farm Animal Care* Inspector, records of health procedures, veterinary care and medications. These records must include documentation on all incoming and outgoing stock on the farm, as well as types and quantities of medicines used;
6. Comply with all local, state and federal regulations.

M 4: Mitigating problems

- a. Managers must understand the times and circumstances in which bison are prone to welfare problems on their unit or ranch.

- b. Managers must be able to demonstrate their competence in recognizing and dealing with these problems and take measures to prevent the occurrence of situations that may result in a welfare problem.

M 5: Awareness of the welfare implications of management practices and the natural environment

- a. Managers must be aware of the welfare implications of administering injections, oral dosing, identification procedures, and other animal health or veterinary care procedures.
- b. Managers must be aware of welfare requirements during the calving and breeding seasons arising from the vulnerability of newborn calves, post-partum condition of cows and the competition of bulls during mating.

M 6: Training

Prior to being given responsibility for the welfare of livestock, managers must be properly trained and be able to:

1. Recognize signs of normal behavior, abnormal behavior and fear;
2. Recognize signs of common diseases, understand their prevention and control, and know when to seek veterinary help;
3. Have a basic knowledge of what constitutes proper nutrition in bison;
4. Have a basic knowledge of body condition scoring;
5. Understand functional anatomy of the normal foot, its care and treatment;
6. Understand the functional anatomy of the normal teat and udder;
7. Have a knowledge of calving and the care of the newborn calf; and,
8. Understand fundamental principles of raising and handling bison.

M 7: Compassionate treatment

- a. Managers must be able to demonstrate competence in handling animals in a positive and compassionate manner.
- b. Managers must be able to demonstrate their proficiency in low-stress handling and in procedures that have potential to cause stress to bison.

M 8: Complaints to Operators

- a. To be certified, an Operation must maintain systems for receiving, responding to, and documenting complaints alleging the Operation's failure to comply with *Humane Farm Animal Care* standards.
- b. Whenever an Operator receives a complaint, the Operator must:
 1. Take appropriate action to respond to the complaint and
 2. Correct any deficiency in the products or services that affect their compliance with the requirements for certification.
- c. Written records must be retained by the Operation for a minimum of 3 years from the date of the records' creation. Records must contain information documenting:
 1. All complaints received (written or verbal),
 2. The actions taken by the operator to respond to the complaint.

- d. These records must be made available to *Humane Farm Animal Care* upon request. *Humane Farm Animal Care* will review these records at least annually, during the operation's annual inspection.
- e. If a farm operation has "organic" certification, operators must notify *Humane Farm Animal Care* if an adverse ruling related to the operation's organic status (such as suspension or revocation of certification, fine, or sanction) is levied against the operation by another certifier or by a governmental program which regulates the industry.

B. Handling

M 9: Quiet handling

Bison must be handled quietly and firmly at all times, with care to avoid unnecessary pain or distress. Low-stress handling must be taught and practiced when working with bison.

M 10: Anticipating animal stress factors

Animal handlers must be trained to understand and identify the stress factors that bison may be subjected to in advance of handling. They must appreciate how bison react towards other bison, towards humans and to strange noises, sights, sounds and smells, and work to minimize these stressors.

Bison have the following behavior characteristics, which must be taken into consideration when being moved:

- 1. They have a wide field of vision and can see moving objects even at long distance, so whenever possible their far vision should be restricted.*
- 2. They have acute hearing, so they should not be subjected to loud noises.*
- 3. They are herd animals and should not be left in isolation.*

M 11: Handling in passageways

- a. Bison must not be driven unless the exit or the way forward for the lead animal is clear.
- b. Bison must not be intentionally rushed or run along alleyways, passageways or through gateways.

If more than 1% of the bison fall during handling, this is an indication that either handling methods or facilities need to be improved.

M 12: Benign handling aids

- a. Sticks and flags may be used as benign handling aids, i.e., as extensions of the arms.
- b. Sticks or other items must not be used to beat bison.
- c. The use of electric prods is prohibited, except when animal and human safety is in jeopardy, and it is the means of last resort.

M 13: Equipment

- a. A bison handling unit must be available, comprised of a collecting system and a method of restraint, appropriate to the type, temperament and numbers of stock to be managed.
- b. Passages and alleys should be of sturdy construction, a minimum of 5 feet high or adequately high for type of material utilized and type of animals being handled, preferably with nearly-solid walls so bison will not attempt to escape through the slats.

M 14: Calving aids

- a. Calving aids must only be used in rare circumstances when the cow is in distress to assist in a delivery.
- b. Before any type of calving aid is used, the cow must be examined to ensure that the calf is properly presented and of a size for which natural delivery can be reasonably expected, without causing undue pain and distress to either the dam or the offspring.

M 15: Rapid diagnosis and treatment

- a. All efforts must be made to ensure a rapid and proper diagnosis/treatment of any sick animal.
- b. If an injured or severely ill animal does not respond to therapy, euthanasia must be considered.
- c. No live animal can leave the farm unless it is able to walk unassisted.
- d. Injured bison may be slaughtered on-farm per USDA- Food Safety Inspection Service provisions.

M 16: Non-ambulatory animals

- a. For non-ambulatory animals, whatever type of lifting gear is used, care must be taken not to cause unnecessary pain or distress to the animal.
- b. Hoisting by chains, dragging, lifting without complete body support, and other means that can cause further physical damage are prohibited.

For acceptable methods of moving non-ambulatory bison refer to the American Meat Institute Guidelines which can be found at www.certifiedhumane.org under the 'Standards' section.

C. Identification

M 17: Identification equipment

Eartags or identification devices should be applied with care to avoid unnecessary pain or distress.

M 18: Marking

The marking of bison must be done with care by trained, competent operators so as to avoid unnecessary pain or distress to the animals both at the time of marking and subsequently. Freeze-branding is preferable to hot-branding.

M 19: Temporary marking

Methods used for temporary marking must be non-toxic, e.g. crayons, paint and chalk markers especially developed for livestock.

D. Equipment

M 20: Using equipment

When equipment is installed which affects animal welfare, managers must be able to:

1. Operate the equipment properly;
2. Maintain the equipment;
3. Recognize common signs of malfunction; and
4. Appropriately act in the event of a failure of this equipment.

M 21: Automatic equipment

All automatic equipment (e.g. waterers, feed dispensers, electric fence) must be regularly inspected by a stockperson, or other competent person, to check if they are working properly. When a defect is found in the automatic equipment:

1. The defect must be rectified promptly; or,
2. If this is impracticable, such measures must promptly be taken (and must be maintained until the defect is rectified) as are required to safeguard the livestock from suffering unnecessary pain or distress as a result of the defect.

E. Dogs and natural predators

M 22: Managing dogs

Dogs, including working stock dogs, must be properly trained, must not cause injury or distress to bison and must be kept under control at all times.

Dogs are typically not used to herd or move bison but may be on the premises for other reasons. The same standard will apply to all canines present on the premises.

M 23: Managing predators

a. If natural predator species are known to be a hazard in the region, a predator plan should be developed with local or state wildlife control agencies utilizing non-lethal methods of control if possible or exclusion.

PART 5: HEALTH

OBJECTIVES: The environment in which livestock are housed must be conducive to good health. All producers must have a herd health plan that is in accordance with good veterinary and husbandry practices. The health of the stock should be maintained to the highest standards possible, and any health problems should be addressed as quickly and completely as can reasonably be achieved.

A. Health Care Practices

H 1: Animal Health Plan

An Animal Health Plan (AHP) must be drawn up in consultation with a veterinarian familiar with bison and regularly updated. The AHP must include:

1. Details of vaccinations;
2. Information on treatments and other aspects of herd health;
3. Causes of morbidity and mortality, when known;
4. Tolerance limits on overall herd performance; and
5. Biosecurity provisions.

H 2: Mitigating health problems

- a. Operators must take steps to provide safe and reasonable distance from sheep, goats, wildebeest or fallow deer due to the risk of transmission of Malignant Catarrhal Fever (MCF) virus to which bison are very susceptible. Prevailing winds, geography and environmental conditions must be considered to determine the distance.
- b. Sudden deaths, disease outbreaks or mortality that cannot be readily identified by the manager must be investigated in consultation with a veterinarian.

H 3: Health monitoring

- a. The herd must be monitored for performance characteristics including: production disease, infectious diseases, and injury as a result of corralling or husbandry practices. Some examples are:
 - Stress (may be evident as increased disease rate, thin animals, restlessness, persistent grunting)
 - Enteritis or parasites (may be evident as diarrhea)
 - Problems at Calving
 - Repeated Physical Injuries
 - Respiratory Diseases
 - Body Condition of individual animals as well as herd
 - Number of non-ambulatory animals
- b. If any herd performance parameters fall outside the tolerance limits identified by the producer or the AHP, or casualty and culled bison numbers exceed those specified in the AHP, the veterinarian must be consulted and management practices adjusted to try to resolve the problem.

H 4: Segregation pens

- a. Contagious or downed animals must be segregated and cared for separately from the herd.
- b. Any bison suffering from illness or injury must be treated without delay, and veterinary advice sought when needed. If necessary, such animals must be humanely euthanized.
- c. Isolation pens must be of a size that is appropriate for the age, size and breed of the animal.
 1. The animal must be able to stand up, turn around, lie down, rest and groom itself without hindrance.
 2. Water and feed must be readily accessible at all times, unless otherwise directed by the veterinarian.
- d. Water and feed must also be readily available to non-ambulatory animals, even if they are not housed in an isolation pen.
- e. Urine and dung from hospital pens for sick and injured animals must be disposed of in a manner that prevents spread of infection to other stock.
- f. Pens must be constructed to facilitate effective cleaning and disinfection of surfaces, and the possible removal of a carcass.

H 5: Managing newly arrived animals

- a. Replacement animals brought in from other sources must be quarantined 2 weeks.
- b. Newly arrived animals should be vaccinated, and/or appropriately treated for disease, illness, parasitic infestation or other health-related problems in accordance with the AHP before integration into the herd.

H 6: Mitigating behavioral problems

If abnormal behavior activities develop repeatedly and inhibit normal functioning of the animal in any particular pen, a program of modification/enrichment must be pursued until the problem is overcome.

Possible abnormal behavior patterns:

1. *Repeated rubbing in the absence of disease*
2. *Tongue rolling/aerophagia*
3. *Pica (licking/chewing/eating solid objects)*
4. *Eating soil/sand/dirt*
5. *Navel sucking*
6. *Ear sucking*
7. *Urine drinking*
8. *Persistent grunting.*

H 7: Controlling parasites

It is essential that all practical measures be taken to prevent or control external and internal parasitic infestations.

H 8: Foot care

Although foot problems are rare in bison raised under natural conditions, animals should be monitored for lameness. If a problem is identified, a foot care plan must be developed as part of the AHP, using methods that are appropriate to the condition and the individual ranch.

- *As an aid to assessing the status of lameness in the herd, locomotion scoring may be utilized.*
- *Locomotion scores:*

1. *No unevenness of gait, no apparent tenderness*
2. *Uneven gait, slightly tender, some outward rotation of the limbs in the outside of the turning circle (abduction) or inside rotation of those limbs on the inside of the turning circle.*
3. *Slight obvious lameness, but not affecting behavior*
4. *Obvious lameness, difficulty in turning, behavior pattern affected, some weight loss*
5. *Extreme difficulty in rising, difficulty in walking, adverse effects on behavior pattern, noticeable weight loss.*

- *[Manson & Leaver 1988]*

H 9: Physical alterations

Castration and Dehorning are Prohibited

Appendix 2: Pain Control – *In case of emergency procedures, they must be done using anesthesia and pain control.*

B. Casualty Animals

H 11: Euthanasia

- a. Each farm must have provisions for humane euthanasia without delay of casualty (severely injured) bison, either by on-farm methods carried out by a trained, competent member of the staff, or by a licensed processor; or by a veterinarian called to carry out the procedure.
- b. If there is any doubt as to how to proceed, the veterinarian must be called at an early stage to advise whether treatment is possible or whether humane euthanasia is required to prevent suffering. If an animal is in severe pain that is uncontrollable, then the animal must be promptly and humanely euthanized.

- c. It is acceptable to euthanize an animal to prevent further severe suffering if a method of humane euthanasia is available on the premises and there is someone competent to undertake the procedure. Nothing stated here is intended to discourage the prompt diagnosis and appropriate treatment of any ill or injured animal.

A copy of the AVMA Guidelines for the Euthanasia of Animals is available on the HFAC website, www.certifiedhumane.org in the Standards section.

H 12: Carcass Disposal

Disposal of the carcass must meet local requirements and regulations.

PART 6: TRANSPORTATION

Objectives: Animal transport systems must be designed and managed to ensure livestock are not subjected to unnecessary distress or discomfort. The transport and handling of livestock must be kept to an absolute minimum. Personnel involved in transport must be thoroughly trained and competent to carry out the tasks required of them. ALL bison transported to slaughter as Certified Humane® must have spent their entire lives on Certified Humane® farms.

T 1: Loading facilities

- a. Loading facilities
 - 1. Must be clean, and
 - 2. Must be well lit.
- b. Both loading ramps and tailboards must be fitted with means of preventing bison of all sizes from slipping and falling off.
- c. Ramps may be of concrete or earth and, when concrete, must be designed to avoid slippage.
- d. Loading ramps with less than a 5% grade should be utilized and fitted with appropriately designed and spaced foot battens to minimize slipping. The hooves should fit easily between the battens (cleats) but the spacing should be narrow enough to prevent slipping.

T 2: Passageways

- a. Alleyways and gates must be designed and operated so as not to impede the movement of animals.
- b. When operating gates and catches, every effort must be made to reduce excessive noise, which may cause distress to the animals.
- c. If noise from the equipment is causing the animals distress, noise reduction mechanisms must be installed.

T 3: Transport personnel

- a. Personnel in charge of bison transporters must be able to demonstrate competence in handling bison when loading and unloading them, and while in transit.
- b. Animal handlers/transporters must be knowledgeable about likely stressors and how bison react towards other bison, towards humans and to strange noises, sights, sounds and smells.

Bison have the following behavioral characteristics, which must be taken into consideration when they are moved:

- *Bison have a wide field of vision and may startle if they see moving objects even at long distances.*
- *Bison have acute hearing, so they should not be subjected to loud noises.*
- *Bison are herd animals and should not be isolated from the herd.*

T 4: Handling in passageways

- a. Bison must not be driven unless the exit or the way forward for the lead animal is clear.
- b. Animals must not be intentionally rushed or run along alleyways, passageways, or through gateways.

T 5: Benign handling

- a. Sticks and flags may be used as benign handling aids, i.e., as extensions of the arms.
- b. No animal must be pulled, dragged or lifted by the tail, skin, ears or limbs.
- c. Aggressive tail twisting (e.g. jacking) can cause tails to break, especially in young animals, and is prohibited.
- d. Sticks must not be used to beat bison.
- e. The use of electric prods is prohibited, except when animal or human safety is in jeopardy and it is the means of last resort. They should not be routinely carried by handlers.
- f. If more than 1% of the bison fall during handling, this is an indication that either handling methods or facilities need to be improved.

T 6: Pre-transport feed and water

- a. All bison, including calves, must have access to water up to the point of transport.
- b. All bison, including calves, must have access to food until 5 hours prior to loading onto the truck or later.

T 7: Transport time

- a. The timing of transport for any purpose must be planned between the transporter and producer, and slaughterhouse, if applicable, to minimize traveling and waiting time for the bison.
- b. Bison should be separated in the trailer with regard to size, temperament, and family groups when they exist.

T 8: Records of transport

Producers must keep records of transport of animals leaving their farm, including:

- a. Date of transport
- b. Number of animals transported and their destination
- c. Trucking company
- d. Type of vehicle used

T 9: Casualty animal transport

- a. A sick or injured ambulatory animal may only be transported:
 1. If it is being taken for veterinary treatment or it is being taken to the nearest available place for humane slaughter; and
 2. If the said animal is suitable for loading, traveling and unloading (can walk unassisted).
- b. No animal with a BCS of less than 2 may be transported or leave the farm unless for veterinary treatment.

PART 7: SLAUGHTER

A: Slaughter procedures

S 1: Minimizing pre-slaughter handling

The pre-slaughter handling of livestock must be kept to an absolute minimum.

S 2: Trained personnel

Personnel involved in the slaughter must be thoroughly trained and competent to carry out the tasks required of them.

S.3: Slaughter Systems

All slaughter systems must be designed and managed to ensure livestock are not caused unnecessary distress or discomfort.

a. The slaughter plant must meet the American Meat Institute (AMI) guidelines (as written by Dr. Temple Grandin).

AMI Guidelines can be found at www.certifiedhumane.org under the 'Standards' section.

b. The slaughter plant must be inspected by Humane Farm Animal Care's inspectors to verify compliance with AMI guidelines.

c. HFAC will also audit the slaughter plant for traceability to ensure that all the products labeled with the Certified Humane® logo originate from Certified Humane® farms.

PART 8: APPENDICES

Appendix 1: Bison Body Condition Scoring

BODY CONDITION SCORING GUIDE FOR BISON

This table can be used to score bison in the field.

BCS	RIBS	SPINE (backbone)	HIP BONE	TAIL HEAD	HUMP
1 very thin	prominent in summer; many ribs visible; in winter, visible but less distinct	very sharp; angle of muscle is steep	prominent and edges are very sharp; rump muscles are caved in	devoid of fat; deep sunken depressions on either side of the tailhead; no fat palpable if bison is in a squeeze	sharp topline; narrow with flat sides when viewed from the front; sharp contrast between the hump and shoulder when viewed from the side
2 moderately thin	some ribs visible in summer and winter	evident but not sharp; angle of muscle is steep	readily seen and edges are sharp; rump muscles cave in slightly	sunken depressions on both sides of the tailhead; small amount of fat palpable if bison is in a squeeze	hump is narrow but not sharp; sides are flat when viewed from the front; distinct contrast between the hump and the shoulder
3 moderate	may be visible in summer but not sharp or distinct; edges round and covered in flesh; not visible in winter	not prominent but can be seen; angle of the muscle has a moderate slope similar to the roof of a tent	visible but not sharp; rump muscles are flat and angular	slight hollowing on either side of the tailhead; some fat palpable if bison is in a squeeze	well developed but not bulging; noticeable distinction between the hump and shoulder
4 moderately fat	may be visible in summer but not sharp or distinct; edges round and covered in flesh; not visible in winter	not readily seen; angle of the muscle has a gentle slope	barely visible; muscles are full but not bulging	slight depression in bulls and no depression in cows	full hump when viewed from the front but not round and bulging; little distinction between the hump and shoulder when viewed from the side.
5 very fat	not visible in winter or summer; covered in fat	not visible and is buried in fat; angle of muscle has little slope and is flat	covered in fat and is not seen; rump is rounded out and full	no depression (bulls) or bulging with fat (cows) on both sides of the tailhead	thick with rounded top when viewed from the front; blends into the shoulder when viewed from the side

Source: Alberta Agriculture, "What's the Score; Bison"

Appendix 2: Pain Control

Pain Management in Calves and Cattle

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Castration and dehorning are painful, but necessary husbandry procedures. Castration is necessary to reduce injuries in cattle associated with aggression and mounting behavior in males. It is also necessary to prevent mis-mating by genetically inferior males. Dehorning is required to avoid injury to animals and humans. Not all cattle have horns, but those that do quickly learn that they have a distinct advantage over their polled counterparts in battles over dominance. So, the question regarding castration and dehorning is not should we perform these procedures; but how should we perform them in a way that minimizes pain and distress to the animals?

Careful adherence to the procedures outlined in the Beef, Dairy and Young Dairy Beef standards will minimize the pain and discomfort associated with these important management practices. However, when conditions arise that make it necessary to implement pain management beyond local anesthesia, participants of the Certified Humane program should be cognizant of the following.

At the present time there are no drugs labeled for the control of pain in cattle. For example, Flunixin Meglumine (Banamine) is a non-steroidal drug labeled as having anti-pyretic (fever reducing) and anti-inflammatory activity in cattle, but it is not an analgesic (capable of providing pain relief). Furthermore, according to the label directions, Banamine is for intravenous use only. To use it for pain in cattle or by any other route than intravenously constitutes extra-label use of this drug (ELDU) which until passage of the Animal Medicinal Drug Use Clarification Act (AMDUCA) in 1996 was illegal. AMDUCA amended the Federal Food, Drug, and Cosmetic Act, legalizing extra-label drug use by and under the order of a licensed veterinarian within the context of a valid veterinarian-client-patient relationship. So, what does this mean? In short, it means that the use of Banamine or Meloxicam or any other drug used for pain that is not specifically labeled for use in cattle or for this purpose (i.e. ELDU) in the United States requires strict adherence to the provisions of AMDUCA which include the following:

Extra-label drug use (ELDU):

- Is permitted only by or under the supervision of a veterinarian.
- Is allowed only for FDA-approved animal and human drugs.
- Requires a valid Veterinarian/Client/Patient Relationship as a prerequisite for all ELDU.
- Is for therapeutic purposes only (when the animal's health is threatened). It does not apply to drugs for production use.
- Rules apply to dosage form drugs and drugs administered in water. ELDU in feed is prohibited.
- Is not permitted if it results in a violative food residue, or any residue which may present a risk to public health.
- FDA prohibition of a specific ELDU precludes such use

When and if these conditions can be met, ELDU is permissible provided that the accurate records of the animals treated are maintained according to the following:

Strict record-keeping of ELDU is required; the information that should be recorded follows.

- Animal identification, either as individuals (I.D. numbers or names) or a group (brand or owner).
- Animal species treated.
- Numbers of animals treated.
- Conditions being treated.
- The established name of the drug and active ingredient.
- Dosage prescribed or used.
- Duration of treatment.
- Specified withdrawal, withholding, or discard time(s), if applicable, for meat, milk, eggs, or animal-derived food.
- Keep records for 2 years.
- FDA may have access to these records to estimate risk to public health.

Finally, whenever drugs are used in an ELDU manner, the bottle or drug container must include the following information on the label:

- Name and address of the prescribing veterinarian.
- Established name of the drug.
- Any specified directions for use including the class/species or identification of the animal or herd, flock, pen, lot, or other group; the dosage frequency, and route of administration; and the duration of therapy.
- Any cautionary or advisory statements.
- Your specified withdrawal, withholding, or discard time for meat, milk, eggs, or any other food.

In summary, castration and dehorning are health management procedures that cause discomfort in cattle. Conducting them at the earliest age practicable should be a primary objective. In those infrequent situations where these procedures may need to be conducted in older calves, pain management options should be considered keeping in mind that use of unapproved drugs must follow the AMDUCA regulations. Meloxicam tablets administered orally at the rate of 0.45 mg/lb (1 mg/kg) are reported to be a cost-effective means of providing analgesia in cattle. In European countries where Meloxicam is approved a 15-day meat and 5-day withdrawal time for milk is recommended. Flunixin meglumine used as an anti-inflammatory in post-surgical conditions provides limited analgesia. It is important that if used for reducing inflammation that it be administered intravenously, otherwise it constitutes ELDU. The use of Flunixin meglumine by the intramuscular route causes significant damage to tissues at the injection site and may significantly alter withdrawal times for meat and milk. Persons considering ELDU should work closely with their veterinarians for appropriate guidance in the safe and proper use of drugs in livestock.

Coetzee JF. Recommendations for Castration and Dehorning of Cattle. Proceedings of the American Association of Bovine Practitioners, 2010, 43:40-45.

Coetzee JF, KuKanich B, Mosher R, Allen PS. Pharmacokinetics of intravenous and oral meloxicam in ruminant calves. 2009. Vet Ther 10:E1-E8.

Heinrich A, Duffield TF, Lissemore KD, Squires EJ, Millman ST. The impact of meloxicam on postsurgical stress associated with cautery dehorning. 2009. J Dairy Sci, 92:540-547.

REFERENCES

- American Association of Bovine Practitioners, Animal Welfare Committee. 1999. *Practical Euthanasia in Cattle, Considerations for the Producer, Livestock Market Operator, Livestock Transporter, and Veterinarian*. American Assoc. of Bovine Practitioners. Rome, GA. (<http://www.aabp.org/resources/euth.pdf>)
- AVMA Guidelines for the Euthanasia of Animals*. American Veterinary Medical Association. 2013
- Animal Behavior and the Design of Livestock and Poultry Systems*. Proceedings from the Animal Behavior and the Design of Livestock and Poultry Systems International Conference, Indianapolis, IN. Pub. NRAES (Northeast Regional Agric. Eng. Service) April 1995.
- The Bison Producers' Handbook*. National Bison Association/Canadian Bison Association. 2010
- Body Condition Scoring Guide for Bison, Source: Alberta Agriculture, "What's the Score; Bison"
[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex9622/\\$FILE/bcs-bison.pdf](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex9622/$FILE/bcs-bison.pdf)
- Grandin, T. 2001. *Livestock Trucking Guide*. National Institute for Animal Agriculture. Bowling Green, KY.
- Grandin, T. 2007. *Livestock Handling and Transport*. CABI, Wallingford, UK.
- Grandin, T., Editor. 2009. *Improving Animal Welfare: A Practical Approach*. CAB Int., Wallington, Oxon, UK.
- Guidelines For The Care And Use Of Animals In Production Agriculture*. Nebraska Food Animal Care Coalition.
- Insiders' Guide to Bison Handling and Management DVD. National Bison Association. 2012
- Manson, J. F., and J. D. Leaver. 1988. The influence of concentrate amount on locomotion and clinical lameness in dairy cattle. *Brit. Soc. Anim. Prod.* 47:185-190.
- North Dakota State University Bison Research Reports at
http://www.ag.ndsu.nodak.edu/carringt/livestock_research_program.htm
- Nutrient Requirements of Beef Cattle* 7th ed. National Research Council Publication. 2000. National Academy Press, Washington, DC.
- USDA-NRCS-GLTI. 2003. *National Range and Pasture Handbook*. Ft. Worth, TX.



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