



Fact sheet

Bison Husbandry

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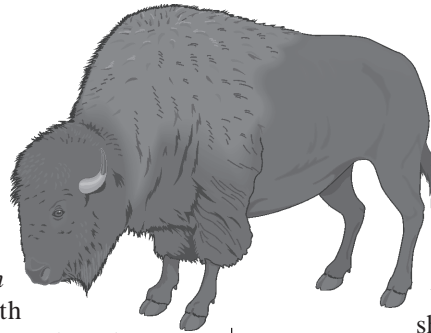
Introduction

There are three subspecies of bison (American buffalo) that exist today; *Bison bison bison*, found on the plains of North America, *Bison bison athabascae*, found in north central Canada, and *Bison bison bonasus*, the only European species. The European species is also referred to as the wisent and is approaching extinction, with only a few animals remaining in parks and zoos. All three species are descendants of *Bison bison occidentalis* from Siberia.^(5,9)

Bison and buffalo are two separate species.⁽⁸⁾ Bison are characterized by a large hump on the back, 14 pairs of ribs, and are found in North America. Buffalo are found in Asia and Africa, possess no hump, and have 13 pairs of ribs. The term buffalo usually refers to the African cape buffalo and the Asian water buffalo. The term buffalo was also the term given to bison during the settlement of North America and is often used interchangeably with bison. Breeders, however, strongly prefer the use of bison.

Background

It is believed that bison entered North America more than 20,000 years ago and were followed by Asian hunting tribes that crossed into Alaska. At their peak, they numbered 40 million and roamed over nearly half of North America. Plains Indians hunted these animals by circling them on foot and shooting arrows, stampeding an entire herd over cliffs, or driving them into a natural trap. With the introduction of the horse during the mid-1600s, it was easier for the Indians to employ earlier hunting methods and enabled them to hunt during the winter months.⁽⁵⁾



The Indians had many uses for raw, dried, and cooked bison meat. They made pemmican (a dried meat and fat concentrate), and the hump roast was considered a delicacy. Hides were used for shoes, clothing, and shelter. Muscle tendon, also called sinew, was used for sewing and binding, and bones were used for tools. Dried dung was used for fuel. The Indians referred to bison as “the spirited animal” or “Tatonka.” Indian lore said that the birth of a white bison signified the beginning of an epoch of peace and reconciliation among all people.

Mass slaughter of bison by settlers occurred from 1840 to 1880. Bison were killed because they would stop trains as they crossed the prairies and settlers wanted their hides or tongues. After the slaughter, the remaining carcasses were left on the plains to rot. In the mid-1800s there were an estimated 60 million bison in North America, but by 1883, bison were close to extinction. By 1900, it was reported that there were less than 100 of these animals in the wild.

Bison are the largest land animal and game species that are hunted in North America.⁽⁵⁾ A bison’s eyes are adapted for 360-degree vision and farsightedness. They often rely on smell and hearing at close ranges. The average life span of wild bison is 12 to 15 years, but they have been known to live up to 40 years. Present day natural predators include wolves, and severe winter weather can also limit bison activity.

Management

Bulls stand six feet tall and ten feet long, with the average animal weighing one ton. Bulls can breed beginning at 2 years and reach full maturity at 5 years.

Cows are smaller, standing 5 feet tall and weighing 700 to 900 pounds. Breeding takes place from mid-July through the end of August, and the calving season is late April through mid-May. Artificial insemination is not used and suggested natural breeding ratios are one mature bull to 10 cows. Breeding bulls should be replaced every two years to prevent inbreeding.⁽⁵⁾ The reproductive life for both sexes is 12 to 17 years. Gestation is 9 months, and a cow usually calves for the first time at 3 years of age.

Cows give birth to a single, 30 to 70 pound, rust-colored calf. The rust-colored coat remains bright for 3 months before changing to brown. Calves can stand upright within 30 minutes of birth and they are grazing within a week. All producers do not practice weaning. The recommended age to wean bison is 8 to 9 months but they can be started on creep feed at 7 to 8 months of age. Bison are usually identified by ear tags. Dehorning is recommended if one is handling the bison. The optimum time to do this is at 6 weeks of age and should be done before fly season or after a killing frost. Castration is not a routine practice because bulls are sold for meat before breeding age is reached and before meat flavor is affected.⁽⁵⁾

In the event of an orphan calf, it should be offered colostrum during the first few hours of life. Dairy cow colostrum is adequate and more available than bison colostrum. Acceptable types of milk replacer are goat's milk, evaporated milk and water, or sheep's milk. The feeding recommendation for a milk replacer is ½ to 1 pint, 4 to 6 times a day for 2 weeks. After 2 weeks, the amount offered could be increased to 1½ to 2 quarts twice daily. Scours should be watched for at this time.⁽⁵⁾

A bison is a ruminant and its diet may consist mainly of grasses and other forages. Bison are usually raised on pasture, seldom in feedlots. They normally move while grazing and have been noted to cover a ¼ to 3 mile area. Recommended protein level is 11 to 13%, and mineral requirements are similar to cattle.⁽⁵⁾ Most minerals are supplied in forages, and little supplementation is necessary. In the wild, females usually lead the herd because they have a better memory for seasonal patterns of grass availability and location of water sources.⁽²⁾ During periods of harsh weather, bison are able to locate grass under a layer of snow and can eat the snow to meet their water requirement.⁽⁵⁾ If necessary, bison can go several days without water.

Handling

Bison management techniques have evolved from those practiced by cattle ranchers. Bison are not

domestic animals and require special care when handling. They are more excitable in close quarters, so fences around handling areas need to be taller and stronger than those around pastures. When handling bison, use a chute with a squeeze gate. It is suggested not to disturb pregnant cows in the spring due to possible injury, abortion, or premature birth. Cows may be vicious and protective if their calves are threatened. It is also recommended not to work with bulls during breeding season for safety concerns. Bison prefer the natural shelter of shrubs and rough terrain to those of artificial construction. Confinement areas for bison should include large, open, green pastures with fresh water available. Fences should be constructed of heavy-duty, woven wire supported by wooden posts, 6 feet in height. Barbed wire is not recommended. Several factors including types of forage, soil, and water quality are dependent on the number of bison that may be raised in a particular area. It is suggested that 1 acre of land per animal is provided, equivalent to that required for cattle.⁽⁷⁾ When introducing new animals into a herd, isolate them first for 2 to 4 weeks to monitor the animals' health and then slowly introduce them into the herd.⁽⁵⁾

Getting Started

When starting a herd, purchase calves as a foundation before buying mature animals. Young animals may adapt more quickly to new environments than older animals.

Regarding the consideration of the purchase of animals, there are some traits to look for: large, lengthy, well-developed hindquarters, and good conformation as exhibited by flat backs that slope toward the tail. Additionally, it is desirable to have a large body frame with adequate width and depth over length.⁽⁵⁾

There are several possibilities when raising bison: absentee ownership, hobby ownership, small producer set-ups, medium-size ranches, and large ranches. Absentee ownership involves a contract between an owner and existing ranch to own one or more animals. This option offers investment and tax shelter opportunities, but due to rising costs and other problems, this is not a popular practice. Hobby ownership refers to housing a few bison, usually less than 25 animals, that are used as tourist attractions or as part of a display. A small producer is someone with a herd numbering 25 to 100 animals. This type of ownership sells breeding stock and extra bulls for meat animals. A medium ranch is an operation similar to a small producer, but raises a greater number of animals. Bison is the major source of income for a large ranching operation. In addition to raising breeding animals and selling excess bulls for meat, they may also have a working feedlot.⁽⁵⁾

Uses

Bison are raised primarily for meat. Animals are usually slaughtered at 1 to 4 years of age and yield a dressing weight that averages 50% of live weight. Bison meat is most marketable if slaughtered between the ages of 2 to 3 years. The meat is approximately 50% higher in iron than beef, and the cuts are identical. The meat is similar in color (dark red) but with less marbling than meat from cows. Many people claim that bison meat has exceptional palatability. No nitrates have been approved as preservatives for use in bison meat. In 1996, bison meat prices were 25 to 50% higher than beef due to a short supply, and some predict that as the prices drop, consumption of bison will increase. It is anticipated that the bison market will have a bright future and may have fewer fluctuations in prices than beef. The table below compares a 3.5 ounce serving of various cuts of cooked, lean meat to bison meat. This information was taken from the USDA Handbook 8-5:8-10:8-13:8-17.

Species	Fat (g)	Calories (kcal)	Cholesterol (mg)
Bison	2.42	143	82
Beef	9.28	211	86
Pork	9.66	212	86
Skinless Chicken	7.41	190	89

There are economic advantages to raising bison as compared with beef cattle. Bison command higher market prices, and there are fewer expenses involved. Bison are hardier than beef cattle and can often consume plants that would otherwise not be eaten by cattle. Bison profits are increased because they sell on the hoof for 20 to 50% more than cattle. In contrast, there are items that cost more than raising cattle, such as fencing costs, corral and handling areas, and foundation herd expenses.⁽⁷⁾

In addition to meat, bison provide hides, skulls, and wool. Green (untreated) hides are valued at \$50 to \$100 and leather at \$4 per square foot. Bleached skulls, used for decoration, are sold for \$75 to \$100, and mounted heads can cost as much as \$2000. Horns are less expensive, valued at \$5 to \$15.⁽⁷⁾ The wool is also woven into cloth for garments.

Herd Health

Brucellosis is a bacterial disease that can infect bison as well as other domestic livestock, wildlife, and humans. The specific bacteria strain that causes the disease is *Brucella abortus*. Clinical signs include spontaneous abortion of the first calf post-infection, reduced reproductive efficiency and milk production, and lameness. Exposure may not result in clinical disease. This disease can be detected through blood tests designed for cattle. The test's limitation is that it only tests for antibodies or for exposure to the bacteria, and bison that have been exposed may not be infected or infectious. Transmission of disease occurs through pregnant females and contaminated reproductive materials, such as aborted fetuses and reproductive fluids, and is passed from dam to calf through milk.⁽⁴⁾ Vaccinations have shown to be effective. Consult your veterinarian about a protocol specific to your herd.

Bison should be wormed once per year, and it is thought that females are more susceptible to internal parasites than males. As of May 1997, no antihelmintics or medications were approved for use in bison. Natural parasite control includes wallowing in mud and rubbing against natural objects, such as trees or boulders. Pasture rotation is suggested for parasite control.⁽¹⁾ Consult with your veterinarian if you have questions.

Scours, commonly found in other feedlot situations, is rare among bison herds and does not usually occur under natural or range conditions. Conditions contributing to this disease are closely confined, penned areas or intestinal parasites. The suggested remedy for scours is pasture rotation.⁽⁷⁾ Consult with your veterinarian.

Malignant Catarrhal Fever is a viral disease characterized by a high, prolonged fever and inflammation of the respiratory tract. Other possible symptoms include inflammation of the eyes and gastrointestinal tract. This disease occurs sporadically and results in low morbidity, but high mortality rates. It usually strikes in late winter and early spring in the United States. There are no known treatments, but quarantine of infected areas and animals should be enforced to prevent further spread.⁽⁵⁾

Bison naturally avoid some toxic plants such as locoweed. Other poisonous plants include wilted cherry leaves and pine needles. It is recommended that you check your area for poisonous plants that may also affect cattle. Other common health challenges that bison are faced with include physical injury, pink eyes, flies, and respiratory diseases.⁽⁷⁾

Information Sources

National Bison Association
4701 Marion St., Suite 100
Denver, CO 80216
(303) 292-2833

North American Bison Society
Boots Delano
4570 N. Oraibi Pl.
Tucson, AZ 85749-9386
(520) 749-5654

Eastern Bison Association
32 Hemlock Ct.
Staten Island, NY 10309-1664
(718) 984-0042
Email: Tpbison@aol.com

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