

Domestication and Natural Behavior of Cattle

Our topics for this week are:

- Domestication of cattle
- Types of cattle
- Purposes of cattle
- Natural behavior of cattle

Domestication of Cattle

Cattle have been domesticated and handled by humans for approximately 8,000 to 10,000 years, beginning in the Middle East and North Africa. They were first raised as a convenient source of meat and for the leather they provided. Later, their value as a beast of burden was realized in northern Europe. Egyptians discovered that cattle could also be a source of milk for humans. As with the horse and hog, domestic cattle were brought to the Americas 500 years ago by Spanish conquistadors and explorers. Christopher Columbus brought cattle to the West Indies on his second voyage in 1493. Cortez took cattle from Spain to Mexico in 1519. The first domesticated cattle in North America landed in St. Augustine, Florida in 1528 with the Spanish explorers. The English and Dutch brought other domesticated cattle to New England in the early 1600s.

Oxen were inexpensive and effective draft animals for wagons, and played a large role in the western migration in the U.S. More than one pair, called a yoke, were directed by cracking a bullwhip on the opposite side from the direction a turn was desired. The bullwhip was used for its noise, not on the animal to cause pain and injury.

Because of the dry highland plains and more than 700 year occupation by the Moors from North Africa, the Spanish brought a nomadic herd-based method of handling cattle in a constant search for forage. The British and Dutch brought a territorial method of grazing and handler bonding with individual animals. This included providing shelter from the weather (barns and sheds). Today's herding and handling of cattle in the U.S. is a compromise of these two methods. Methods of handling cattle have improved significantly in the last 30 years due to the guidance of Temple Grandin. Better methods of herding and moving cattle while minimizing stress has been promoted by Bud Williams, Burt Smith, and Curt Pate.

Most cattle in the U.S. were derived from European breeds, which are among the species *Bos taurus*. The European breeds were selectively bred for either beef or milk production. The Brahman breed of cattle, bred for beef production, is from Asia and the species *Bos indicus*. Brahmans and Brahman crosses are more heat and parasite resistant than European breeds. Since Brahmans are raised for these characteristics and their independence, they are generally not handled as often as European breeds. Some cattlemen consider Brahmans inherently more difficult to handle, but much of this may be due to the difference in handling frequency than difference in the breed's inherited behavior.

The U.S. leads the world in beef production followed by Brazil and the European Union. It is second in the world to India in milk production and dairy processing.

Sexually intact adult male cattle are **bulls**. Castrated males are **steers**. A steer used for

pulling wagons is an *ox*. Adult females are *cows*. Dairy cows are either *dry* (not currently producing milk) or *freshen* (having had a calf and producing milk). Young cattle are *calves*. A young female that has not had a calf is a *heifer*.

Natural Behavior of Cattle

Cattle are highly social animals that will form herds whenever possible. Within a herd, three groups tend to develop: female, male, and mixed gender. Female groups contain about 10 cows, possibly with some young males. Male groups are smaller and composed of young males. Older males tend to remain alone when not breeding. Mixed gender groups form during breeding seasons and contain approximately 15 animals. By 7 weeks of age, calves will sleep in groups.

Social hierarchy categories within a herd of cattle include leaders, dominants, and submissives (also called subdominants and timids). When a herd moves the leaders lead, followed by the dominants, and trailed by the submissives. Roles as leaders, dominants, and submissives can shift somewhat among some herd members depending on the activity. In general, the social rank of a cow is well established by 2 years of age and maintained by threat posturing followed by butting when the correct social response does not promptly occur. Young bulls play fight to develop tactics and test strength. They gradually become more aggressive and territorial.

Higher social rank is based on horn size, age, and weight. The herd bull is the most dominant herd member. The bull does not participate much in herd discipline, except in controlling young bachelor bulls. Other than breeding, its primary objective is to keep the herd separate from other herds. An older, heavier cow with large horns is more likely dominant than smaller, younger cows, or those with shorter or no horns. The most dominant individuals are usually not the most aggressive. Dominant adults tend to break up fights among younger herd members.

Leader cows stay on the periphery of the herd at the edge of their social distance, which is the maximum distance that cows will stray from the bulk of the herd. Leaders are inquisitive and initiate movement of the herd. They are also the most likely to approach a handler first. They are licked by other cattle more often than other herd members. Dominant members maintain a larger personal space than submissives.

Although recognition of herd members is visual, auditory, and olfactory, the sense of smell is more important to cattle than sight or sound for identifying herd members. It is primarily by smell that cows and their calves recognize each other. Most communication among cattle is visual by body posture. Vocalization, the “moo”, is used in demanding attention from others. A call (also called the hoot or roar) is higher pitched and occurs in a series of short bursts. This is even more demanding and often indicates distress.

Cattle graze by apprehending grass with their tongue for 4 to 9 hours per day, mostly in the early morning and late evening. During midday, they seek shade to rest and ruminate. Lying down comprises half of the daytime hours. When grazing, cattle spread out more than when moving or resting. When cattle are grazing, dominants move the greatest distance away from possible threats.

Some management practices for cattle do not permit natural behavior. Feedlots are highly concentrated, unnatural environments for fattening cattle for 75 to 200, or more days. Grazing is eliminated and replaced by multiple feedings of grain and high energy roughage. Feedlots became popular in the 1950s and 1960s for economic reasons. Feedlot cattle are typically treated

with antibiotics to prevent liver abscesses that occur from highly concentrated diets, and hormones to stimulate muscle growth. A beta-agonist may also be fed to reduce the development of fat but that can cause anxiety and loss of hooves during hot weather.

Veal is tender meat from dairy bull calves that are 16 to 20 weeks of age. Veal calves in the U.S. may be kept in individual tether stalls and unable to turn around so that they remain cleaner until slaughter. Group housing of veal calves is mandated in Europe.

Feedlots and veal calf isolation have some advantages over pasture feeding, such as labor economy, inexperienced animal handler safety, protection from predators, and rapid weight gains. However, weight gain can occur without good handling of livestock, and the risk of cattle being injured, becoming lame, having bloat, and diarrhea is higher in concentrated animal feeding operations.

Now let's recap the key points to remember from today's episode:

- 1. Brahman cattle are usually more difficult to handle and herd than most European breeds.**
- 2. Feedlots and veal calf production are not natural means of raising cattle.**

More information on animal handling is available in my book, *Animal Handling and Physical Restraint*, published by CRC Press. It is also available on Amazon and from many other fine book supply sources.

Additional information is available at: www.betteranimalhandling.com

Don't forget, serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.