

# The Importance of Convenience Traits in Beef Cattle

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Convenience traits are those cattle traits that contribute directly to savings in time, facilities, drugs and labor in a cow-calf enterprise. Some examples of these traits are temperament, polledness, structural and udder soundness, disease and pest resistance, heat tolerance, doing or “fleshing” ability, mothering ability, and calving ease. Many are not highly heritable but contribute to the ease of participating in and enjoying the beef cattle industry.

## Temperament

Temperament is a measure of the relative docility, wildness or aggression of an animal toward unfamiliar situations, human handlers or management interventions. Temperament reflects the ease with which animals respond to handling, treatment and routine management. Animals with poor dispositions are a safety risk to handlers, themselves and other animals within the herd. Disposition also affects handling equipment requirements, operation liability exposure, beef quality assurance, carcass quality and performance.

Wild, hard to handle cattle are a danger to themselves and the people working with them. Once confined, they look for or create a way to escape. They can be “wild-eyed” upon leaving the chute and exit the headgate on the run. They may look for something to hit and when extremely agitated may charge a human being.

In addition, animals with poor temperaments do not perform as well in the feedlot as calmer cattle. Research from Iowa State University has shown that this type of cattle gains nearly one-half pound per day less than quiet, easily managed cattle and returns \$61 less in profit than their contemporaries. Easily excited cattle have a tendency to produce carcasses that have a higher incidence of dark cutters, which are carcasses from animals that produce dark red lean tissue resulting from cattle that have been stressed prior to harvest. The color reduces consumer acceptability and dramatically lowers carcass value.

Results from a survey of Tennessee cow-calf producers conducted during three performance-tested bull sales revealed that temperament was rated 4.13 out of 5.0 as being important in sire selection. Heritability of temperament is moderately high, and directional change can be made by selection and culling. The North American Limousin Foundation along with other beef breeds have developed their own breed EPD for docility or temperament, which helps producers make directional changes for disposition in their breeds. Higher numerical Docility EPD values indicate more docile animals.

Temple Grandin found that locating the hair whorl on the forehead in cattle is associated with temperament. Those with hair whorls above the midpoint of the eyes are more susceptible to excitement than cattle with

hair whorls below the midpoint of the eyes. Excitability is measured when the cattle are in the chute by temperament scores assigned to them according to their response to restraint.

## Udder Soundness

One of the most important functional traits of a beef cow is udder and teat conformation, and they appear to be heritable. Beef producers are less likely to consider udder shape and characteristics than dairy producers, but these attributes affect cow productivity and longevity and should be considered in a beef cow-calf operation. Their soundness should be an important concern because of their relationship to injury and mastitis and poor calf performance affected by the reduction of milk flow.

Oversized teats are difficult for newborn calves to nurse and receive adequate colostrum, which could lead to a higher incidence of scours or decreased immunity levels in the newborn calf. Research at the New Liskeard Agricultural Research Station in Canada examined factors related to the transfer of antibodies from the dam to her calf during the first four hours post-calving. Measurements were recorded for maternal behavior, calf vigor, calf time to first standing after birth, calf time to first suckling after birth, and the physical structure of the cow's udder. Cows with higher (more desirable) maternal behavior scores had calves with higher calf vigor scores. Calf vigor scores were highly related to the newborn calf's time to first standing and time to first suckling. Also, the newborn's time to first suckling was related to the teat size score; cows with more desirable teat scores had calves that

nursed sooner after birth.

Teat circumference seems to have more negative impact than teat length. Short- to medium-length teats are preferred to long teats. Sound, well-attached udders are less susceptible to injury than very pendulous, poorly attached udders. The teats should be placed squarely under each quarter. When viewing the udder from the side view, the udder should display a level udder floor without any quartering. The median suspensory ligament is the support that ties the udder to the cow's body wall. A weak suspensory ligament allows the udder to hang down too far from the body and subjects the udder to serious problems. Some of the beef breeds now include udder scoring in the performance programs. Figure 1 from the Red Angus Association of America and the Beef Improvement Guidelines illustrates different types of udder suspension and teat size.

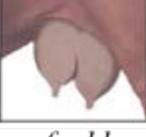
Udder Suspension			Teat Size		
Score	Description	Example	Score	Description	Example
9	Very Tight		9	Very small	
7	Tight		7	Small	
5	Intermediate/moderate		5	Intermediate/moderate	
3	Pendulous		3	Large	
1	Very pendulous, broken floor		1	Very large, balloon-shaped	

Figure 1. Different types of udder suspension and teat size.

Source: Red Angus Association of America and the Beef Improvement Guidelines

## Structural Soundness

Sound feet and legs are essential for a bull to be able to cover many acres of pasture in order to mate with cows and obtain adequate nutrition. Structural soundness is expressed in varying degrees. Inspect prospective sires in a systematic manner, including their feet, toes, heels, pasterns, knees, hocks and sheath. When viewed from the front, the feet should point straight ahead, both when the bull is standing and walking. The feet should be large and round with a deep heel and with toes that are similar in size. When viewed from the rear, the legs should be equally far apart at the hocks and pasterns, and the toe should be out slightly from the pasterns to the ground. The bull should move freely

with each hoof striking the ground evenly. When on the walk, a structurally sound bull's hind feet will cover the footprints made by the front feet. Short, choppy strides are usually the result of the hind leg being too straight (post-legged) and/or not enough angulation to the shoulder. Bad feet, pigeon toes and excessively straight or sickle hocks are examples of the more common structural problems. Recently, the American Angus Association implemented a foot scoring component in their performance program. The scoring system is shown in Figure 2.

Replacement females should remain functionally sound to advanced ages. Proper foot, leg and udder structure is important in the beef cow or replacement heifer to ensure longevity.

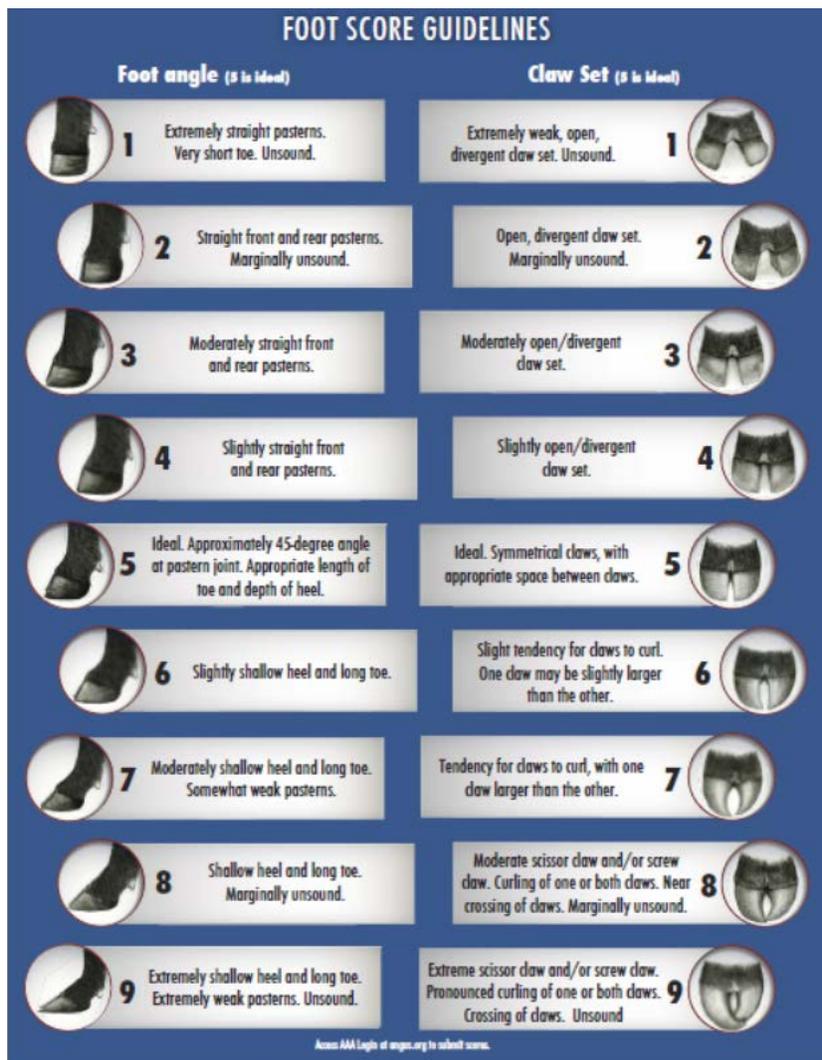


Figure 2. Foot scoring system

Source: American Angus Association

## Polledness

De-horning is a labor-intensive management practice that requires additional attention. Polled cattle are less troublesome. When working them, the possibility of injury to both producer and animal is reduced. Cattle without horns require less time and labor. De-horning can be accomplished by selecting a polled bull because the polled gene is dominant to the horned gene.

## Calving Ease

Assistance at calving is labor intensive and can be reduced greatly by selecting herd sires that have below breed average birth weight EPDs or excellent EPDs for calving ease. Low birth weight EPDs reflect smaller calves at birth, while greater

numerical calving ease EPDs reflect fewer calving difficulties in first-calf heifers. Also, stress incurred by the cow and calf at birth can lower the resistance of the newborn calf and make it more susceptible to disease and health problems. In addition, stress incurred by the cow during a difficult birth may delay her return to estrus following calving and lengthen the following year's calving season.

## Disease and Heat Resistance

There are breed differences in cattle related to heat tolerance and disease resistance. The Bos Indicus (Brahman-based and composites) cattle are known to be more heat and disease resistant than the British and continental breeds. The Senepol breed, which is not a true Bos Indicus breed, is also more heat resistant than the British and continental breeds.

## “Doing Ability”

The doing ability or fleshing ability is a measure of the adaptability of the cattle

based on the resources they have to produce. It is the animal's ability to gain or maintain body condition on limited feed. “Hard doers” are those that do not adapt to their given set of resources and require extra attention or feed to be productive. Cattle that adapt poorly to their environment generally have less fleshing ability and are more costly to maintain. Fleshing ability also affects the longevity of the animal in question because of its possible influence on reproduction.

The cow-calf industry is composed of many part-time operations that are maintained to supplement other farm enterprises or off-farm income. Labor is a limiting resource in many of these operations, and there is a trend toward selecting for improvement in convenience traits while maintaining optimum performance. Many of these convenience traits are not highly heritable, but by selecting for them and culling those that do not fit the producer's objectives, improvement can be realized and enjoyment increased.



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