

Keeping Things In Balance

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Life is a balancing act and so is the business of being a good seedstock breeder. Today's emphasis is on the use of EPDs to improve breeding decisions. In the near future, we will have DNA technology to enhance the accuracy of EPDs. No one believes more strongly in EPDs and the future potential of DNA technology than I do. If a trait can be accurately described with data, we need to take advantage of the opportunity and use it.

However, there are a number of physical or type traits that we have not yet described with EPDs. Perhaps in the future we will be able to do so, but for the time being, we need to rely on visual appraisal. This is why universities offer livestock evaluation courses—to teach our students how to evaluate those traits and balance them with EPDs in making wise selection decisions within a given production environment.

We often refer to these physical traits as "functional" traits, because many of them may affect the animal's function and longevity in the herd. Examples are skeletal structure (sound feet and legs, shoulder, spine, etc.), mammary structure (tight udders and small teats), disposition, femininity, body capacity and fleshing ability. Others traits include those that are valued in market progeny, such as muscle expression and degree of fatness. A few

breed associations have EPDs that relate to some of these traits, such as docility, stayability, ribeye area, fat thickness, and percent retail product. But many other associations do not. Ultrasound measures conducted by a highly qualified technician can now provide reasonably accurate estimates of ribeye area, fat thickness, and marbling in yearling cattle, and eventually will be incorporated into EPDs for those traits.

Visual evaluation is still important and needs to be factored into the "balancing act." Astute breeders have the ability to combine EPDs, ultrasound data, and physical traits into a near-ideal package that can meet the needs of their customers. In doing so, it is first of all, imperative to understand the needs of their customer base. However, each breed has only a percentage of breeders, perhaps no more than 20%, who can consistently accomplish this over time. Some may not have a complete grasp of how to use EPDs and/or ultrasound data effectively. Others may not have a full understanding of how to visually evaluate cattle for physical traits.

It has been my observation that seedstock breeders have become much more accomplished at using EPDs in recent years. However, the ability to evaluate physical traits may have

declined, especially among new entrants into the business who have had little or no previous experience in live animal evaluation.

If a customer gives you an order for bulls to be used on heifers and you send him bulls that are 'out of bounds' for birth weight, resulting in a disastrous calving season, he is not going to be very happy to say the least. But, by the same token, if a customer gives you an order for stout, muscular, growthy bulls capable of siring thick, muscular, high-performing steers for his feedyard customers, he is not going to be very happy if you send him frail, light-muscled, hard-doing bulls. No customer would be happy if he were sold bulls having structural defects such as unsound feet and legs that would impair their breeding performance and longevity in his herd.

Montana State University recently conducted a study on the heritability of physical/type traits using data from 21,052 females in ABS Global's system for scoring progeny of A.I. sires. They found the following traits were moderately to highly heritable: muscle, frame, body capacity, femininity, rear leg set, foot and pastern angle, udder depth, udder attachment, and teat size. These results indicate it is possible to change these traits through accurate selection and culling strategies. They also found that certain correlated changes may occur. For example: intense selection for femininity may result in cows that lack muscle and capacity; and selection for females with tighter udders will result in an improvement in udder attachments and a decrease in teat size.

Research has revealed other correlated changes that may occur when selecting for certain traits. Intense selection for increased marbling may be correlated with increased carcass fatness and decreased retail product yield. Intense selection for increased muscling and decreased fatness can negatively impact marbling and increase ribeye area beyond industry specifications. Recent observations would suggest that long-term selection for low birth weight may decrease muscling and increase calving difficulty in replacement heifers due to reduced pelvic area. Some of these antagonistic relationships are not strong, but intense selection over time for certain traits could certainly have a negative effect on other economically important traits.

Throughout my career, I have been actively involved in selecting seedstock for my own herd, for the university herd, and for other breeders. Currently, my breeding philosophy is similar to that of one of the most astute seedstock producers I know of in any breed of cattle. I don't necessarily agree with him on all points, but I believe he is on target when he says, "My breeding objective is to position my EPDs where I want them to be and then produce a 'type' of cattle within that EPD framework."

When I am considering an A.I. bull for use, I like to go through the following steps: 1) study his pedigree and his EPDs and their accuracies; 2) look at progeny, if possible, or talk to people who have seen progeny; 3) try to look at daughters in production or talk to people who have seen them; 4) I will

never use a bull solely on the basis of his photograph.

The breeding of cattle is becoming more and more science-based, which is good. However, there is still a fair bit of art involved in the breeding of good cattle. Data is important, but it isn't the total answer. "Stockmanship" is still needed to keep things in balance.