



Birth weight versus calving ease

Tom Hook April 01, 2001

- Calving season brings the reality of our sire selection for birth weight, calving ease and calf vigor.
- Breeding season focuses our attention on reproduction and fertility traits.
- Weaning season draws our attention to the pounds produced/cow.
- At harvest time, we find out how well our mating decisions panned out for feedlot gain and carcass performance.

At each of these stages, we're reminded how difficult it can be to make mating decisions that accomplish our goals in each production area.

For instance, with calving season upon us in much of the industry, birth weight and calving ease take center stage as cow/calf operators try to maximize the percentage of their calf crops. But, looking ahead to this year's breeding decisions for these traits, keep in mind that aiming for birth weights that contribute to calving ease is more complex than just selecting bulls with low birth weight expected progeny differences (EPDs).

Research indicates birth weight is by far the most significant contributor to calving ease. In fact, researchers found that 60% of calving difficulty (dystocia) is due to calf birth weight.

With that in mind, it's easy to conclude that selecting low birth weight sires will reduce calving difficulty and increase the percentage of calf crop. However, a producer must also ask how placing selection pressure on low birth weights influences other production traits such as weaning weight and average daily gain.

For starters, the maternal/placenta interaction, maternal diet and environmental climate and temperature all have varying influences on birth weight and gestation length of calves.

There is no question that dead calves at birth don't weigh much at weaning time, and that birth weight has a major influence on subsequent calving ease. Research suggests, however, that selecting for birth weight EPDs alone can upend the economic fortunes of a cow/calf enterprise.

As cow/calf producers discovered long ago, that's because selecting for low birth weights is antagonistic to selecting for growth performance.

Emphasize Calving Ease

Consequently, emphasizing calving ease EPDs in selection rather than birth weight EPDs may offer greater dividends by allowing for the selection of calving ease and growth performance at the same time.

Table 1 illustrates genetic correlations from the American Simmental Association 2001 Spring Sire Summary. These genetic correlations — the genetic relationship between two different production traits — indicate how closely or how loosely traits are related to one another.

Correlations range from +1.0 to -1.0. The nearer a relationship is to ± 1.0 the stronger the relationship is.

In the case of birth weight, correlations in the table underscore the fact that birth weight is highly correlated — but negatively correlated — to calving ease direct. At the same time, birth weight is highly correlated — and positively correlated — to weaning weight and yearling weight.

Obviously, this is just good cowboy logic. Although lighter calves at birth tend to be born easier, they are often lighter at weaning. Conversely, the heavier that calves are at birth, the more calving difficulty there tends to be. The heavier calves at birth, however, also tend to be the heaviest ones at weaning and yearling time. Thus, the genetic antagonism.

Table 1: Simmental sire EPD correlations*

	Calving Ease Direct	Birth Weight	Weaning Weight	Yearling Weight	Calving Ease Maternal
Calving Ease (Direct)	1.000	— High	— Moderate	— Low	Moderate
Birth Wt.	-0.594	1.000	High	High	— Low
Weaning Wt.	-0.295	0.611	1.000	High	Low
Yearling Wt.	-0.257	0.563	0.946	1.000	Low
Calving Ease (Maternal)	0.303	— 0.141	0.039	0.093	1.000

Legend: •0.25 = low; 0.26-0.50 = moderate; •0.50 = high

**Source: American Simmental Association 2001 Spring Sire Summary*

Bottom line, this suggests that a producer can maintain an acceptable live calf crop percentage without sacrificing growth performance by focusing more on direct calving ease than birth weight when it comes to selecting for getting live calves on the ground. And, these easy calving, high growth sires that bend the rules of the low-birth weight, low-growth antagonism certainly exist.

As basic as this is, by considering this selection approach, cow/calf producers can boost their bottom lines and have their calving ease and weaning weights, too.

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