



By the Numbers

► by *Sally Northcutt, Bill Bowman and Don Laughlin*

Weigh your calves, please

With all the excitement surrounding genomic technology and weekly expected progeny difference (EPD) updates, it's sometimes good to back up a step and stress an important component that makes Angus breeders successful in genetic improvement. As a reminder, weigh your calves with a scale.

Birth weights and birth EPDs

Birth weight EPDs are computed using raw performance data based on birth weights taken on calves at birth using a scale and reported in pounds. The heritability for the birth-weight trait was estimated based on calf birth weights and not estimates of that trait.

A recap of the Association's performance guidelines found in the calving- and weaning-report instructions (available online at www.angus.org/Performance/AHIR/PerfCalvingWeaning.aspx) is as follows:

- Estimated birth weights are not accepted (e.g., hoof circumference or heart girth body weight tapes). As your calves are born, it is important to consistently weigh each calf within 24 hours. The

birth-code column is for reporting any irregular calving situation, including death loss or the sale of calves preweaning.

As always, birth weights for calves are to be reported in a proper contemporary group based on calves weighed with a scale at birth. Estimated birth weights taken from a body tape or hoof-circumference tape are not appropriate for Association use.

Here's why

Research conducted as Mississippi State University (Parish et al., 2009) supported the accuracy of using birth weights from calves weighed rather than estimated measures. Visual birth-weight estimates and hoof tape

measures tended to underestimate high birth weights. The birth weights collected with a spring scale or digital scale provided more accurate weight measures important to EPD calculations.

In another report by South Dakota State University (Pruitt et al., 1995), calves were weighed within 24 hours of birth with a hanging spring scale and a hoof-circumference measurement was also captured with a commercial, flexible hoof tape. The hoof tape predicted only 26% of the calf birth weights within 2 pounds (lb.) of their actual weight.

Accurate data submission

Good genetic predictions (the EPDs) have a foundation of phenotypic data from proper contemporary groups defined by the breeder. Whether it is birth weights,

weaning and yearling weights, or other trait measures submitted, the raw data continues to be valuable.

The Association's website provides details for submitting trait data, including acceptable age windows. All the weights are expected to be from scales, to align with evaluation procedures.

While the question sometimes arises as to whether breeders should continue to weigh calves since genomic technology is readily available, the answer is simply yes. It's important for future genomic technology and calibrations to continue to build the Association's phenotypic database.

Fortunately, even as the first genomic trait tests were available in September 2009, the weights and measures continue to roll in thanks to breeder advocacy for the leading beef cattle database (see Table 1).

Table 1: Phenotypic record counts as of Jan. 11, 2013

Trait	No. records
Birth weight, lb.	6,499,993
Weaning weight direct, lb.	7,206,626
Yearling weight, lb.	3,532,926
Calving ease scores	1,240,797
Ultrasound	1,425,321

Calving ease EPD consideration

In 2004 the American Angus Association released the calving ease direct and calving ease maternal EPDs (CED and CEM, respectively). The genetic evaluation to generate these EPDs included phenotypic birth weights on all calves in proper contemporary groups (excluding ETs) as an indicator trait along with indicator genomic test results. This is another example of where proper collection of birth-weight data is an important contributor.

Conclusion

While requiring the submitted birth weights to be actual calf weights seems strict considering the time and effort required to collect such measures, the calf weights are the standard for use in the American Angus Association birth weight and calving ease EPDs.



Editor's Note: "By The Numbers" is a column by Association performance programs staff to share insights about data collection and interpretation, NCE, genetic selection and relevant technology and industry issues. Sally Northcutt is director of genetic research for the American Angus Association. If you have questions or would like to suggest a topic for a future column, contact Northcutt, Bill Bowman or Tonya Amen at 816-383-5100.



► Weights taken with a scale within 24 hours of birth are appropriate for use. Weight estimated from a hoof or heart girth measurement are not.



Angus birth weight data

Submit actual calf birth weights taken with a scale within 24 hours of birth. Estimated birth weights are not acceptable for EPD computations.

Benefits of actual birth weight:

- data aligned with NCE procedures (BW, CED, CEM EPDs)
- most accurate method for phenotypic birth weights

Do not submit estimated weights

- estimated by body-weight or heart-girth tapes
- estimated by hoof-circumference tape