THE DATA DIVE

by Esther Tarpoff, director of performance programs

Make the Most of Your Data Collection

What are the top reasons records do not make it into the NCE?

Keeping records takes time and effort. It also takes time and effort to submit those records to Angus Herd Improvement Records (AHIR®). How do you ensure the records you submit have maximum value? The answer to that question lies in submitting data correctly to make it into the National Cattle Evaluation (NCE).

It is no secret that the best genetic selection tool available today is expected progeny differences (EPDs). EPDs are the most robust genetic selection tool since they include all the pieces of available information including the pedigree, genomic relationships, performance information for the individual and progeny records. In order for EPDs to have accurate predictions, all these pieces are necessary.

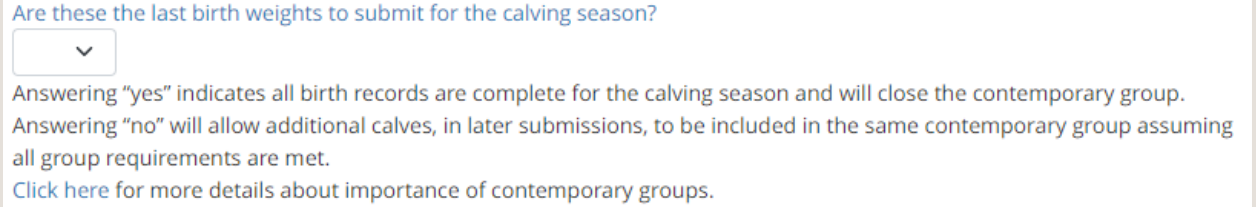
It is also no secret Angus members are dedicated to data collection. For example, in fiscal year (FY) 2022, there were more than 346,000 birth weights and 285,000 weaning weights submitted to AHIR. However, not all the data that is submitted to AHIR makes it into the NCE. The reasons data are excluded from the NCE and ultimately do not have the opportunity to inform EPDs vary trait by trait. There are some commonalities, however.

Reasons data are not used

No matter the trait, one reason data are excluded from the NCE is contemporary group size. If an animal is in a single animal contemporary group, there are no other animals to compare it to, so that information is not useful for the NCE. In FY 2022, there were approximately 15,600 animals that were in a birth contemporary group of one. For most traits, a minimum of two animals are needed in a contemporary group to be eligible. For more information on contemporary group rules, visit *https://www.angus.org/performance/ContemporaryGrouping*. There is also a video on Angus University discussing contemporary groups.

While there are instances an animal should be in a contemporary group alone, such as an orphan, due to illness, one managed differently than other animals in the herd (e.g., a show calf) — sometimes animals are in a single-animal group because of when or how the record was submitted or because of incorrect group codes being used. Process data is a key reason why contemporary groups are unintentionally divided for several traits like birth, weaning, and yearling. Contemporary groups build from birth; so if an animal is in

Figure 1: ***Question in AAA Login when checking out birth weights.***



a single contemporary group at birth, it will remain that way.

When records for animals that are in the same group are submitted on different days, this creates a different process date for those groups and those animals are split based on data process date, in addition to other contemporary grouping guidelines. The exception to this rule is birth weights when submitting records through AAA Login. When submitting birth weights through AAA Login, at checkout, there is a question asking if these are the last birth weights to submit for the calving season (Figure 1). Answering "no" to this question allows data to be submitted on multiple days and those calves have the opportunity to be in the same contemporary group. If the question is answered "yes," the group will close.

For example, if you are keeping records in Login throughout the calving season and want to submit the cart, but want to continue to add calves to the contemporary group, answering the question "no" allows that opportunity. The contemporary group can be closed by answering "yes" or submission of weaning weights.

Another reason data may not be included in the NCE would be due to lack of variation. This is especially true with many scoring traits. For example, scoring feet for claw shape and foot angle on yearling age animals, if there is no variation in the feet in the group, that data will be stored in AHIR, but it will not be able to be used in the NCE, because there are no differences in the group. The same is true for traits like docility or hair shed. Variation is an important component for useful genetic comparisons.

ET calves

Embryo transfer (ET) calves vary slightly based on if they are from a registered recipient or a commercial dam and if they are *in vitro* fertilization (IVF) or conventional embryos. Conventional ET calves from a registered recipient can have their birth and weaning weights included in the NCE. Any IVF ET calf regardless of recipient and conventional ET calves from commercial recipients do not have their birth and weaning weights included in the NCE. The reason is because both birth and weaning weights have a maternal component. Without having information about the recipient dam, the maternal components cannot be accounted for in the model. Embryo transfer calves because of IVF, regardless of recipient are not included because of large offspring syndrome that cannot be accounted for today.

All data that are submitted to the AHIR program are stored and available for your reference. While not all records in AHIR are able to be used in the NCE because of reasons such as contemporary group size or lack of variation, you can make sure you are making the most of your records by following the guidelines from the Association. AJ

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