



Skip the Competition, Start Collaboration

Across-country genetic evaluations bring worldwide data improvements.

by Briley Richard, American Angus Association

The key to progress is collaboration. While true in many aspects, it especially has value when discussing across-country genetic evaluations, said André Garcia, Angus Genetics Inc. (AGI).

He further explained to attendees of the 2022 Beef Improvement Federation (BIF) Advancements in Emerging Technology technical breakout session how international genetic evaluations facilitate international commerce, increase accuracy of evaluations and allow for mutually beneficial research efforts.

According to Garcia, the real challenge faced is how to combine the data.

Merging barriers include database discrepancies, differences in data recording, trait definitions and pedigree links.

“If you can combine those populations with pedigrees and use genomics, pulling the data together could be beneficial for the accuracy of the evaluations,” Garcia said. “The first step to investigating opportunities is to combine the data, and that’s the challenging part.”

One of these challenges is that the correlation between countries for a given trait is less than one indicating some level of genotype-by-

environment (GxE) interaction. The GxE interaction could cause some re-ranking of animals but would create a basis of comparison. Proper contemporary group structure can help alleviate this.

Angus efforts

The American Angus Association has collaborated with the Canadian Angus Association and Angus Australia on various research projects and routine genetic evaluations. To help ease international commerce and allow for the exchange of genetics, routine across-country genetic evaluations generate one set

of EPD (expected progeny difference) values.

The Association produces a weekly genetic evaluation of 20 traits combining the data from the United States and

Canada. Additionally, the foot score evaluation for foot angle and claw set includes data from all three countries. These joint evaluations include phenotypes, pedigrees and genotypes.

In the collaboration of all three countries, Canada reports data monthly and Australia reports biweekly, which get combined and processed by the American Angus Association.

“It’s very important that we have pedigrees to link all the animals in the records,” Garcia said. “If we don’t have those pedigree links, you’re pulling all the data together, but it’s not really connected.”

Australia has trained technicians for foot scoring and has approximately 10,000 more scores than the United States. Australia’s increased scoring data volume is due to their scoring system having been in place much longer than the United States. The scores also vary due to the United States scoring animals at yearling age while Australia scores between 1-2 years of age.

By combining the data, Garcia said the number of records reported obviously increases, which in turn increases the accuracy of the genetic evaluation. Additionally, the accuracy of individual sires may also increase if they have progeny recorded in multiple countries.

With the proper model and proper contemporary group structures, across-country evaluations are feasible and beneficial, Garcia said. The database, compatible trait definitions, increased database accuracy, research collaboration and potential for international monetary benefit offers support to across-country genetic evaluations efforts. **AJ**

Editor’s note: For comprehensive coverage of the event, visit www.BIFconference.com. For more information about BIF, visit www.beefimprovement.org.