

# BY THE NUMBERS

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## International Collaboration That Promotes Angus Genetics

*When we talk about genetic evaluations, data is one of the first things that come to mind.*

The current genetic evaluation at the American Angus Association combines data from U.S. and Canadian breeders in a long-term valuable collaboration with the Canadian Angus Association. In 2020 Angus Australia joined the collaboration for the foot score evaluation, which now incorporates data from all three countries.

These collaborations are extremely valuable from both a research and commercial standpoint. Angus Genetics Inc. (AGI) combines the data and resources from all parties, which allows us to answer more complex questions about the breed's genetics on a global scale. Combining databases also allows Angus breeders to have a unique and more robust set of expected progeny differences (EPDs) to help compare animals from different countries. Breeders can use these EPDs to make better selection decisions and stimulate the commerce of Angus genetics worldwide.

The research partnership with Angus Australia and the Canadian Angus Association that started with foot score traits is great example of these collaborations. The current foot score genetic evaluation includes more than 380,000 scores combining foot angle and claw set measures, with approximately 190,00 being from American members alone.

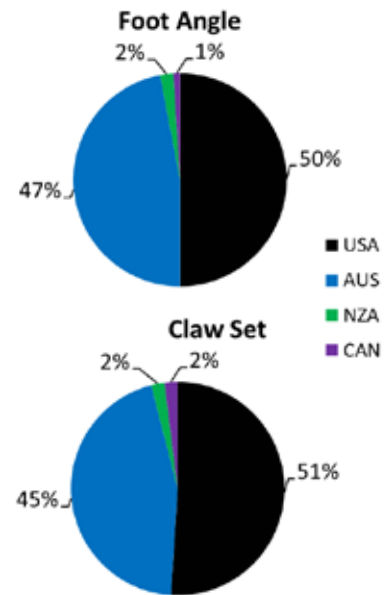
At the start of the joint foot score

evaluation, a large portion of the data was from Angus Australia, as breeders have been recording foot score traits for nearly ten more years in Australia. U.S. bulls utilized for breeding purposes in Australia gained important phenotypes that did not exist in the U.S. database prior. As breeders recognize the importance of the trait, the numbers have turned, and more foot score data is coming in from American Angus breeders (Figure 1).

Combining these databases gives us an opportunity to take advantage of the pedigree connections between the populations and connect the data points to improve our EPD predictions. Additionally, adding genotypes helps us improve those pedigree connections and better predict the relationship between animals from all populations.

Creating a joint genetic evaluation among different countries is not a trivial task. A lot of research has to be done to make sure the traits being measured are compatible, and that differences in management and environment are accounted for in the statistical models. There are challenges from a database and computational standpoint, too, as there are a lot of parts and pieces that need to work together in order to ensure proper data ingestion, quality control and output of results on a weekly

**Figure 1: Distribution of foot scores in the genetic evaluation by country**



basis. Internal collaboration at the Association allows for the research, implementation and execution of these projects to become a reality.

With the current collaboration, the birdge is already established between the American, Canadian, and Australian Angus Associations. With that come plenty of opportunities for more research and development of joint genetic evaluations for other traits, expanding the benefits beyond foot score EPDs. <sup>[A]</sup>

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