

# Management topics

## *A recent history of Angus genetic predictions*



In the modern age of Expected Progeny Differences (EPDs) and indexes, the American

Angus Association (AAA) and its breeders have played a leadership role in adopting technology and rapid genetic change.

In the mid-1980s, basically all breed associations started their National Cattle Evaluation (NCE) programs to produce EPDs on their whole herd book. What their breeders did with the information differed greatly. Without a doubt, of the major breeds, Angus breeders were the first to pick up and run with these new tools. I remember this vividly while I was Extension livestock specialist from 1988 to 1993. By the early 1990s, most major breeds were still mired in the show ring, but many mainstream Angus breeders had already picked genetic predictions as their main selection tool. Arguably, some still applied a "show ring" type of philosophy towards the EPDs. What I mean by that is the ones who had just converted from the show ring still looked to yearly fads and extremes. Although performance fads still exist, most established performance breeders in all breeds have long term breeding goals.

What about the other breeds at the time? Among the major performance breeds of today, Red Angus was certainly ex-

tremely data oriented, but in 1994, it was only the 12th largest breed. Gelbvieh had been formed on performance principles but also was small. Simmental had critical mass but had taken a detour into the show ring. In the early days, it was Angus leading way!

AAA has long had the most aggressive carcass data collection program in the industry, so as a result, was far ahead of the other breed associations in terms of producing carcass EPDs. AAA embarked on aggressive ultrasound research efforts with Iowa State University in an effort to identify carcass characteristics earlier. This groundbreaking work allowed producers to identify the composition of yearling cattle, and preliminary ultrasound EPDs were released by 1999, followed soon by production runs. Based on new Beef Improvement Federation Guidelines, the ultrasound and carcass predictions for each trait would later be combined into one EPD. Over time, all major breeds would benefit from this technology by adopting the use of ultrasound.

AAA's NCE has long been recognized within the industry for both quality and quantity of the EPDs produced. They have the largest database of 17 million head (vs. 9 million head in Simmental/Red Angus database), highest percentage AI to tie the database together, and routinely have more weaning weights reported than cattle registered,

indicating a high level of complete contemporary group reporting. In 2001, years ahead of the next association to do so, AAA took their NCE in house, meaning they were producing the EPDs themselves instead of what was becoming a shaky model of having one of the universities do it. In November 2010, they would take this to an unprecedented level by running the EPDs every week, eliminating the need for interims. This took a tremendous amount of expertise and infrastructure, and allows breeders to get the most up to date and accurate EPDs possible at all times.

In an effort to make genetic selection easier, AAA embarked on an industry-leading quest to produce indexes. To make them the most meaningful to producers, they decided to express them in dollar values, i.e. an animal is \$20 better for this index than the other. The \$Value Indexes were released in 2003 for feedlot and terminal traits (\$B, etc.). Realizing the importance of the factory, which is the cow, they released in 2004 Weaned Calf \$Value and Cow Energy Value.

In 2007, AAA formed the wholly owned subsidiary Angus Genetics, Inc. (AGI) to service not only Angus producers with genetic analysis, research and genomics, but also analysis for other breeds. This company provides a wide variety of services, and is one of AAA's higher profile arms. As part of

servicing other breed associations, AGI incorporated an acrossbreed model to provide custom evaluation services for whatever kind of cattle would be in the breed's data base. For Angus breeders in 2010, AGI produced what is so far the only feed efficiency EPD, residual average daily gain.

One of AGI's biggest achievements was in 2009 when they released genomically enhanced EPDs. By using genomics, accuracy can be significantly enhanced, especially on young animals. Although genomics were first used just on carcass traits, they quickly expanded, so in the fall of 2011, all traits were genomically enhanced. Following the methodology blazed by Angus, other breeds like Simmental are now quickly catching up.

In summary, AAA and Angus breeders have a long reputation as early adopters of technology. At every turn, AAA seems to be doing something new and innovative. It is a compliment to their leadership that they have been willing to take risks in an effort to better serve their members and their customers. — **Dr. Bob Hough**

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