By the Numbers

▶ by **Dan Moser,** *Angus Genetics Inc.*

Economic trends

Ever since our association published its first field data **Sire Evaluation Report** ***in 1980, we've also published a table of genetic trends describing the changes in the Angus cattle population over the years. While the Angus genetic evaluation is now updated on a weekly basis, genetic trends, breed averages and other descriptive information are recalculated twice each year, once in July and once in December. This past July, genetic trends for Angus dollar value indexes ($Values), such as weaned calf value ($W) and beef value ($B), were also calculated. Using current economic assumptions, these economic trends describe the change in profitability resulting from genetic change.***

Beginning with the July 2015 genetic evaluation, genetic trends for Angus $Values like $W and $B will be provided. These trends describe the breed's genetic change for profitability over time. These trends were calculated using the average trait EPDs for each birth year as inputs into the economic models used to calculate the $Values.

Understanding genetic trends

Genetic trend values are simply the average expected progeny difference (EPD) of all animals born in a particular year.

When Angus breeders make genetic change through sire selection, their choices drive genetic change for the overall breed. As new technologies have become available, and preferences of commercial cattle producers have evolved, Angus breeders have adopted those technologies to meet the needs of the beef industry.

By reviewing the genetic trend tables published at *www.angus.org/Nce/GeneticTrends.aspx,* it's apparent that Angus genetics have changed dramatically throughout the past decades to offer more value to the commercial industry. Compared with the average bull born in 1972, today's Angus bull will transmit an additional 105 pounds (lb.) of yearling weight, with greater calving ease, as well. Dramatic improvement in carcass quality, muscling, fertility and efficiency are also documented by our genetic trends.

Due to our large population size; intense selection on traits most relevant to the commercial beef industry; and broad adoption of technologies like artificial insemination (AI), embryo transfer (ET) and EPD-based sire selection, change has occurred much more rapidly in Angus than in other breeds. For more information about how Angus genetics compare to the rest of the beef industry, see Tonya Amen's "By The Numbers" column from August 2015.

Beginning with the July 2015 genetic evaluation, genetic trends for Angus $Values like $W and $B will be provided. These trends describe the breed's genetic change for profitability over time. These trends were calculated using the average trait EPDs for each birth year as inputs into the economic models used to calculate the $Values.

It's important to understand that while the economic assumptions are updated annually to reflect the most current industry conditions, the genetic trends for $Values are calculated using the current assumptions, regardless of the year. By doing so, the changing values over time reflect only genetic change, not changing economic assumptions resulting from changes in fed-cattle prices, feed costs, etc.

Next July, when the economic assumptions are again updated, each year's values in the genetic trend table for $Values will change to reflect those most current economic assumptions.

CONTINUED ON PAGE **261**

Fig. 1: Genetic trend in $W, by birth year

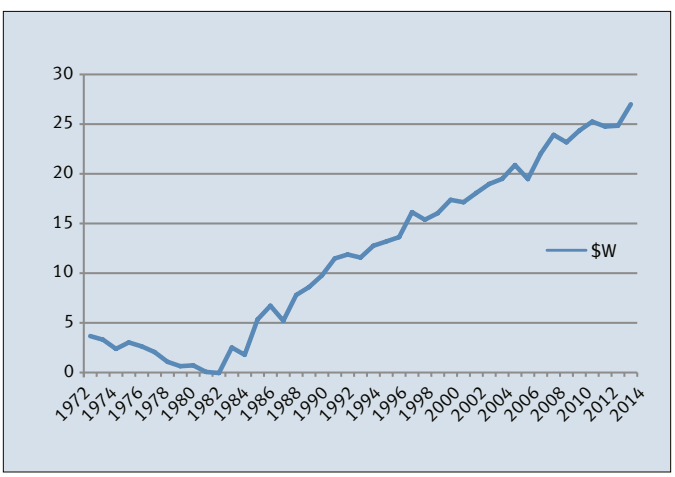
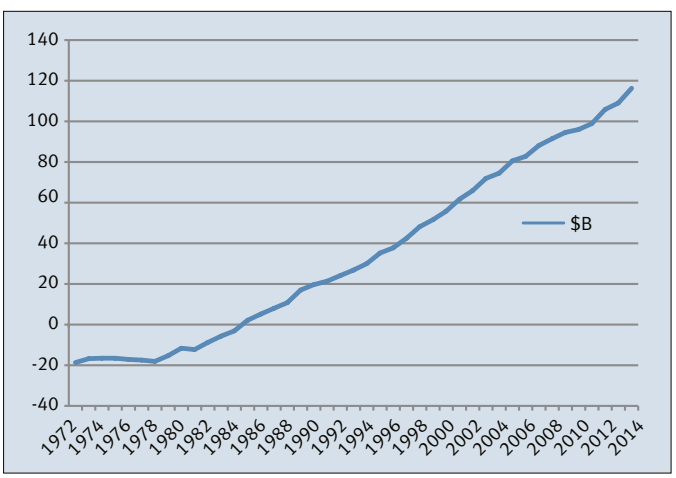


Fig. 2: Genetic trend in $B, by birth year



BY THE NUMBERS

CONTINUED FROM PAGE 258

Economic improvement

Whether you focus on maternal $Values like $W or terminal values such as $B, it's clear that today's Angus cattle offer more profitable genetics than ever before. Compared with cattle born 30 years ago, the average $W value of current genetics is more than $25 higher, primarily due to increased weaning weight and improved calving ease.

While slightly higher mature size and milk levels have caused cow energy value ($EN) to decline, indicating today's genetics have higher cow costs, the increase in $W tells us the revenue from heavier calves at weaning is more than covering the higher expense in a typical production situation.

In just the last decade, average $B value by birth year has increased more than $40, reflecting the value of higher carcass weights, greater carcass quality and improved feed efficiency. Again, these changes are only due to genetic change for traits that determine profitability, not the changes in industry economics we've seen during that time.

As tools like genomic testing become more prevalent, the ability to identify superior genetics at earlier ages provides the opportunity for even faster economic improvement, and the profit potential for Angus genetics of the future will be even greater.

EMAIL: dmoser@angus.org

Fig. 3: Genetic trend in feedlot value ($F), by birth year

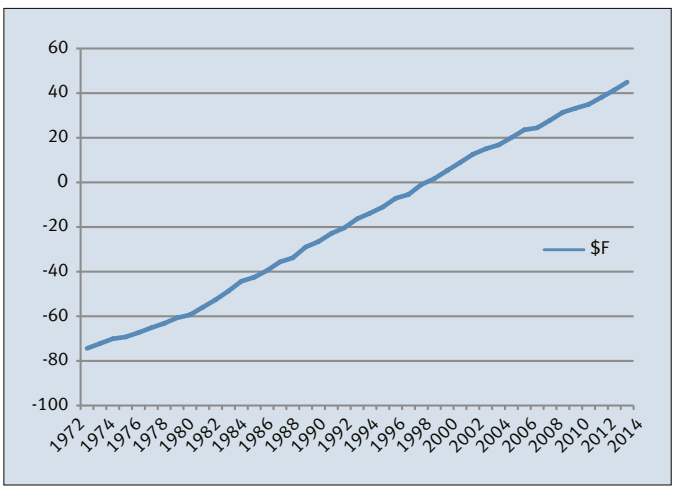


Fig. 4: Genetic trend in grid value ($G), by birth year