

SORTING GATE

The Angus advantage

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The naturally polled head, dark skin around the eyes and superb mothering abilities helped Angus gain early popularity. The dominance of

the black coat color made Angus easily recognizable, but what makes the breed most special could be what is under the hide.

Genetic change and progress have been rapid in the Angus breed due to the commitment of seedstock breeders to data collection. From birth and weaning weights to carcass ultrasound collection, and now fertility and temperament recording, Angus breeders are working to describe their genetics to the best of their ability.

Coupled with advanced expertise in data analysis, the American Angus Association has worked to present the best genetic description of Angus cattle anywhere in the world.

The Angus database is a leader in its kind. Annually, the Association registers more than 300,000 head in its Herd Book, records more than 400,000 birth weights, and submits more than 180,000 genomic tests. In total, it contains millions upon millions of individual weight records, as well as hundreds of thousands of observations for foot conformation, fertility and environmental adaptability (i.e., hair shedding).

With that, it utilizes the world's largest genomic (DNA) database, with more than 1.1 million genotypes being used weekly to describe Angus genetics.



PHOTO BY SHAUNA HERMEL

When comparing breed-of-sire averages using across-breed adjustment factors, Angus continues to have some of the lightest birth weights, heaviest yearling and carcass weights, and best marbling scores.

What's in it for you?

What does that mean to the commercial cattleman? Well, it gives you peace of mind when you are buying a registered Angus bull that his genetic descriptions are the best, most robust, and most accurate picture of genetic merit in the industry. These genetic descriptions, known as expected progeny differences (EPDs), are updated weekly at the American Angus Association to ensure the most current and recent information is utilized.

However, did you know that not all EPDs are created equal?

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Table 1: January 2022 adjustment factors to add to EPD values of respective breed to estimate across-breed EPDs

Breed	BW, lb.	WW, lb.	YW, lb.	Milk, lb.	Marb ^a	REA, sq. in.	Fat, in.	CW, lb.
Angus	0.0	0.0	0.0	0.0	0.00	0.00	0.000	0.0
Hereford	1.0	-14.4	-41.8	-11.3	-0.34	0.04	-0.076	-70.8
Charolais	6.4	5.5	-23.9	-1.8	-0.32	0.79	-0.197	4.1
Red Angus	2.3	-19.2	-28.5	1.4	-0.09	0.27	-0.038	-10.0
Simmental	1.9	-13.0	-25.7	-2.3	-0.15	0.50	-0.066	-5.3
Gelbvieh	3.3	-8.5	-18.0	5.1	-0.55	0.82	-0.119	-14.8

^aMarbling score units: 4.00 = SI⁹⁰; 5.00 = Sm⁰⁰

Across-breed adjustments current as of 12/31/2021. Visit www.beefimprovement.org for entire table and updates.

SOURCE: U.S. Meat Animal Research Center.

In fact, EPDs from different breeds — like Charolais, Hereford, Brahman and Angus — cannot be directly compared against one another. While EPDs have been responsible for substantial genetic progress over the years, EPDs are generally only

comparable within each breed. That’s because different breed information, such as the performance weights and measures I described, are generally kept in separate herd books of origin. With that, each breed links its genetic evaluation back to a different base population, making it nearly impossible to effectively compare EPDs on different breeds at the surface.

Means of comparison

For this reason, since 1993, the U.S. Meat Animal Research Center (USMARC) has provided a table of adjustment factors. These third-party adjustment factors are derived from the USMARC Germplasm Evaluation Project, in which the group uses a herd of commercial cows bred to several prominent sires of

each of the most popular breeds used in the U.S. beef industry. From there, the group determines breed differences among the progeny that have been given the same management and resources to perform.

They then adjust the differences expressed in these progeny by the differences of the sire EPDs that were sampled in the project. The across-breed adjustment factors use simple math to adjust, for example, a Hereford bull to an Angus base.

The adjustment factors in Table 1 can be added to the respective within-breed EPD to adjust it to an Angus base.

After across-breed adjustments are applied, a commercial producer can directly compare the resulting

Table 2: Avg. EPDs for breeds (2020 birth year) converted to an Angus base

Breed	BW	YW	CW	Marb
Angus	1.2	108	48	0.65
Hereford	3.8	44	-4.1	-0.23
Charolais	6.1	79.6	25.3	-0.21
Red Angus	0.5	66.9	12.7	0.33
Simmental	3.6	88.5	24.7	-0.04
Gelbvieh	3	85	17.2	-0.25

SOURCE: American Angus Association based on USMARC data, 2022.
*BW = birth weight EPD; YW = yearling weight EPD; CW = carcass weight EPD; Marb = Marbling score EPD.

to an Angus base using the 2022 USMARC across-breed adjustment factors.

The project also benchmarks breed mean sire differences, which explains the average breed-of-sire differences when bulls from two different breeds are mated to cows of a third, unrelated breed.

It is noteworthy to mention that these differences could be greater or smaller in comparison when conditions vary greatly from those commercial cow-calf conditions experienced at USMARC in Nebraska.

across-breed EPDs (AB-EPDs) amongst the different breeds. This allows for fair comparison, whereas, before producers could be misled by base adjustments in a different population.

Table 2 describes the average EPDs for each breed (2020 birth year) converted

Table 3: Breed-of-sire averages for 2020-born animals, USMARC

Breed	BW, lb.	YW, lb.	CW, lb.	Marb
Angus	84.7	978.6	920.8	6.19
Hereford	87.2	914.7	868.7	5.31
Charolais	89.5	950.2	898.1	5.34
Red Angus	83.9	937.5	885.5	5.87
Simmental	87.1	959.1	897.5	5.50
Gelbvieh	86.5	955.6	890.0	5.30

SOURCE: USMARC, 2022.
*BW = birth weight; YW = yearling weight; CW = carcass weight; Marb = Marbling score

When comparing those breed-of-sire averages, Angus continues to have some of the lightest birth weights, heaviest yearling and carcass weights, and best marbling scores compared to other breeds in the beef industry.

Table 3 shows the breed-of-sire means for 2020 born animals under conditions similar to those at USMARC for birth weight, yearling weight, carcass weight and marbling score.

As one can see, the Angus advantage continues. Not only is the breed still naturally polled with great maternal abilities, it also offers the best combination of growth, calving ease and carcass value. Visit <https://www.angus.org/Nce/AcrossBreedEpdAdjFactors> to see a full list of the across-breed adjustment factors published by USMARC. |

Editor’s note: Authored by AGI staff, “Sorting Gate” features herd improvement topics for commercial producers using Angus genetics. For additional information on performance programs, visit www.angus.org and select topics under the “Management” tab.