BY THE NUMBERS

by Kelli Retallick-Riley, AGI president; and Esther McCabe, director of performance programs

Sire Evaluation Report and National Cattle Evaluation Updates

Hair shedding EPD, updates to $Values.

In conjunction with the biannual *Sire Evaluation Report*, additional updates took place May 27. Each year, alongside the fall *Sire Evaluation Report*, the main and supplemental sire lists, percentile tables, and breed averages are updated.

Hair Shedding EPD released

Early summer shedding of winter hair is an indicator for both tolerance to heat and fescue toxicosis.

A research expected progeny difference (EPD) for hair shedding (HS) was released in February 2020 through research collaboration with the American Angus Association, Angus Genetics Inc. (AGI), Mississippi State University and University of Missouri. Using Angus data, hair shedding has been found to have a moderate heritability of 0.36, falling between that of weaning weight and marbling. Since the release of the research EPD, members have continued to submit scores for hair shedding, and there are nearly 21,000 hair shed scores included in the national cattle evaluation. The HS EPD will be released from the research environment to a production EPD included in the "management" suite of EPDs.

Early summer hair shedding is evaluated on a 1-to-5 visual appraisal scale, where a 1 represents a completely shed winter hair coat and a score of 5 represents a full winter hair coat. Scores should be collected between mid-April and mid-June, depending on location. Scores should be collected when animals in the herd vary the most for hair shedding.

Angus-On-Dairy $Values online pedigree look-up

Angus-On-Dairy dollar value indexes ($Values) are designed as specific crossbreeding tools for dairy producers using Angus bulls to mate to their Holstein or Jersey females.

The Angus-on-Holstein ($AxH) and Angus-on-Jersey ($AxJ) $Values have been available since July 2020 through AAA Login or the AGI website. Historically, the percentile breakdown for $AxH and $AxJ were based on artificial insemination (AI) permitted sires since 2010, regardless of animal type (current sire, current dam, non-parent bull, non-parent cow). When included on EPD/Pedigree Lookup, the percentile breakdown will be based on respective animal type.

For more information on Angus-On-Dairy values, read Stephen Miller's, past AGI director of genetic research, "By the Numbers" in the August 2020 *Angus Journal* or visit *www.angus.org/University/Newsroom/Article?artid=1090*.

Age of dam and age of calf adjustments

With the addition of more than 300,000 records for birth weight

Table 1: ***Distribution of dams across the old and new AOD categories***

	Old		New	
AOD	Age Range	Total individuals	Age range	Total individuals
1	-	-	AOD 1191	819,396
2	AOD 973	721,476	1191 AOD 1565	637,985
3	973 AOD 1186	97,102	1565 AOD 1928	516,967
4	1186 AOD 1368	570,711	1928 AOD 2299	415,092
5	1368 AOD 1551	64,910	2299 AOD 2656	324,117
6	1551 AOD 1916	517,647	2656 AOD 3026	250,407
7	1916 AOD 3741	1,310,928	3026 AOD 3389	185,929
8	AOD > 3741	217,184	3389 AOD 3760	134,112
9	-	-	AOD > 3760	215,953

Table 2: ***Comparison of 2021 and 2022 seven-year average quality components of the quality grid assumptions***

Quality grid assumptions:	2021	2022
Prime premium ($/cwt. above Choice)	$20.05	$21.15
CAB premium ($/cwt. above Choice)	$5.31	$5.66
Choice-Select spread ($/cwt.)	$-13.23	$-14.72
Standard discount ($/cwt.)	$-37.23	$-38.66

(BW) and weaning weight (WW) each year and because of selection and genetic gain over time, it is important to review and update age of dam (AOD) and age of calf (AOC) adjustments used to adjust birth and weaning weights so they can be accurately compared.

This ensures adjustments reflect all phenotypic records being recorded, and in return EPDs are as accurate as possible. The most notable updates come through the expansion of AOD categories from 7-9, which allows for a better distribution of dams across different categories. Table 1 describes the distribution of dams across the old and new AOD categories.

New adjustments will go into effect May 27, 2022, and updates will be only be applied to data processed after this date. No data submitted prior to this date will be updated, and no changes to already published EPDs will be seen.

For more details about updates to age of dam and age of calf parameters for adjusted birth and weaning weights, read the May 2022 "By The Numbers" (*www.angusjournal.com/ArticlePDF/0522-by-the-numbers.pdf*).

Annual update to genomic scores

While genomic-enhanced EPDs (GE-EPDs) are updated on a weekly basis, genomic scores are only updated once a year. This annual update will take place May 27, 2022. The update includes a larger reference population, which genomic scores are ranked against.

With that, genomic scores are a byproduct of the genetic evaluation, so as EPDs are updated, genomic scores will be updated as well.

It is always preferable to use the GE-EPDs when making selection decisions, and the updates to these genomic scores will not affect the GE-EPDs themselves. To learn more about GE-EPDs, visit *www.angus.org/AGI/GenomicEnhancedEPDs.pdf*.

Annual update to economic assumptions

Each year, the costs and revenues underlying the bio-economic model, which drive the Association's $Values, are updated. This annual update is assembled using data provided by CattleFax. The economic assumptions implemented each year are the average of the previous seven years of data — the 2022 economic assumptions are based on prices recorded from 2015 to 2021.

This year's biggest changes are in terms of weaned calf prices. In May 2021, economic assumptions based on the average of 2014-2020 implemented a weaned calf price of $182 per hundredweight (cwt.) for steer calves and $168 per cwt. for heifer calves. The exchange of 2014 and 2021 prices where 2014 was reaching all-time highs of $235 per cwt. for weaned steers and $217 per cwt. for weaned heifers, is replaced by 2021, which includes weaned calf values at $163 per cwt. for steers and $146 per cwt. for heifers, landing the new 7-year average at $172/cwt and $158/cwt for steers and heifers, respectively. Even though the value of weaned calves has rebounded somewhat year over year (2020 to 2021), those prices were not enough to offset 2014. For that reason an average downward shift across the population in maternal weaned calf value ($M) will result, as weaned calf price is a main profit driver in the index.

When looking across a group of 2020-born non-parent bulls (n=109,560), When looking across a group of 2020-bron non-parent bulls (n=109,560), the largest decrease in $M was $-4. However, only a small amount of re-ranking occurred with correlations being over 0.99.

Ration costs and days on feed continued to climb. Ration costs increased from $171 to $178 per ton, while time on feed increased slightly from 240 days to 246 days for calf-feds and 168 to 170 for yearling animals. A slight increase in quality premiums was seen. Remember $Values employ a blended average grid of the weekly highs and averages throughout the given years. Table 2 compares the 2021 and 2022 seven-year average quality components of the quality grid assumptions. Little movement in yield grade assumptions were represented.

Overall, the above updates did not result in a significant change to individual $Values. Updates to economic assumptions resulted in correlations above 0.99. Even with these very high correlations, some individual animals can change. Breeders can expect sires to rank very similarly when the 2022 assumptions are implemented. AJ

Editor's note: For more information on $Values, visit www.angus.org/nce/valueindexes.