



AB-EPDs Released

MARC releases adjustment factors to provide across-breed EPDs.

Larry Cundiff unveiled the table of adjustment factors to be used to estimate across-breed expected progeny differences (AB-EPDs) at the 38th Beef Improvement Federation (BIF) Annual Meeting and Research Symposium in Choctaw, Miss., April 19.

Bulls of different breeds can be compared on the same EPD scale by adding the appropriate adjustment factor (see Table 1) to the within-breed EPDs produced in the most recent genetic evaluations for each of the 16 breeds.

Applying the adjustment

For example, let's say your customer is trying to compare an Angus bull, a Charolais bull and a Simmental bull on the basis of their EPDs. The yearling weight EPDs provided by the given associations are near breed average for the three bulls at +7.2 pounds (lb.) for the Charolais bull, +58.0 lb. for the Simmental bull and +74.4 for the Angus bull.

The AB-EPD adjustment factors (see Table 1) are 53.1 for Charolais, 20.8 for Simmental

and 0 for Angus, since Angus is set as the base of comparison. To convert the EPDs provided by the respective breed associations to a comparable basis, the appropriate adjustment factor should be added to each bull's EPD. The AB-EPD for the Charolais bull is 60.3 (7.2 + 53.1), for the Simmental bull is 78.8 (58.0 + 20.8) and for the Angus bull is 74.4 (74.4 + 0.0).

The difference between the AB-EPDs represents the expected difference in the average progeny yearling weights when the bulls are mated to cows of another breed. In this example, the Angus bull would be expected to sire progeny that would average 4.4 lb. less than the average of the Simmental bull's progeny, and 14.1 lb. more than the progeny of the Charolais bull at a year of age.

The adjustment factors in Table 1 were updated using EPDs from the most recent national cattle evaluations conducted by each of the 16 breeds. The adjustment factors are based on "head-to-head" comparison of progeny of sires of those breeds at the U.S. Meat Animal Research Center (MARC), Clay Center, Neb. The analyses were conducted

by Cundiff and Dale Van Vleck, both MARC research geneticists.

A useful tool

AB-EPDs are most useful to commercial producers purchasing bulls of more than one breed to use in systematic crossbreeding programs, Cundiff says. Uniformity from one generation to the next can be improved by selection of bulls with similar AB-EPDs. Uniformity is especially important in selection of bulls for use in rotational crossbreeding systems for traits such as birth weight to manage calving difficulty and for traits related to cow size and milk production to effectively manage feed requirements in cow herds.

AB-EPDs for growth traits should be emphasized in selection of bulls for terminal crossbreeding of older cows, Cundiff recommends. AB-EPDs for birth weights should be considered in selection of bulls for use on first-calf heifers if lower birth weights are needed.

EPDs are published annually by most beef cattle breed associations. EPDs estimate differences expected in performance of future progeny of two or more bulls of the same breed for birth weight, weaning weight, yearling weight, maternal weaning weight and milking ability (as reflected in progeny weaning weights).

Without the across-breed adjustment factors, EPDs cannot be used to compare animals of different breeds because EPDs are computed separately for each breed association and each breed has a different base point. The adjustment factors reflect not only current breed differences but also differences in the base point for which average EPD = 0 for each breed. Thus, the adjustment factors alone are not estimates of average breed differences.

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Editor's Note: This article was adapted from an article presented by the MARC at the 2006 BIF annual meeting.

Table 1: Adjustment factors to add to EPDs of 16 breeds to estimate across-breed EPDs

Breed	Birth wt.	Weaning wt.	Yearling wt.	Milk
Angus	0.0	0.0	0.0	0.0
Hereford	2.9	-2.5	-15.7	-18.3
Red Angus	3.0	-1.6	-0.8	-8.1
Shorthorn	7.1	30.6	44.6	15.0
S. Devon	6.1	22.6	41.3	5.3
Brahman	12.5	35.9	-5.2	26.5
Limousin	4.1	1.8	-21.5	-16.4
Simmental	5.8	22.6	20.8	11.9
Charolais	10.0	38.8	53.1	1.3
Gelbvieh	4.7	6.2	-22.6	4.6
Maine-Anjou	6.3	-6.2	-43.4	-7.2
Salers	4.2	29.0	42.1	11.2
Tarentaise	3.1	31.7	11.5	18.6
Braunvieh	6.0	29.9	11.9	24.1
Brangus	5.2	19.9	21.1	-2.6
Beefmaster	9.2	38.5	37.3	-7.1

Source: Larry V. Cundiff and L. Dale Van Vleck, Roman L. Hruska U.S. Meat Animal Research Center, Clay Center, Neb. 2006.