

## **Across Breed EPD Table**

The table of adjustment factors to estimate across-breed expected progeny differences (AB-EPDs) for fourteen breeds was presented to the Genetic Prediction Committee at the Beef Improvement Federation Annual Meeting in San Antonio, Texas, July 12 (see table). Animals of different breeds can be compared on the same EPD scale, after adding the appropriate adjustment factor to expected progeny differences (EPDs) produced in the most recent genetic evaluations for each of the fourteen breeds.

For example, if a Gelbvieh bull has an EPD for weaning weight of +25 and a Hereford bull has an EPD of +25.0, would we expect this progeny out of a different breed of dam (e.g., Angus) to weigh about the same? No, not unless the adjustment factor is about the same. In this case the AB-EPD for the Gelbvieh bull is 33.1, which is the table adjustment factor of 8.1 added to the Gelbvieh bull's EPD of +25.0. The AB-EPD of the Hereford bull is 25.4, the table adjustment of 0.4 added to the Hereford bull's EPD of 25. In this example, progeny of the Gelbvieh bull would be expected to weigh, on average 7.7 lb more at weaning than progeny of the Hereford bull ( $8.1 + 25.0) - (0.4 + 25) = 7.7$  lb.

The AB-EPDs are most useful to commercial producers purchasing bulls of two or more breeds to use in systematic cross breeding programs. 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 cross breeding 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. Divergence of AB-EPDs for growth traits should be emphasized in selection of bulls for terminal cross breeding. Divergence in AB-EPDs should be considered in selection of bulls for use on first calf heifers, emphasizing lower birth weights.

EPDs are published annually by breed association for most breeds of beef cattle. EPDs can be used to estimate differences expected in performance of future progeny of two or more individuals in 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 can not be used to compare animals of different breeds because they are computed separately for each breed and each breed has a different base point. The adjustment factors not only reflect current breed differences but also differences in the base (EPD = 0) of each breed. Thus, adjustment factors alone can not be used to estimate average breed differences.

The adjustment factors were updated using EPDs from the most recent national cattle evaluations conducted by associations of each of the fourteen breeds. The table is based on "head to head" comparison of the breeds at the U.S. Meat Animal Research Center (MARC), Clay Center, Nebraska. The analysis was conducted by MARC Research Geneticists, Dale Van Vleck and Larry Cundiff.

ADJUSTMENT FACTORS TO ADD TO EPDs OF FOURTEEN DIFFERENT BREEDS  
TO ESTIMATE AB-EPDs

<b>Breed</b>	<b>Birth Weight</b>	<b>Weaning Weight</b>	<b>Yearling Weight</b>	<b>Milk</b>
Hereford	3.6	0.4	-8.8	-14.4
Angus	0	0	0	0
Shorthorn	7.4	28.0	39.1	13.1
South Devon	6.8	20.1	36.0	2.2
Brahman	13.1	34.1	-9.1	24.6
Simmental	6.8	20.7	18.1	13.2
Limousin	5.9	22.1	16.2	-1.0
Charolais	10.5	37.7	50.8	6.0
Maine Anjou	6.5	16.0	0.7	10.8
Gelbvieh	5.8	8.1	-19.9	13.1
Pinzgauer	7.6	26.1	21.3	7.2
Tarentaise	3.7	28.5	10.5	17.2
Salers	5.1	26.9	35.1	12.4
Red Angus	3.3	-4.0	-5.7	---

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