

2007 ACROSS-BREED EPD TABLE

The table of adjustment factors to be used to estimate across-breed expected progeny differences (AB-EPDs) for sixteen breeds was presented at the Beef Improvement Federation Annual Meeting in Fort Collins, Colorado on June 7 (see attached table). Bulls of different breeds can be compared on the same EPD scale by adding the appropriate adjustment factor to the expected progeny differences (EPDs) produced in the most recent genetic evaluations for each of the sixteen breeds.

As an example, suppose a Simmental bull has a weaning weight EPD of + 25.0 lb (which is slightly below the average of 32.9 lb for Simmental cattle born in 2005) and a Gelbvieh bull has a weaning weight EPD of + 45.0 lb (which is slightly above the average of 41.0 lb for Gelbvieh cattle born in 2005). The across-breed adjustment factors for weaning weight (see table) are 24.4 lb for Simmental and 7.0 lb for Gelbvieh. The AB-EPD is $25.0 \text{ lb} + 24.4 \text{ lb} = 49.4 \text{ lb}$ for the Simmental bull and $45.0 \text{ lb} + 7.0 \text{ lb} = 52.0 \text{ lb}$ for the Gelbvieh bull. The expected weaning weight difference when both are mated to cows of another breed (e.g., Angus) would be $49.4 \text{ lb} - 52.0 \text{ lb} = -2.6 \text{ lb}$.

The AB-EPDs are most useful to commercial producers purchasing bulls of more than one breed to use in cross-breeding programs. Uniformity from one generation to the next can be improved by selecting bulls with similar AB-EPDs. Selection for uniformity is especially important 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. In terminal cross-breeding systems, AB-EPDs for growth traits can be used to identify bulls across breeds whose progeny should have the highest growth potential. Birth weight AB-EPDs are useful for selecting bulls for use on first calf heifers to decrease the likelihood of dystocia.

Most breed associations publish EPDs on an annual basis. These EPDs predict differences expected in performance of future progeny of two or more bulls within the same breed for birth weight, weaning weight, yearling weight, and maternal milking ability (as reflected in progeny weaning weights). Normally, the EPDs of bulls from different breeds cannot be compared because most breed associations compute their EPDs in separate analyses and each breed has a different base point (where the average EPD = 0). The across-breed adjustment factors allow producers to compare the EPDs for animals from different breeds for these traits; these factors reflect both the current breed difference (for animals born in 2005) and differences in the breed base point.

The adjustment factors in the table were updated using EPDs from the most recent national cattle evaluations conducted by each of the sixteen breed associations. The breed differences used to calculate the factors are based on comparisons of progeny of sires from each of these breeds at the U.S. Meat Animal Research Center (USMARC) in Clay Center, Nebraska. These analyses were conducted by USMARC geneticists Larry Kuehn and Mark Thallman with the assistance of Dale Van Vleck and Larry Cundiff.

**ADJUSTMENT FACTORS TO ADD TO EPDs OF SIXTEEN
DIFFERENT BREEDS TO ESTIMATE ACROSS BREED EPDs**

Breed	Birth Wt.	Weaning Wt.	Yearling Wt.	Maternal Milk
Angus	0.0	0.0	0.0	0.0
Hereford	2.7	-3.1	-12.7	-15.7
Red Angus	2.5	-4.7	-0.7	-5.1
Shorthorn	7.0	32.5	46.1	16.6
South Devon	5.8	23.1	41.7	8.0
Braunvieh	6.3	30.3	17.4	24.5
Charolais	9.6	40.9	48.7	3.5
Gelbvieh	4.4	7.0	-21.2	6.2
Limousin	4.0	-1.3	-24.0	-12.6
Maine-Anjou	7.1	-2.9	-31.9	-6.2
Salers	4.2	30.7	43.5	12.8
Simmental	5.7	24.4	17.0	13.7
Tarentaise	3.0	31.9	18.3	20.0
Beefmaster	9.0	42.2	43.7	-4.1
Brahman	12.1	38.5	2.6	26.7
Brangus	5.0	24.3	26.5	-3.1

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