

EPDs

ESTIMATED PROGENY DIFFERENCES

Fact Sheet

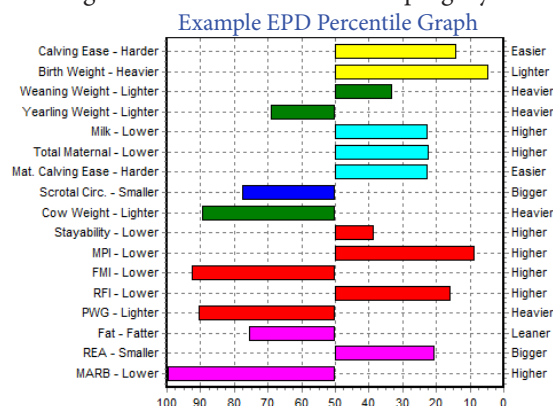
	CE	BW	WW	YW	M	TM
EPD	+3.8	+0.1	+52.6	+72.5	+26.1	+52.4
Acc	.30	.43	.33	.37	.14	-

EPDs are genetic predictions that use pedigree and performance information to estimate the genetic merit of an animal as a parent. As additional information (birth weights, weaning weights etc) is reported the EPD will change to reflect how that animal's progeny have performed, compared to the average animal in the breed.

Comparing EPD values allows us to obtain a difference between two animals. EPDs are one tool in your selection toolbox and it is important not to focus on one trait. Determine which traits are important to you, then choose acceptable EPD ranges for those traits and realize that trade-offs may have to be made.

Many EPDs are expressed in different units (lbs, percentages, square inches etc); so take the time to research each EPD and the units it is being expressed in. EPDs can be positive or negative; it's important to know the breed average and which direction (above or below) average is favorable.

The Canadian Hereford Association participates in the Pan American Cattle Evaluation (PACE) which uses the combined datasets of the Canadian, American, Uruguayan and Argentinian Hereford Associations. The resulting EPD values are directly comparable across the Hereford Breed within these countries. EPDs are NOT comparable between different breeds.



Average The Breed average EPD for a given trait is not necessarily zero and is updated with each EPD run. EPDs are reported as + or - but you still need to compare this number against the breed average to know if it is above or below the average. For example, if the breed average for weaning weight is +20, a bull with a weaning weight EPD of +15 would be expected to sire calves that weigh 5 lbs less at weaning than calves sired by a breed average bull.

Indexes With just one number you can quickly compare two animals. The CHA created two indexes, Maternal Productivity Index and Feedlot Merit Index. Many traits are considered in each evaluation, and weighted based on economical significance. Take the time to explore the traits and weightings used in these indexes, as indexes may help simplify your selection decisions.

Accuracy is the reliability that can be placed on the EPD. Accuracies range from a low of 0 to a high of 1.0; the higher the accuracy, the higher the reliability.

Accuracy is impacted by the number of progeny and ancestral records included in the analysis. EPD accuracy increases as more progeny information (BW, WW, etc) is recorded. This is why younger animals have lower accuracies, and the more proven AI sires generally have the highest accuracy values. The accuracy is a correlation between an animal's unknown true genetic worth and a calculated estimated genetic worth.

Genomically Enhanced EPDs GE^{EPD}

Genomic testing provides a map of the animal's genome at over 30,000 different places across the Genome. From this map the animal's genetic merit as a parent can be estimated. GE EPDs are available for genotyped animals, and are a blend of both genotypic (DNA) and phenotypic (what we can see and measure) information to better predict a greater portion of the genetic potential for that animal. Genomics holds the greatest value for economically important traits that are difficult to measure, and increases accuracy in young sires. Genomic information on a young sire is the equivalent of 8 to 20 progeny. The increased accuracy of Genomics can help you double the rate of genetic gain in your herd.

CHA EPD's

Direct Calving Ease
Birth Weight
Weaning Weight
Yearling Weight
Milk
Total Maternal
Maternal Calving Ease
Scrotal Circumference
Cow Weight
Stayability
Maternal Productivity Index
Feedlot Merit Index
Residual Feed Intake
Post Weaning Gain
Rib Eye Area
Carcass Backfat
Marbling

Average Accuracy Change seen in Young Bulls from Traditional EPD to GE-EPD										
	CEd ACC (%)	BW ACC (%)	WW ACC (%)	YW ACC (%)	MILK ACC (%)	SC ACC (%)	CEm ACC (%)	MAR ACC (%)	REA ACC (%)	FAT ACC (%)
Avg Dec 14 Traditional EPD ACC	6.9	36.6	27.7	29.0	11.9	13.1	5.9	13.5	16.4	15.7
Average Dec 14 GE-EPD ACC	28.5	43.7	32.8	36.0	15.9	18.7	23.6	18.9	23.1	22.3
GE -Traditional ACC Difference	21.6	7.2	5.1	7.0	4.0	5.6	17.7	5.5	6.7	6.6
Progeny Equivalents	20	2	3	4	5	2	20	4	2	1