



EPD Accuracy Values & Possible Change



North American South Devon Association Possible Change Table

Acc	CED	BW	WW	YW	Milk	MWW	CEM	REA	MARB	BF	CW	Stay
0	7.8	3	16.3	25.7	11.9	12.1	7.9	0.43	0.26	0.04	19.3	7.1
0.1	7	2.7	14.7	23.1	10.7	10.9	7.1	0.39	0.23	0.04	17.4	6.4
0.2	6.2	2.4	13	20.6	9.5	9.7	6.3	0.34	0.21	0.03	15.4	5.7
0.3	5.4	2.1	11.4	18	8.3	8.5	5.5	0.3	0.18	0.03	13.5	4.9
0.4	4.7	1.8	9.8	15.4	7.1	7.3	4.7	0.26	0.16	0.02	11.6	4.2
0.5	3.9	1.5	8.2	12.9	6	6.1	3.9	0.22	0.13	0.02	9.7	3.5
0.6	3.1	1.2	6.5	10.3	4.8	4.8	3.1	0.17	0.1	0.02	7.7	2.8
0.7	2.3	0.9	4.9	7.7	3.6	3.6	2.4	0.13	0.08	0.01	5.8	2.1
0.8	1.6	0.6	3.3	5.1	2.4	2.4	1.6	0.09	0.05	0.01	3.9	1.4
0.9	0.8	0.3	1.6	2.6	1.2	1.2	0.8	0.04	0.03	0	1.9	0.7
1	0	0	0	0	0	0	0	0	0	0	0	0

The possible change table displays the relative accuracy value and the amount of change an Expected Progeny Difference (EPD) could incur at that specific level of accuracy. EPDs become accurate as more information is known on a given animal. Sires that have been used extensively through AI obtain high accuracy values for their given EPDs. Young, non-parent bulls with performance information will have relatively low accuracy values for their given EPDs. Animals with little or no performance information submitted will basically have pedigree estimate EPDs (1/2 the sire plus 1/2 the dam's EPDs).

Accuracy values are published for all EPD traits. An accuracy ranges from 0 (zero) to 1. While an EPD is an estimate of genetic merit for an animal for a given trait, an accuracy value is a measurement of the reliability of that genetic estimate. It can be looked at as how 'accurate' we were in estimating the EPD. The more information we know – on a large number of progeny with performance data in many herds in large contemporary groups across a breed or breeds, results in higher accuracy and greater confidence that the EPD has been derived correctly.

Possible Change

Accuracy Value and How it Relates to Possible Change

	BW EPD	Accuracy	Possible Change	"True" EPD Range
Bull A	1.0	0.2	+ or - 2.4	-1.4 to +3.4
Bull B	1.0	0.9	+ or - 0.3	-0.7 to +1.3

Everyone who has used EPDs knows that they can change. A young, yearling bull that we purchase sometimes turns into that great one and sometimes he doesn't. Let's look at Birth Weight EPD. We buy a yearling bull with good information submitted and analyzed in the genetic analysis. His Birth Weight EPD is +1.0 and his accuracy value is 0.20. We would expect his Birth Weight EPD to be plus or minus 2.4 lbs. about 2/3 of the time. So, his Birth Weight EPD could end up being -1.4 to +3.4 (adding and subtracting 2.4 – his possible change - to his EPD estimate of +1.0). If we choose an AI sire who has a much higher accuracy of 0.9 for his Birth Weight EPD of +1.0, his EPD for Birth Weight should only change plus or minus 0.3 lbs for a range of +0.7 to +1.3. Thus, the Accuracy value is associated with the amount of risk involved in using the EPD. On the High Accuracy AI bull, there would be a lower level of risk involved in using the EPD. As an example, we decide to AI our heifers to the AI bull and clean-up with our young bull. We can use the AI bull with the 0.9 accuracy on his Birth Weight EPD with greater confidence than the young bull that may see his Birth Weight EPD increase to as much as +3.4, as we get more performance progeny information in the genetic analysis. We could also see that young bull's Birth Weight EPD go as low as -1.4, and be supremely satisfied with our decision to use him clean-up on our heifers.

So, just remember, an EPD is a genetic estimate that has an accuracy value associated with it that tells you how much confidence you can have when using the EPD. They – EPDs - can change. Normally (2/3 of the time), they don't change a great amount. The EPD is still better than raw weights, adjusted weights and ratios and much better than visual appraisal alone.