

HOW TO USE EPDs

Canadian Aberdeen Angus Association

EPDs are useful tools when planning breeding programs. Attention should be paid to the heritability and correlations of the traits a breeder wants to improve upon within the herd. Some traits are more heritable than others resulting in swift progress being made in comparison to other less heritable traits. Also, many traits are correlated meaning that the expression of one trait is related to the expression of another trait. The correlation between traits can be either positive or negative and close attention should be paid to these relationships, when developing selection criteria in a breeding program.

Trait	Heritability Range	Level
Reproductive	Less than 0.20	Low
Growth	0.20-0.40	Moderate
Carcass	Greater than 0.40	High

Understanding the heritability and the effects of correlation between traits will aid in developing a genetic selection program that will optimize improvement on desired traits while minimizing undesirable side effects.

How To Use EPDs in Sire Selection

Each individual breeder must set his own selection goals, based on the needs of his operation, the situation for that trait in his herd, and his production environment.

It would be easier if we could assume that the highest EPDs are the best. Unfortunately, it isn't that simple. Like most decisions, using EPDs for sire selection involves tradeoffs. For example, bulls with high growth EPDs may sire calves with a higher birth weight as well. And there may be other impacts on your operation to consider.

For example, when breeding heifers it is desirable to produce calves with lower birth weights, so a breeder may want to pay special attention to birth weight EPDs of prospective bulls. If all calves were sold as feeders, the milk EPD would generally not rate much attention. Yearling weight will be important if you want to ensure finished steers in the appropriate weight range.

It should also be kept in mind that reaction to selection can differ from trait to trait. This is because some traits have higher heritability than others, and are more easily passed to offspring. For instance growth traits such as weaning weight respond faster to selection, than reproductive traits such as age at first calving.

A balance of traits is required, and the perfect balance for you will depend on your climatic, nutritional and economic environment, as well as the management goals you have set for your herd.

One way to select for several traits are to set minimum and maximum acceptable levels for each trait, and then choose sires that meet criteria. Another method would be rank all sires, on each trait, then develop a weighted index which ranks each bull from one (most desirable) to five for each trait. The bull with the lowest total score would be your first choice.

A SAMPLE SIRE SUMMARY EVALUATION

	Bull Weight		Birth Weight Milk		Weaning Weight		Yearling	
	EPD	Acc	EPD	Acc	EPD	Acc	EPD	Acc
A	6.6	0.75	31.3	0.75	39.5	0.68	-5.6	0.58
B	0.1	0.82	14.6	0.83	24.6	0.80	6.0	0.73
C	0.0	0.89	0.3	0.89	11.1	0.88	18.9	0.87
D	-5.9	0.87	-3.8	0.87	-14.4	0.86	10.3	0.85

Producer 1 is looking for a sire that can be used on heifers; he wants a bull that will produce low birth weights and he wants to keep some heifer calves as replacements. Growth performance is not his first priority. The sire that fits his needs is sire D. He has a low birth weight EPD and above-average milk EPD.

Producer 2 has a sound-breeding program; he is looking for a sire that will maintain performance and milking ability. He will select a bull that will increase growth performance and milk while maintaining calving ease. Sire B is his choice.

Producer 3 has a herd of above-average-frame cows and is not planning on keeping heifers as replacements. She is looking for a bull that will give her the most profit at weaning. Sire A will give her the best result in weaning weight. If heifers are kept as replacements, they will, on average, be inferior for maternal milk.

Producer 4 wants to maintain his calving performance and growth performance but would like to increase the milking ability in his females. Sire C is his choice.

From:

<http://www.cdnangus.ca/old%20pages/EPDs.htm>

[Return to Education Page](#)
[Return to Home Page](#)