

Salers Sire Summary

Definitions

EPD – Expected Progeny Difference

Expected Progeny Differences (EPDs) may be used to estimate how future progeny of the animal will perform relative to other animals within the breed. EPDs when they were originally developed were not designed to be used solely for advertising and promotion. Instead, they were developed to allow breeders to evaluate cattle from different herds and different management levels, to be compared on the same level. Ratios are an effective tool to compare animals within a herd, within a contemporary group, but when evaluating animals from varying levels of environments and feed resources, they fall short. Ratios do not allow producers to compare across herds. An animal that weighed 650 in one herd and ratioed high, would not ratio the same in a herd with animals on a higher plane of nutrition, unless it were allowed access to the same level of nutrition. EPDs attempt to remove the environmental and management differences and look strictly at the level of genetics of a given animal. Prior to EPDs, too often, breeders purchased animals that looked to be superior, but this appearance was due solely to the level of feed and care the animal had been exposed to. With accurate performance reporting, breeders have access to more reliable EPDs and can make better judgments on the genetics of the animals they are looking at, not just the level of feeding.

EPDs are reported in +/- pounds for the different growth traits. They are computed from a genetic evaluation system that combines performance information currently available on the sire, his progeny, and related individuals into one value, which estimates genetic transmitting ability. The analysis considers and adjusts for the level of competition within a herd, genetic trend within the breed, and genetic merits of the mates, thus making EPDs on across-the-breed evaluation allowing comparisons of sires produced and utilized in different herds in different years on an equal basis.

Calving Ease Direct EPD

Calving Ease Direct EPDs are based on calving ease scores and birth weights. These EPDs reflect genetic differences in the ability of a sire's calves to be born unassisted from 2 year old heifers. The EPDs are reported as the percentage of unassisted calvings. Higher, more positive Calving Ease Direct EPDs are therefore more favorable, indicating fewer difficult calvings when the sire is used over 2 year old heifers compared to a sire with a lower Calving Ease Direct EPD.

Calving Ease Maternal EPD

Calving Ease Daughters EPDs reflect genetic differences in the ability of a sire's 2 year old daughters to calve without assistance. The EPDs are reported as the percentage of unassisted calvings. Higher, more positive Calving Ease Daughters EPDs are more favorable and indicate fewer difficult calvings from the sire's daughters when they calve as 2 year old heifers compared to a sire with a lower Calving Ease Daughters EPD.

Importantly, the two Calving Ease EPDs share an antagonistic relationship (i.e. they are negatively correlated). In simple terms, this means that sires who may produce lighter calves at birth, therefore causing fewer difficult calvings, will tend to produce smaller, lighter daughters who themselves have a higher number of difficult calvings when calved down as 2 year olds. The challenge is to identify animals that don't follow this genetic relationship and have positive EPDs for both calving ease traits.

Contemporary Groups

All EPDs are based on comparisons of calves within the same contemporary group. Most inaccuracies in EPDs are associated with incorrect reporting of contemporary group information. Submitting accurate performance information on all animals is a necessity in any genetic evaluation program. An animal's performance record needs to be included with its peers to accurately contribute to its EPDs. Likewise, contemporary groups with no variation (i.e., all Docility scores 1) provide no value to the analysis either.

- Contemporary Groups consist of animals of the:
- I. same sex
 - II. born in the same herd and season
(within 60 days)
 - III. managed together and treated alike
 - IV. same weigh date

Heritability Estimates

Heritability is the portion of the total variation in phenotype among animals that is due to genes that are passed on to offspring. Heritabilities range from 0 to 1. The estimates used are derived from the data reported to ASA. The estimates used are as follows:

Trait	Heritability
Birth Weight	0.38
Weaning Weight	0.38
Yearling Weight.....	0.34
Maternal Milk	0.15
Scrotal Circumference	0.30
Stayability.....	0.30
Docility	0.236
Marbling	0.17
Carcass Weight	0.34
Fat Thickness.....	0.27

Acc - Accuracy

Accuracy (Acc) is an expression of the reliability of the EPD and may range from 0 to 1. As accuracy approaches 1.0, the EPD is more reliable and can be expected to change less in the future as more progeny data are accumulated. By reliability, we mean how certain we are that the EPD represents the true genetic merit it estimates.

Accuracy may be categorized into low, medium and high reliability as follows: Low: 0.0 to .40; Medium: .40 to .70; High: .70 to .99. Sires with desired EPD values and high accuracy can be used with confidence that they will favorably contribute to herd improvement. Sires with low accuracy can be considered good prospects, but might be used on a limited basis to minimize risk. Low accuracy values represent situations where calculated EPDs rely heavily on the records of related individuals since few or no progeny are available. These EPDs are the best estimate of the sires' potential at the time, but are associated with a greater degree of uncertainty. It is also important to note that 70% of the time EPDs should change no greater than the values indicated in the table. This does mean 30% of the time they could change more than indicated.

POSSIBLE CHANGE TABLE

Acc	BW	WW	YW	Milk	SC	SC	CW	Fat	REA	RY%	IMF%
0.1	2.5	15.3	24.5	9.6	0.6	0.6	15.8	0.027	0.23	0.57	0.13
0.2	2.2	13.6	21.8	8.5	0.5	0.5	14.1	0.024	0.21	0.51	0.12
0.3	1.9	11.9	19.1	7.5	0.5	0.5	12.3	0.021	0.18	0.44	0.10
0.4	1.6	10.2	16.3	6.4	0.4	0.4	10.5	0.018	0.15	0.38	0.09
0.5	1.4	8.5	13.6	5.3	0.3	0.3	8.8	0.015	0.13	0.32	0.07
0.6	1.1	6.8	10.9	4.3	0.3	0.3	7.0	0.012	0.10	0.25	0.06
0.7	0.8	5.1	8.2	3.2	0.2	0.2	5.3	0.009	0.08	0.19	0.04
0.8	0.5	3.4	5.4	2.1	0.1	0.1	3.5	0.006	0.05	0.13	0.03
0.9	0.1	0.8	1.4	0.5	0.1	0.1	1.8	0.003	0.03	0.06	0.01
1.00	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.000	0.00	0.00	0.00

Example Listing and Trait Definitions

Name	Reg#	DOB	%Salers	#Herds	CED	BW	WW	YW	MWW	Milk	SC	CEM	Stay	Doc	Marb	CW	Fat	REA	RBY
				#Dcalves	Acc	Acc	Acc	Acc		Acc	Acc	Acc	Acc	Acc	Acc	Acc	Acc	Acc	Acc
ASA PERFORMER				30	+1.5	-2.4	+49	+86	+47	+22	+0.6	+0.8	+22	+10	+0.10	+26	-0.03	+0.10	+0.3
987654		3/10/10	PB	351	.65	.76	.72	0.46		0.50	.54	0.69	0.44	0.20	0.34	0.45	0.42	0.40	0.35
Red	Polled			S: ASA SUPERGAINER				D: ABC CHANTILLY											
PERFECT SALERS, SMALL TOWN CO																			

Sire Information – Sires are listed in alphabetical order according to their registered name, followed by registration number. A P, S, or T in the prefix of the registration number indicates Polled, Scurred or Embryo Transplant. Also included are the bull's birth date, breed percentage, recorded color, sire (S), dam (D), breeder (B), and current owner(s) (O).

#Herds (Number of Herds) – The number of herds in which progeny with performance information have been submitted. #DC (Number of Daughters' Calves) – The number of daughters' calves reported with weaning weights contributing to the Maternal Milk EPD. Number of daughters' calves should not be used in lieu of accuracy, but simply to further clarify Milk EPDs.

#Dcalves - The number of daughters that have calves.

CED (Calving Ease Direct) - CED predicts the average difference in ease with which a sire's calves will be born when bred to first-calf heifers. Expressed as percentage of unassisted births with a higher value indicating greater calving ease. CED EPD for this sire indicates you'd expect 2 percent more calves to be born unassisted as compared to a sire with a CED of -0.5. (1.5 minus -.05 = 2%)

BW (Birth Weight) – Birth Weight EPD provides a prediction of differences between sires for progeny birth weights. It is a useful indicator of calving ease as larger calves at birth tend to result in more difficult births. Positive values indicate heavier birthweights. Progeny from the above sire can be expected to weigh 4 lbs less at birth than progeny sired by a bull with an EPD of +2.0 (-2.0 minus 2.0 = -4.0 lbs).

WW (Weaning Weight) – Weaning Weight EPD provides a comparative assessment of a sire's progeny weights at 205 days of age. It indicates growth from birth to weaning. Calves sired by the above bull should have a 12 pound advantage in 205 day adjusted weaning weights compared to calves sired by a bull with an EPD of +10 (32 minus 10 = 12 lbs).

YW (Yearling Weight) – Yearling Weight EPD reflects differences in the 365-day adjusted weight for progeny. It is the best estimate of total growth. YW EPD for this sire indicates his progeny would on average be 30 pounds above the average of progeny from a bull with a YW EPD of +15 (45 minus 15 = 30 lbs).

MWW (Maternal Weaning Weight) – Maternal Weaning Weight EPD provides an estimate of the weaning weight of daughters' calves. The EPD value predicts the difference in average weaning weight of a bull's daughters' calves compared to calves from daughters of other bulls. It reflects the combination of milking ability of a bull's daughters and the growth potential of their calves. MWW, sometimes referred to as total maternal or growth plus milk, is calculated by adding one-half the animal's EPD for weaning weight to the animal's EPD for milk. The bull above should sire daughters with progeny weaning weights averaging 10 lbs. heavier than progeny of a bull's daughters with a MWW EPD of 14 (24 minus 14 = 10 lbs).

Milk (Maternal Milk) – Maternal Milk EPD evaluates the milking ability of a bull's daughters. It is expressed in pounds of calf weaning weight and predicts the differences in average weaning weight of a sire's daughters' calves due strictly to milk production. It estimates a sire's contribution to the growth of daughter's calves solely through his transmission of genes for milk production to daughters. Daughters of the sire in the example should produce progeny with 205-day weights averaging 10 pounds more as a result of greater milk production than daughters of a bull with a Milk EPD of +24 (34 minus 24 = 10 lbs).

SC (Scrotal Circumference) – Scrotal Circumference EPD evaluates the scrotal size of bulls in centimeters from yearling bull data. Scrotal circumference is a good indicator of puberty, fertility, semen quality and quantity. Increases in scrotal size will also result in decreased age of puberty in daughters and greater lifetime production. Positive values indicate larger scrotal circumference.

CEM (Calving Ease Maternal) - CEM predicts the average ease with which a sire's daughters will calve as first-calf heifers when compared to the daughters of another sire in the same evaluation. Expressed as percentage of unassisted births. CEM EPD for this sire indicates you would expect 5 percent more daughters to calve unassisted as compared to daughters of a sire with a CEM of -2%. (+3% minus -2% = 5%)

Stay (Stavability) – Stayability EPD represent the likelihood or probability that daughters from a sire will remain in production to six years of age and older, given the daughters had at least one calf reported prior to six years of age. The EPD is expressed as a deviation from a 50% probability. The sire above would likely see 10% more of his daughters remain in the herd past 6 years than a sire with a +12 Stay EPD (22 minus 12 = 10%). Six years is used as this is the point in which cows are at a breakeven in most commercial herds.

Doc (Docility) – Docility EPD evaluates the likelihood or probability of a sire producing calves with an acceptable docility (score of 1 or 2) on the ASA scoring system. A sire with a +10 Doc EPD would have a 20% greater likelihood of siring calves with an acceptable docility (1 or 2) than a sire with a –10 Doc EPD.

Marb – Marbling Score EPD relates to the amount of intramuscular fat (fat within the muscle). Numerical scores are assigned to each quality grade division for the purpose of calculating EPDs. Positive values indicate greater numerical marbling scores, while negative values indicate lower numerical marbling scores.

CW (Carcass Weight) – Carcass Weight EPD is shown in pounds. Positive values indicate heavier carcass weights, while negative values indicate lighter weights.

Fat (Fat Thickness) – Fat Thickness EPD is derived from carcass data measurements taken from the 3/4 length of the longissimus dorsi muscle (ribeye) between the 12th and 13th rib in hundredths of an inch. Positive values indicate more fat at this location, while negative values indicate leaner animals.

REA (Ribeye Area) – Ribeye Area EPD is measured in square inches. A positive value indicates a larger ribeye, while a negative value indicates a smaller ribeye area. Ribeye area is measured between the 12th and 13th rib and is closely associated with percent retail product.

RBY(Retail Beef Yield Percentage) - Retail Beef Yield % EPD estimates the genetic differences between animals in percentage retail beef yield in a carcass. It reflects economic differences in carcass value and refers to the bone-out yield of a carcass. The EPD is expressed as a percentage. Higher values are expected to produce higher yielding carcasses.

ASA PERFORMER	CED	BW	WW	YW	MWW	Milk	SC	CEM	Stay	Doc	Marb	CW	Fat	REA	RBY
EPD Percentile	20%	5%	25%	30%	20%	35%	15%	30%	75%	70%	15%	25%	40%	35%	35%

Percentile Charts

Non-parent EPDs are based on the animals own performance and the performance of the related individuals. Although low in accuracy, these estimates are superior to using weights and ratios, and are important in the selection and merchandising of young breeding stock. These animals are the most current, complete group of non-parents available. Young sires and dams born in the sire summary year can be compared using this chart.