

Important disclaimer: DO NOT compare index values of purebreds of different breeds, hybrids of different breed composition or purebreds with hybrids — our system was not developed to make valid comparison among these groups. Therefore, you must first determine the breed and breed composition appropriate for your herd and use index values to compare animals within that population.

Expected Progeny Differences (EPDs)

In using EPDs, the difference between two sires' EPDs represents the unit difference expected in the performance of their progeny. For example, if sires A and B have EPDs of +10 and -5, a 15-unit difference would be expected in their progeny (moving from -5 to +10 yields 15 units). Key to using EPDs is knowing in what units they are expressed. For example, if the above case referred to weaning weight EPDs, sire A would be expected to sire 15 pounds more weaning weight than sire B. If calving ease was the trait, sire A would be expected to sire 15 percent more unassisted births in first-calf heifers; in other words, if sire B sired 30 assists in a group of 100 heifers, we would expect sire A to require 15 assists. A percentile-ranking chart is required to determine where a bull's EPDs rank him relative to other bulls in the breed. For more detailed information about EPDs and \$ indexes, visit www.simmental.org. Listed below are the units in which ASA EPDs are expressed:

Calving Ease (CE/CED)

The ease with which a bull's calves are born to first calf heifers.

Birth Weight (BW/Brth)

Pounds of birth weight. The EPD value predicts the difference in average birth weight of a bull's progeny compared to progeny of all other bulls evaluated. A positive value indicates heavier-than-average birth weights while a negative value indicates lighter-than-average birth weights.

Weaning Weight (WW/Wean)

Pounds of weaning weight, taken between 160 and 250 days of age and adjusted to 205 days of age and a mature dam equivalent. Expected progeny performance is reported in pounds. The EPD value predicts the difference in average 205-day weight of a bull's progeny compared to progeny of all other bulls evaluated. A positive value indicates heavier-than-average weaning weights while a negative value indicates lighter-than-average weaning weights.

Yearling Weight (YW/Year)

Pounds of yearling weight, taken between 330 and 440 days of age and adjusted to 365 days of age and a mature dam equivalent. Expected progeny performance is reported in pounds. The EPD value predicts the difference in average 365-day weight of a bull's progeny compared to progeny of all other bull's evaluated. A positive value indicates heavier-than-average yearling weights while a negative value indicates lighter-than-average yearling weights.

Maternal Calving Ease (MCE)

The ease with which a sire's daughters calve as first-calf heifers.

Maternal Milk (Milk/MM)

The milking ability of a bull's daughter in pounds of weaning weight due to milk. The EPD value predicts the difference (due to milking ability) in average 205-day weight of a bull's daughters' calves compared to calves of all other bulls evaluated. Positive values indicate above average milking ability of daughters while negative values indicate below average milking ability.

Maternal Weaning Weight (MWW)

Pounds of weaning weight due to milk and growth. The EPD value predicts the difference in average 205-day weight of a bull's daughters' calves compared to daughters of all other bulls evaluated. The evaluation reflects both the milking ability of the bull's daughters and the growth potential of their calves. A positive value indicates heavier-than-average weaning weights while a negative value indicates lighter-than-average weaning weights.

Stayability (STAY)

Percentage of daughters remaining in the cowherd at six years of age. The EPD provides an estimate of how long a sire's daughters will stay in the herd compared to another sire in the same evaluation. Higher values indicate greater stayability.

Docility (DOC):

Percentage of an animal's offspring that are expected to score favorably (1 or 2) on a five-point scoring system when compared to the offspring of another animal. Expressed as a percentage with higher values being favorable.

Carcass Weight (CW)

The hot carcass weight of a bull's progeny. Expected progeny performance is reported in pounds and adjusted to a slaughter age of 475 days. The EPD predicts the difference in average carcass weight of a bull's progeny compared to progeny of all other bulls evaluated. A positive number indicates heavier-than-average carcass weights while a negative value indicates lower-than-average carcass weights.

Yield Grade (YG)

Predict the average differences in cutability that can be expected between the progeny of animals at a given age endpoint. As with all EPDs, YG is expressed as a deviation. Negative values are desirable. To use it, one must keep in mind that it is in yield grade units. Therefore, lower is better. For example, a bull with a -.33 YG EPD would be expected to sire offspring that are 1/3 of yield grade better (lower) than a zero bull. If zero bulls sired an average yield of 3.0 in a particular environment and management system, offspring of a -0.33 bull would be expected to have an average yield grade of 2.67 (1/3 of a yield grade better/lower).

Marbling Score (Marb/MB/IMF)

A subjective evaluation of the amount and distribution of intramuscular fat. A positive value indicates higher-than-average marbling scores while a negative value indicates lower-than-average marbling scores. Degree of marbling is evaluated in the ribeye muscle between the 12th and 13th rib and is a major factor in determining USDA quality grade. Marbling scores range from 1 (devoid) to 10 (abundant). Expected progeny performance is reported in tenths of a marbling score and adjusted to a slaughter age of 475 days. The EPD value predicts the difference in average marbling score of a bull's progeny compared to progeny of all other evaluated bulls.

Backfat (BF/FAT)

Estimate the average differences that are expected in external fat thickness at the 12th and 13th rib between progeny of different animals. Expressed in inches at 475 days.

Ribeye Area (REA/RE)

Predict the average difference in ribeye area in an animal's progeny when compared to the progeny of another animal at 475 days. Expressed in square inches.

Shear (Shr)

Pounds of force required to shear a rib-eye steak.

Scrotal Circumference (SCR/SC)

The adjusted yearling scrotal circumferences of a bull's progeny when compared to breed average in centimeters.

SIMMENTAL – API \$ and TI \$ EPD INDEXES

The API\$ AND TI\$ EPD Indexes were designed with the aim of simplifying and improving the genetic selection process. These genetic indexes combine relevant EPDs along with economic factors into numbers that makes sense. EPDs such as calving ease, growth, carcass traits, etc. are weighted along with economic data provided by Cattle-Fax such as the cost of feed, choice-select spread, etc. The product of these complex calculations gives us a real world method to compare the merits of different animals. The API and TI indexes calculate the estimated differences between bulls in net dollars returned per cow exposed for two different herd scenarios as described below.

All-Purpose Index (API)

Evaluates sires for use on the entire cow herd (bred to both first-calf heifers and mature cows) with the portion of their daughters required to maintain herd size retained and the remaining heifers and steers put on feed and sold grade and yield.

Terminal Index (TI)

Evaluates sire for use on mature cows with all offspring put on feed and sold grade and yield. Consequently, maternal traits such as milk, stayability, and maternal calving ease are not considered in the index.

Other Definitions and Information

Nondiluted

All blacks are nondiluters and will not sire gray calves when used on black or nondiluter red cows. A nondiluter red will sire only black or red calves when used on black cows.

Homozygous Black

Will only sire black calves when used on black or nondiluter red cows. You will get mostly gray calves when used on yellow cows or red cows that have the dilution gene.

Hetrozygous Black

Will sire both black and red calves when used on nondiluter red cows. When used on yellow or red cows that have the dilution gene you will get roughly half red and the rest will be gray, with some blacks.

Homozygous Polled

All calves will be polled.

Hetrozygous Polled

Approximately half the calves will be polled out of horned cows.

Polled / Scurred

Approximately half the calves will be polled out of horned cows.