American Angus Association® Selection Tools

Expected Progeny Difference (EPD), is the prediction of how future progeny of each animal are expected to perform relative to the progeny of other animals listed in the database. EPDs are expressed in units of measure for the trait, plus or minus. Interim EPDs may appear on young animals when their performance has yet to be incorporated into the American Angus Association National Cattle Evaluation (NCE) procedures. This EPD will be preceded by an "I", and may or may not include the animal's own performance record for a particular trait, depending on its availability, appropriate contemporary grouping, or data edits needed for NCE.

Accuracy (ACC), is the reliability that can be placed on the EPD. An accuracy of close to 1.0 indicates higher reliability. Accuracy is impacted by the number of progeny and ancestral records included in the analysis.

GROWTH

Calving Ease Direct (CED), is expressed as a difference in percentage of unassisted births, with a higher value indicating greater calving ease in first-calf heifers. It predicts the average difference in ease with which a sire's calves will be born when he is bred to first-calf heifers.

Birth Weight EPD (BW), expressed in pounds, is a predictor of a sire's ability to transmit birth weight to his progeny compared to that of other sires.

Weaning Weight EPD (WW), expressed in pounds, is a predictor of a sire's ability to transmit weaning growth to his progeny compared to that of other sires.

Residual Average Daily Gain (RADG), feed efficiency expressed in pounds per day, is a predictor of a sire's genetic ability for postweaning gain in future progeny compared to that of other sires, given a constant amount of feed consumed.

Yearling Weight EPD (YW), expressed in pounds, is a predictor of a sire's ability to transmit yearling growth to his progeny compared to that of other sires.

Yearling Height EPD (YH), is a predictor of a sire's ability to transmit yearling height, expressed in inches, compared to the that of other sires.

Scrotal Circumference EPD (SC), expressed in centimeters, is a predictor of the difference in transmitting ability for scrotal size compared to that of other sires.

Docility (DOC), is expressed as a difference in yearling cattle temperament, with a higher value indicating more favorable docility. It predicts the average difference of progeny from a sire in comparison with another sire's calves.

MATERNAL

Heifer Pregnancy (HP), is a selection tool to increase the probability or chance of a sire's daughters becoming pregnant as first–calf heifers during a normal breeding season. A higher EPD is the more favorable direction, and the EPD is reported in percentage units.

Calving Ease Maternal (CEM), is expressed as a difference in percentage of unassisted births with a higher value indicating greater calving ease in first-calf daughters. It predicts the average ease with which a sire's daughters will calve as first-calf heifers when compared to daughters of other sires.

Maternal Milk EPD (Milk), is a predictor of a sire's genetic merit for milk and mothering ability as expressed in his daughters compared to daughters of other sires. In other words, it is that part of a calf's weaning weight attributed to milk and mothering ability.

Mature Weight EPD (MW), expressed in pounds, is a predictor of the difference in mature weight of daughters of a sire compared to the daughters of other sires.

Mature Height EPD (MH), expressed in inches, is a predictor of the difference in mature height of a sire's daughters compared to daughters of other sires.

Cow Energy Value ($EN), expressed in dollars savings per cow per year, assesses differences in cow energy requirements as an expected dollar savings difference in daughters of sires. A larger value is more favorable when comparing two animals (more dollars saved on feed energy expenses). Components for computing the cow $EN savings difference include lactation energy requirements and energy costs associated with differences in mature cow size.

CARCASS

The genetic evaluation produces a single set of EPDs for carcass weight, marbling score, Ribeye area and fat thickness. The units of measure are in carcass trait format and analyzed on an age-constant basis.

Carcass Weight EPD (CW), expressed in pounds is a predictor of the differences in hot carcass weight of a sire's progeny compared to progeny of other sires.

Marbling EPD (Marb), expressed as a fraction of the difference in USDA marbling score of a sire's progeny compared to progeny of other sires.

Ribeye Area EPD (RE), expressed in square inches, is a predictor of the difference in ribeye area of a sire's progeny compared to progeny of other sires.

Fat Thickness EPD (Fat), expressed in inches, is a predictor of the differences in external fat thickness at the 12th rib (as measured between the 12th and 13th ribs) of a sire's progeny compared to progeny of other sires.

$VALUE INDEXES

$Value indexes, are multi-trait selection indexes to assist beef producers by adding simplicity to genetic selection decisions. $Values are reported in dollars per head, where a higher value is more favorable. The $Value is an estimate of how future progeny of each sire are expected to perform, on average, compared to progeny of other sires in the database if the sires were randomly mated to cows and if calves were exposed to the same environment.

Weaned Calf Value ($W), an index value expressed in dollars per head, is the expected average difference in future progeny performance for pre-weaning merit. $W includes both revenue and cost adjustments associated with differences in birth weight, weaning direct growth, maternal milk, and mature cow size.

Feedlot Value ($F), an index value expressed in dollars per head, is the expected average difference in future progeny performance for postweaning merit compared to progeny of other sires.

Grid Value ($G), an index value expressed in dollars per head, is the expected average difference in future progeny performance for carcass grid merit compared to progeny of other sires.

Quality Grade ($QG) represents the quality grade segment of the economic advantage found in $G. $QG is intended for the specialized user wanting to place more emphasis on improving quality grade. The carcass marbling (Marb) EPD, which is influenced by carcass marbling scores and ultrasound percent intramuscular fat (% IMF) measurements, contribute to $QG.

Yield Grade ($YG) $YG represents the yield grade segment of the economic advantage found in $G. $YG is intended for the specialized user wanting to place more emphasis on red meat yield. It provides a multi-trait approach to encompass ribeye, fat thickness and weight into an economic value for red meat yield.
$G combines both $QG and $YG, and may be the best carcass decision tool for focusing on quality and red meat yield simultaneously.

Beef Value ($B), an index value expressed in dollars per head, is the expected average difference in future progeny performance for postweaning and carcass value compared to progeny of other sires.