

AMERICAN GELBIEH ASSOCIATION EPDS AND ECONOMIC INDEXES

Calving Ease Direct (CED): Percent of unassisted births of a bull's calves when he is used on heifers. A higher number is favorable, meaning better calving ease. This EPD can be vital to a rancher looking to decrease the amount of calves pulled in his herd.

Milk (Milk): The genetic ability of a sire's daughters to produce milk expressed in pounds of weaning weight.

Calving Ease Maternal (CEM): Represented as percent of unassisted births in a sire's first-calving daughters. A higher number represents more favorable calving ease. This EPD is important to a rancher's bottom line because it predicts which animals produce daughters with a genetic pre-disposition to calve unassisted as heifers.

Heifer Pregnancy (HP): Predicts the probability that a bull's daughters will become pregnant as first-calf heifers in a regular breeding season, expressed as a percent. A higher value of this EPD is favorable, meaning that a higher percentage of a sire's daughters get pregnant as first calf heifers compared to other sires in his contemporary group.

30-month Pregnancy (Pg30): Predicts the probability that a bull's daughters will become pregnant and calve at three years of age, given that they calved as first-calf heifers. This EPD is expressed as a percent, again, with a higher number being more favorable meaning a higher percentage of a sire's daughters will calve at three years of age, given they calved as first-calf heifers.

Stayability (STAY): Predicts the genetic difference, in terms of percent probability, that a bull's daughters will stay productive within a herd to at least six year of age. The stayability EPD is one of the best measures currently available to compare a bull's ability to produce females with reproductive longevity.

Docility (DOC): Is reported as a percentage, with higher numbers indicating a higher percent of offspring receiving a disposition score of 1 (docile).

Scrotal Circumference (SC): Predicts the difference, in centimeters, of scrotal circumference of an animal's male offspring at yearling compared to the SC of other animals' male offspring.

Birth Weight (BW): Predicts the difference, in pounds, for birth weight of the calf.

Weaning Weight (WW): Predicts the difference, in pounds, for weaning weight (adjusted to age of dam and a standard 205 days of age). This is an indicator of growth from birth to weaning.

Yearling weight (YW): Predicts the expected difference, in pounds, for yearling weight (adjusted to a standard 365 days of age). This is an indicator of growth from birth to yearling.

Mature Weight (MWT): Body weight of cows adjusted to six years of age at body condition score 5. MWT is reported in pounds and is computed from a genetic model that leverages information from weaning weight, post-weaning gain, and mature weights of cows. Reported weights are adjusted for both age at observation and for body condition. Body weights of cows 2 to 12 years of age are utilized in the evaluation.

Cow Energy Requirement-Yearly (CERY): Mature body weight, lactation potential and birth weight are primary predictors of energy requirements. Mature Weight, Milk and Birth Weight EPD are utilized to inform prediction equations from beef cow nutrition research to estimate differences in energy requirement over a production year. The CERY EPD is reported in pounds of Total Digestible Nutrients (TDN) required for an age 6 cow.

Yield Grade (YG): Differences in yield grade score, which is a predictor of percent retail product. Smaller values suggest that progeny will have a better lean to fat ratio.

Carcass Weight (CW): Differences in pounds of hot carcass weight, adjusted to an industry standard age endpoint.

Ribeye area (CREA): Differences in ribeye area in inches between the 12th and 13th rib. Greater ribeye areas are preferable.

Marbling (MARB): Predicts the differences in the degree of marbling within the ribeye as expressed in marbling score units. Greater marbling numbers are preferable and are an indicator of higher carcass quality grades.

Fat (CFAT): Differences for fat thickness, in inches, for a carcass over the 12th rib, smaller numbers of fat thickness are preferable as excess fat can be detrimental to yield grade.

Dry Matter Intake (DMI): The genetic difference in pounds of expected average daily dry matter intake of progeny.

\$GAIN: Reports the difference in expected marginal value of gain less the cost of feed to achieve that gain. Reported in dollars of marginal profit with more positive values representing increased efficiency and profit.

Maternal Profit Index (MPI): In this production scenario, Gelbvieh bulls are mated to Angus-based cows with surplus calves marketed at weaning, with replacement heifers retained from the calf crop. EPDs weighted in this index are Calving Ease Direct (CED) and Maternal (CEM), Weaning Weight (WW), Milk (MILK), Mature Weight (MWT), Dry Matter Intake (DMI), Stayability (STAY), and Heifer Pregnancy (HP). Mature weight is the primary driver and represents the significant cost of maintenance energy requirement in the cow-calf sector. Weaning Weight and Milk (expressed in pounds of calf weaning weight) represent the principal revenue stream. Stayability helps account for differences in replacement costs in the system and the effect of heifer retention on revenue streams. This index should be used by commercial cattlemen whose production scenario includes the traditional marketing of calves at weaning and replacement retention from the herd.

Feeder Profit Index™ (FPI™): Envisioned as a completely terminal index, FPI assumes all calves are marketed as finished beef carcasses priced on a value-based grid. Thus, it shouldn't be used in production scenarios where replacements are kept from these matings. The new FPI formulation more precisely weights Economically Relevant Traits (ERTs) available for selection, including the key carcass traits of Carcass Weight (CW), Ribeye Area (REA), and Dry Matter Intake (DMI) that were not included in the original formulation. The new FPI also weights Fat Thickness (CFAT), post-weaning Average Daily Gain (ADG), and Calving Ease Direct (CED). Carcass value determined by carcass weight, quality, and yield grade influencing traits accounts for approximately 75% of the index as principal revenue drivers. Dry Matter Intake (DMI) captures differences in expected costs to the terminal carcass endpoint.

Total Profit Index (TPI): Combining replacement female retention from the herd with carcass endpoint for marketed surplus heifers and all steers, TPI balances both maternal and terminal selection criteria. Because of the challenges faced by commercial cattlemen by the antagonisms in selection for this production scenario, TPI includes the largest and most diverse set of EPDs in the model, including carcass traits as the primary revenue drivers with cow Mature Weight (MWT), Stayability (STAY) and Dry Matter Intake (DMI) as cost drivers.

