

Utilizing Economic Indexes in Sire Selection



Pedigree, scrotal measurement, EPDs, accuracies, actual weights, \$ values, DNA tests.... and you haven't even looked at the bull yet. There is no doubt that sire selection can be a daunting task, but economic indexes may be a tool to help simplify your selection process. Economic indexes are a collection of EPDs that are weighted depending on their economic importance in a given scenario. The goal of these index values is to simultaneously emphasize economically-relevant traits while using a multi-trait selection approach. Often these indexes are not fully understood and the name of the index doesn't always accurately portray the goal of the index. Read these descriptions carefully so you can accurately use these selection tools to improve the profitability of your cattle.

Angus:

Complete list at <https://www.angus.org/nce/valueindexes>

Maternal weaned calf value (\$M): A maternal index for producers who replace approximately 20% of their breeding females yearly. All other progeny are sold as feeder calves. \$M focuses on reducing costs in a cow-calf operation by placing selection pressure to decrease overall mature cow size while maintaining adequate weaning weights. Unlike most maternal indexes, less emphasis is placed on maternal milk, while heifer pregnancy and docility have an increased emphasis, along with foot traits. This index is most beneficial for producers that receive no economic benefit for traits affecting post-weaning performance. EPDs directly influencing the index include: calving ease direct and maternal, weaning weight, maternal milk, heifer pregnancy, docility, mature weight as well as foot angle and claw set.

Weaned Calf Value (\$W): A maternal index for cattlemen who plan to retain 20% of female progeny, with the rest of the calf crop to be sold as feeders post-weaning. \$W aims to improve progeny preweaning performance. Overtime, increased selection pressure on \$W will increase weaning and yearling weight traits. EPDs directly influencing \$W include: birth weight, weaning weight, maternal milk and mature cow size (MW).

Feedlot Value (\$F): An index for producers who retain ownership of cattle through the feedlot phase and sell fed cattle on a carcass weight basis with no consideration of premiums or discounts for quality and yield grade. \$F incorporates yearling weight and carcass weight along with feed efficiency traits, genomic information and trait interrelationships.

Grid Value (\$G) : An index based on carcass value that combines quality grade and yield grade attributes, and is calculated for animals with carcass EPDs. Quality grade premiums are specified for Prime, Certified Angus Beef, and Choice carcasses, as well as Select and Standard discounts. Yield grade premiums are incorporated for Yield Grade (YG) 1 and YG 2 (high-yielding carcasses), with discounts for YG 4 and YG 5 (low red meat yields)

Beef Value (\$B) A terminal index which assumes producers wean all male and female progeny as feeder calves, retain ownership of these animals through the feedlot phase and market these animals on a quality-based carcass grid. EPDs directly influencing \$B include: weaning and yearling weight, dry matter intake, as well as carcass weight, marbling, ribeye area and fat.

Combined value (\$C): An index that includes all 15 traits involved in \$M and \$B. The index is built for those with 20% of replacement heifers retained within their own herd. In addition, the herd then retains ownership on cull heifers and steers through the feedlot and market cattle on a quality-based carcass merit grid. EPDs directly influencing a combined index: calving ease direct and maternal, weaning weight, yearling weight, maternal milk, heifer pregnancy, docility, mature cow weight, foot angle, claw set, dry matter intake, marbling, carcass weight, ribeye area and fat thickness.

Hereford: Complete list at <https://hereford.org/genetics/breed-improvement/trait-definitions/>

Baldy Maternal Index (BMI\$): A maternal index that assumes a production system based on Hereford x Angus cross females. This index has significant weight on sustained cow fertility, which predicts fertility and longevity of females. There is a slightly positive weight on weaning weight, mature cow weight and milk. There is some negative emphasis on dry matter intake, but a positive weighting on carcass weight. Marbling and rib-eye area are also positively weighted to keep progeny successful for Certified Hereford Beef. This index is geared to identify Hereford bulls that will be profitable when used in a rotational cross with mature commercial Angus cows.

Certified Hereford Beef (CHB\$): A terminal index which assumes no replacement females are retained. All selection pressure is placed on carcass and feedlot traits. Hereford bulls are mated to mature commercial Angus cows where all progeny will be targeted for Certified Hereford Beef after the finishing phase. This index has significant weight on carcass weight and marbling to ensure profit on the rail. As well there is a positive weighting for average daily gain along with a negative weighting on dry matter intake to ensure efficient pounds of growth in the finishing phase. In addition, there is a positive weighting for ribeye area and a negative weighting for back fat to maintain desirable yield grades.

Simmental: Complete list found at <https://www.simmental.org/site/index.php/learning-library/genetic-selection-tools>

All-Purpose Index (API): An index that assumes Simmental bulls will be used on an Angus based cowherd. It assumes heifers will be retained as replacements. All other progeny will be sold on a grade and yield grid based system. This index is designed to assist producers in selecting cattle that will maximize revenue from fed cattle while maintaining maternal attributes in replacement heifers.

Terminal Index (TI): No smoke and mirrors here. This index assumes all progeny will be sold grade and yield. Based on Simmental sires with Angus cows. Used for selecting bulls to be used on cows only.

Other Breed Resources:

Shorthorn: <https://shorthorn.org/epds-101/>

\$Calving Ease (\$CEZ)

\$British Maternal (\$BMI)

\$Feedlot (\$F)

Charolais: www.charolaisusa.com

Terminal Sire Index (TSI)

Gelbvieh: www.gelbvieh.org

Total maternal (TM)

\$Cow

Efficiency profit index (EPI)

Feeder Profit Index (FPI)

In conclusion, sire selection sets the stage for your future in the cattle business. Progeny from the bulls you choose today will determine your reputation, your profitability, and your brand. Understanding economic index values can result in more profitable cattle for your operation as well as your customer base.

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