Understanding Hereford EPDs

The American Hereford Association (AHA) currently produces expected progeny differences (EPDs) for 17 traits and calculates three profit indexes. AHA's genetic evaluation makes use of a Marker Effects Model that allows the calculation of EPDs by incorporating the pedigree, phenotypic and genomic profile of an animal. Animals that have a genomic profile will be denoted with a GE-EPD logo.

The current suite of Hereford EPDs and profit indexes includes:

- **Carcass Weight (CW)**: EPD is a beneficial trait when considering the impact that pounds have on relative end product value. At the same constant endpoint, sires with higher values for carcass weight will add more pounds of hot carcass weight compared to sires with lower values for carcass weight. For example, if sire A has a CW EPD of 84 and sire B has a CW EPD 64, then you would expect the progeny of sire A, if harvested at the same constant endpoint, to have a 20-lb. advantage in terms of hot carcass weight.

- **Rib Fat (FAT)**: The FAT EPD reflects differences in adjusted 365-day, 12th-rib fat thickness based on carcass measurements of harvested cattle. Sires with low, or negative FAT EPDs, are expected to produce leaner progeny than sires with higher EPDs. Ultrasound measurements are also incorporated into this trait and have been shown to be highly correlated with the performance of slaughter progeny. All data is expressed on a carcass scale.

- **Marbling (MARB)**: MARB EPDs reflect differences in an adjusted 365-day marbling score (intramuscular fat, [IMF]) based on carcass measurements of harvested cattle. Breding bulls with higher MARB EPDs should produce slaughter progeny with a higher degree of IMF and therefore higher quality grades. Ultrasound measurements are also incorporated into this trait and have been shown to be highly correlated with the performance of slaughter progeny. All data is expressed on a carcass scale.

- **Baldy Maternal Index (BMI$)**: The BMI$ is a maternally focused index that is based on a production system that uses Brahman bulls. Progeny of these cows are directed towards a commodity beef market since Certified Hereford Beef® does not accept Brahman influenced cattle. This index has significant weight on Sustained Cow Fertility, which predicts fertility and longevity of females. There is a slighter positive weight on Weaning Weight, Mature Cow Weight and Milk which accounts for enough growth but ensures females do not increase inputs. There is some negative emphasis on Dry Matter Intake, but a positive weighting on Carcass Weight which is anticipated to provide profitability from finishing of non-replacement females and castrated males. Marbling and Rib-eye Area are also positively weighted to keep the harvested progeny successful for CHB. This index is geared to identify Hereford bulls that will be profitable when used in a rotational cross with mature commercial Angus cows.

- **Brahman Influence Index (BII$)**: The BII$ is a maternally focused index that is based on a production system that uses Brahman bulls. Progeny of these cows are directed towards a commodity beef market since Certified Hereford Beef® does not accept Brahman influenced cattle. This index has significant weight on Sustained Cow Fertility, which predicts fertility and longevity of females. There is a slighter positive weight on Weaning Weight, Mature Cow Weight and Milk which accounts for enough growth but ensures females do not increase inputs. There is some negative emphasis on Dry Matter Intake, but a positive weighting on Carcass Weight which is anticipated to provide profitability from finishing of non-replacement females and castrated males. Marbling and Rib-eye Area are also positively weighted to keep the harvested progeny successful for a variety of commodity based programs. This index targets producers that use Hereford bulls on Brahman influenced cows.

- **Certified Hereford Beef Index (CHB$)**: The CHB$ is a terminal sire index that is built on a production system where 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 gain of the cow in the finishing phase. In addition, there is a positive weighting for Rib-eye Area and a negative weighting for Back Fat to maintain desirable Yield Grades. This is the only index that has no emphasis on fertility. Remember that no replacement heifers are being retained.