EXPLANATION OF ESTIMATED BREEDING VALUES FOR CATTLE SELECTION

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Estimated Breeding Values (EBVs)

The EBV is the best estimate of an animal's genetic merit for that particular trait.

An animal's breeding value is its genetic merit, half of which will be passed on to its progeny. While we will never know the exact breeding value, for performance traits it is possible to make good estimates. These estimates are called Estimated Breeding Values (EBVs)

Accuracy

An accuracy value is presented with every EBV and gives an indication of the amount of information available and used in the calculation of that particular animal's EBV. **The higher the accuracy the more relevant the EBV as more information has been analysed from the animal's relatives**

Calving Ease

Calving Ease EBVs are based on calving difficulty scores, birth weights and gestation length information.

DIR: Direct calving ease indicates how this animal influences the birth of its progeny. Using a bull in the Top 1% for CE direct is predicted to result in approximately 15% fewer assisted calvings in 2 year old heifers compared with using a bull in the Bottom 1%. This range is predicted to be smaller in cows. **Remember that the dam's genetics and management are significant factors influencing calving ease in any mating.**
Negative EBVs mean more difficult calving whilst positive EBVs mean easier calving.

DTRS: Daughter's calving ease indicates how well the animal produces daughters that have easier calving. This is an important trait if you are breeding your own replacements. **Again, high negatives are bad whilst high positives are good.**

Birth

GL: Gestation Length EBV (days) is an estimate of the time from conception to the birth of the calf. **Lower (negative) GL EBVs indicate shorter gestation lengths which generally relate to easier calving and increased growth after birth.**

BWT: Birth Weight EBV (kg) is based on the measured birth weight of animals, adjusted for dam age. **The lower the value the lighter the calf at birth and the less is the likelihood of a difficult birth. This is particularly important when selecting sires for use on heifers.**

Fertility

SS: Scrotal Size EBV (cm) is an indicator of male fertility with regards to semen quality and quantity. **Higher (positive) EBVs indicate higher fertility.** There is also a small negative correlation with age of puberty in female progeny i.e. the daughters of bulls with larger testicles may come into season at an earlier age.

Growth

MILK: 200-Day Milk EBV (kg) is an estimate of an animal's milking ability. For sires, this EBV indicates the effect of the daughter's milking ability, inherited from the sire, on the 200-day weights of her calves. For dams, it indicates her own milking ability. **Bulls with a high milk EBV have more milky daughters.**

200: 200-Day Growth EBV (kg) is calculated from the weight of animals taken between 80 and 300 days of age. Values are adjusted to 200 days and for dam age. This EBV is the best single estimate of an animal's genetic merit for growth to early ages. **The higher the 200 day EBV then the higher the suckled calf or weaning weight.**

400: 400-Day Weight EBV (kg) is calculated from the weight of progeny taken between 301 and 500 days of age, adjusted to 400 days and for dam age. This EBV is the best single estimate of an animal's genetic merit for yearling weight**. Higher 400day EBVs indicate earlier maturing progeny with a greater weight at an earlier age.**

600: 600-Day Weight EBV (kg) is calculated from the weight of progeny adjusted to 600 days and for dam age. **This EBV is the best single estimate of an animal's genetic merit for growth beyond yearling age.**

MWT: Mature Cow Weight EBV (kg) is an estimate of the genetic difference in cow weight at 5 years of age. **Smaller or more moderate EBVs give cows with lower maintenance costs.**

Carcase

CWT: Carcase Weight EBV (kg) estimates the genetic difference in carcase weight at a standard age of 650 days. **An important trait for finished cattle production.**

EMA: Eye Muscle Area EBV (cm^2) is calculated from measurements from live animal ultrasound scans. This EBV estimates genetic differences in eye muscle area at the $12/13^{th}$ rib of a 300kg dressed carcase. **More positive EBVs for Eye Muscle Area indicate better muscling.**

FAT: Rib Fat EBV (mm) estimates the differences in fat depth at the rib in a 300kg dressed carcase. **More positive EBVs indicate more subcutaneous fat and earlier maturity but may incur penalties at grading.**

RBY%: Retail Beef Yield Percent EBV (%) represents total (boned out) meat yield as a percentage of a 300kg dressed carcase. **This is an important trait in all finished cattle.**

Terminal Sire Index

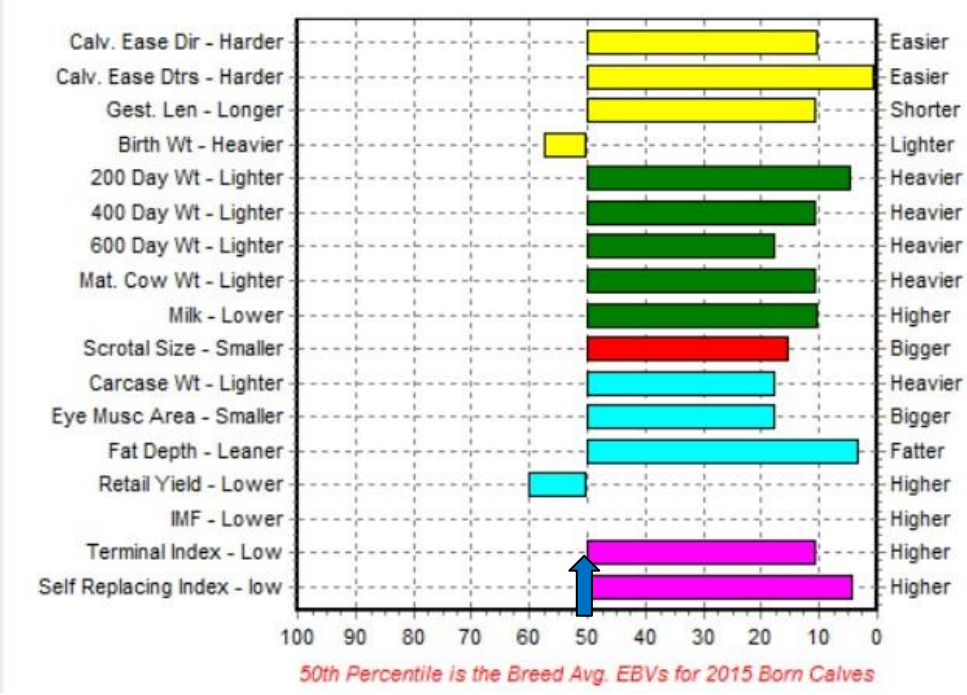
This index ranks bulls by their genetic potential for the production of prime steers and heifers for beef production. Growth and carcase EBVs are the main drivers used in compiling this Index. Considerable emphasis is also placed on calving ease direct. **The higher the Terminal Index then the progeny matures at an earlier age and at a heavier weight.**

Self Replacing Index

An Index which has emphasis on calving ease and maternal traits for use in both commercial and pedigree herds where you are balancing the requirements of selecting replacement females while also producing animals for slaughter at around 16 months of age. **A high index indicates that the progeny are suitable for both tasks.**

THE GRAPH ABOVE THE BULL AT THE SALE

The bull's EBVs for each trait are displayed on a graph**. Breeders should select a bull according to the traits that are most important to their breeding programme.** For example, if you want replacement heifers then Calving Ease Dtrs and Milk are important whereas if you are producing suckled calves then Calving Ease Direct, Birth Weight and 400 Day Weight and EMA will be important and so on.



BREED AVERAGE

The vertical midpoint on the graph is the breed average for each recorded trait. Coloured bars that appear on the right of the midpoint are advantageous whilst those on the left have to be treated with caution.

Remember to take into account the ACCURACY from the figures in the catalogue

SEARCH AND SORT SALE CATALOGUES BY EBVs ONLINE
ON THE SOCIETY'S WEB SITE

Breeds using Breeedplan in the UK

Aberdeen-Angus Cattle Society www.aberdeen-angus.co.uk
Beef Shorthorn Cattle Society www.beefshorthorn.org British
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British Charolais Cattle Society www.charolais.co.uk
British Simmental Cattle Society www.britishsimmental.co.uk
Hereford Cattle Society www.herefordcatttle.org Murray
Grey Cattle Society www.murray-grey.co.uk Devon Cattle
Breeders Society www.redrubydevon.co.uk Salers Cattle
Society www.salers-cattle-society.co.uk
South Devon Cattle Society www.sdhbs.org.uk
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