Understanding Eye Muscle Area EBVs

Calving Ease Dir (%)	Calving Ease Dtrs	Gestation Length	Birth Wt.	200 Day Wt.	400 Day Wt.	600 Day Wt.	Mat. Cow Wt. (kg)	Milk (kg)	Scrotal Size (cm)	Days to Calving	Carcase Wt. (kg)	Eye Muscle Area (sq.cm)	Rib Fat (mm)	Rump Fat (mm)	Retail Beef Yield (%)	IMF (%)	NFI-P (kg/day)	NFI-F (kg/day)	Docility	Angus Breeding Index	Domestic Index	Heavy Grain Index	Heavy Grass Index
+4.							+67	+9		-3.1	+42	+4.1	+1.7	+2.0	-0.7	+1.3	+0.35	+1.05	+25	+$ 77	+$ 88	+$ 65	+$ 83
99%									99%	98%	98%	98%	98%	98%	98%	98%	96%	96%	90%				
+3.							98%	+21 99%	+1.7 98%	-6.7 96%	+21 98%	+4.9 97%	+1.3 98%	+1.2 98%	+0.2 97%	+2.7 97%	+0.03 93%	-0.13 93%	+13 95%	+$ 127	+$ 113	+$ 139	+$ 119
+0.							+60 99%	+18 99%	+2.8 99%	-5.1 97%	+26 98%	+3.5 98%	+1.3 98%	+2.1 98%	-1.1 98%	+3.6 98%	+0.81 95%	+1.3					+$ 97
+1.							+76 99%	+30 99%	+3.4 99%	-5.4 92%	+31 98%	+9.4 97%	+0.4 97%	98%	98%	97%	92%						+$ 126
+5.9 98%	+6.2 93%	-9.9 99%	+3.2 99%	+51 99%	+93 99%	+123 99%	+142 99%	+10 98%	+2.4 99%	-12.0 92%	+74 98%	+5.0 97%	-0.2 97%	+0.7 98%	-0.5 96%	+3.2 97%	+0.24 91%	+0.4 91%					+$ 144
3			+4.7	+5			+127			7	+6	+4	4	+1.0									

EMA EBVs are estimates of genetic differences between animals in eye muscle area at the 12/13th rib site in a 400 kg carcase.

Higher EMA EBVs indicate the animal is expected to produce progeny with larger eye muscle area, relative to carcase weight.

Eye Muscle Area (EMA) EBVs are estimates of genetic differences between animals in eye muscle area at the 12/13th rib site in a 400 kg carcase.

EMA EBVs are calculated by measuring the area of the cross section of the longissimus dorsi muscle between the 12 and 13th rib via either live animal ultrasound scanning or direct measurement of carcases in the abattoir, and/or genomic information where available. EMA EBVs are expressed in square centimetre units.

Higher EMA EBVs indicate the animal is expected to produce progeny with larger eye muscle area, relative to carcase weight.

Using EMA EBVs to Compare the Genetics of Two Animals

EMA EBVs can be used to estimate the expected difference in eye muscle area of progeny from two animals, with the expected difference equating to half the difference in the EMA EBV of the animals, all other things being equal (e.g. they are joined to the same animal/s).

For example, a bull with an EMA EBV of +6.0 would be expected to produce calves with on average, 2 cm^2 larger eye muscle areas in a 400 kg carcase than a bull with an EMA EBV of +2.0 (i.e. 4 cm^2 difference between the sire's EBVs, then halved as the sire only contributes half the genetics).

Using EMA EBVs to Benchmark an Animal's Genetics with the Breed

Similarly, EMA EBVs can be used to benchmark an animal's genetics for eye muscle area relative to other Angus animals in Australia and New Zealand.

To benchmark an animal's genetics relative to other Angus animals, an animal's EMA EBV can be compared to:

- the breed average EBV
- the percentile table

The current breed average and percentile table for EMA can be found on the Angus Australia website, or they are normally listed in most BREEDPLAN reports, sale and semen catalogues.

Considering Accuracy

An accuracy value is published in association with each EMA EBV, which is usually displayed as a percentage value immediately below the EBV.

The accuracy value provides an indication of the reliability of the EBV in estimating the animal's genetics for eye muscle (or true breeding value), and is an indication of the amount of information that has been used in the calculation of the EBV.

EMA EBVs with accuracy values below 50% should be considered as preliminary or of low accuracy, 50-74% as of medium accuracy, 75-90% of medium to high accuracy, and 90% or greater as high accuracy.

For further information, please contact staff at:

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