

Understanding Structural Soundness EBVs



TIP SHEET

Since cattle were first domesticated, it has been recognised that animals should conform to certain structural requirements to ensure high levels of production and adaptability to the environment.

When structural integrity is not maintained, substantial financial loss can occur. These losses could be due to such things as complete bull breakdown, bulls not being able to cover the allocated cows resulting in lower conception rates, or steers being unable to finish a long feeding program.

Importantly, structural soundness is heritable and can be improved by selection.

INTERPRETING STRUCTURAL SOUNDNESS EBVS

Structural Soundness EBVs are provided for five important structural traits; these are Front Feet Angle (FA), Front Feet Claw Set (FC), Rear Feet Angle (RA), Rear Leg Hind View (RH) and Rear Leg Side View (RS).

Structural Soundness EBVs are reported as an estimate of genetic differences between animals in the percentage of progeny that will have a desirable score for a particular structural trait.

Higher Structural Soundness EBVs are more favourable. That is, higher Structural Soundness EBVs indicate a greater percentage of progeny with a desirable score for that particular trait. For example, a bull with a Front Feet Angle EBV of +25.3 would be expected to on average produce 41% more progeny with desirable front feet angle than a bull with a Front Feet Angle EBV of -56.1 [i.e. $25.3 - (-56.1) \times \frac{1}{2}$].

Animals with very low (i.e. negative) EBVs for each trait are identified with an additional flag to indicate the nature of their structural fault. Flags are applied as per the table.

Structural Soundness EBV	Flag	Description
Front Feet Angle & Rear Feet Angle EBVs	ST	Increased probability of steep feet angle
	SH	Increased probability of shallow feet angle
Front Feet Claw Set EBV	OD	Increased probability of open divergent claws
	SC	Increased probability of scissor claws
Rear Leg Hind View EBV	BL	Increased probability of bow legged rear legs
	CH	Increased probability of cow hocked rear legs
Rear Leg Side View EBV	SR	Increased probability of straight rear legs
	SI	Increased probability of sickle hocked rear legs

While Structural Soundness EBVs provide an indication of likely differences in the structural soundness of the progeny of animals, the structural scores that have been recorded for the animal itself should also be used to assess the current feet and leg soundness of that animal. For example, a young bull may have Structural Soundness EBVs that indicate an acceptable percentage of progeny will be produced with desirable structure, but his own score may indicate that he is susceptible to breakdown if joined. Therefore, both the Structural Soundness EBVs and the actual structural scores should be considered when selecting animals for use within a breeding program.

For more information regarding Structural Soundness EBVs, please contact staff at your BREEDPLAN processing centre.