



technical brief

“Using DNA Marker Information when buying bulls”

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When buying bulls, the primary genetic selection tool should be Breedplan EBVs. Any phenotypic benefit derived from the marker will be reflected in the EBV.

Marker Assisted EBVs incorporating DNA marker information will result in EBVs of higher accuracy.

Marker ratings, e.g. star ratings, may or may not be useful information, depending upon;

A. The relative value of a target trait to your production and marketing goals. For example, marbling has a high relative value for the Japanese B3 market, but no relative value for the EU market. Similarly, the Tenderness genes are of importance to the Bos Indicus breeds but less so to British breeds.

This information allows you to put some \$\$ significance to increased trait performance.

B. The effect that presence or absence of the marker will have on the phenotypic performance of your stock, under your production environment. For example, what increase in performance can you expect for each copy of a favourable marker?
A quick A x B calculation brings the cost-benefit into focus.

C. The frequency of the marker in the breed or population you're working with. This indicates your chance of improving trait performance user marker selection. For example, if the frequency is extremely high or extremely low, the majority of animals will have similar marker profiles and selection opportunity is limited.

Bull buyers need to know the answers to the above questions before they can reasonably justify paying more for bulls on the basis of marker ratings.

Check-list when considering any investment in markers:

- (i) will the presence of the marker improve your profitability?
- (ii) how will it impact the traits you want to change; this depends on gene frequency and the size of any effect ?
- (iii) what is the opportunity cost of using/not using animals with favourable markers?
- (iv) can a similar rate of genetic progress be made using less costly technologies

Remember, DNA tests enhance EBVs, they do not replace them.