



MURRAY *Technical* GREY

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INFORMATION FOR MURRAY GREY SOCIETY MEMBERS

Understanding \$Index values

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Murray Grey GROUP BREEDPLAN provides a comprehensive multi-trait genetic description of animals for a wide range of fertility, maternal, growth and carcass traits. The selection of a sire on the basis of outstanding performance for one or a few traits can be a mistake if the sire is not balanced in other traits of importance to your production situation and market targets.

The careful use of EBVs can assist in selecting the best animals to meet your particular needs. The most important step in planning a balanced breeding program is to establish a clear set of breeding objectives for your herd. This involves analysing the current performance levels and comparing this with anticipated requirements of your future customers and with your herd production targets. Once you have completed this exercise you will be well situated to specify the characteristics required in replacement breeding stock to meet your breeding goals.

The technology and information is now available to provide \$Index values on animals. The Murray Grey Beef Cattle Society has been working with the Animal Genetics and Breeding Unit (AGBU), developers of BreedObject software, to describe relevant commercial production systems and markets for users of Murray Greys. \$Index values are calculated using BreedObject.

BreedObject draws together the BREEDPLAN estimated breeding value (EBV) figures on animals into a single EBV, the \$Index EBV, which describes how well animals suit a particular purpose. BreedObject addresses the genetic potential of progeny to perform in the commercial herd.

Index 1. Long-Fed Export

Commercial herds targeting the production of steers for the long-fed export markets such as the Japanese B3 market. It was assumed that 80% of steers in the herd achieve an AUS-MEAT marbling score of 2 or higher when slaughtered at 25 months of age after 220 days on feed (average 650 kg liveweight, 20mm P8 fat depth).

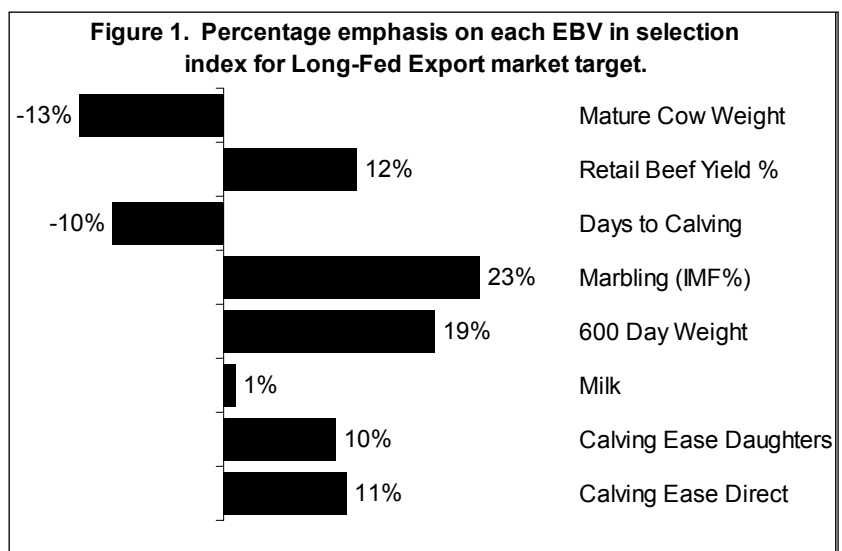
The emphasis on each EBV for this example is shown in Figure 1.

The \$Index describes how each animal is expected to benefit commercial herd profitability when the production purpose is as described. The \$Index is an EBV for profit for performance in the commercial herd. Ranking seedstock on their \$Index sorts them for their progeny's expected profitability for the production purpose chosen.

BreedObject uses estimates of the genetic relationships between EBVs and the various traits in the breeding objective (i.e. those traits that affect profit in the commercial herd) for each example to determine a set of index weighting factors to apply to each EBV. The individual EBVs are multiplied by these weighting factors and summed to produce an overall \$Index value for each animal. The weighting factors take account of the relative economic importance of the traits in the breeding objective and the capacity to change them through selection on EBVs.

In each example it was assumed that the beef enterprise is a self-replacing commercial herd in temperate Australia. It was assumed that feed is a limiting resource for a large part of the year and any increase in herd feed requirements has a cost. An average calving rate of 85% was assumed. There is a moderate concern for the level of calving difficulty.

Market prices and production costs were typical values for a herd operating in 2000. In addition to benefiting from improved herd productivity, it was assumed that the enterprise benefits from improved carcass performance in the same way it would if there were retained ownership to slaughter.

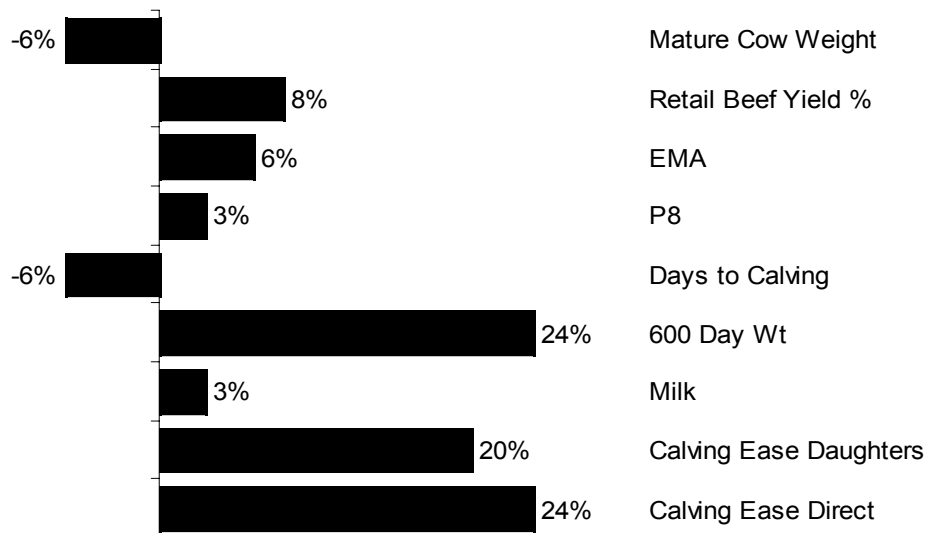


Index 2. Domestic Supermarket

Commercial herds targeting grass-finished production for the domestic supermarket trade with no marbling requirement. It was assumed that 80% of the steers from the herd achieve market specifications at the target slaughter age of 17 months (average 400 kg liveweight, 8mm P8 fat depth).

The emphasis on each EBV for this example is shown in Figure 2.

Figure 2. Percentage emphasis on each EBV in selection index for Domestic Supermarket target .



Develop your own “customised” selection index

The above Indexes are Indexes derived for average situations. You can use BreedObject to establish customised selection indexes for particular situations. A questionnaire needs to be completed to provide information on production costs, performance levels and market targets. This

information is used to derive the relative economic values of different traits, and the index weighting factors to be applied to the EBVs for potential candidate animals for selection. The Murray Grey Society has staff trained in the use of BreedObject software. See <http://www.breedobject.com> for further details.

Murray Grey Internet Animal / Member Inquiry System

“Electronic Herdbook”

For animal selection and ranking on any EBV, \$Index, region, name, identifier and other breed specifics such as colour.

Look for us at
www.murraygrey.com.au

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Bryan Johnston's role as General Manager of the Murray Grey Beef Cattle Society Limited, involves the supervision and initiation of Murray Grey breed research, development and marketing.

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