New Zealand Murray Grey Selection Index: Technical Specifications

The New Zealand Murray Grey Beef Cattle Society Inc. currently reports one selection index. This is the Dairy Index.

The selection index described above has been derived using BreedObject software. The BreedObject selection index development process involves four major steps. These steps are:

1. A detailed description of the input costs and value generation of the commercial herd and target production system.
2. Once the target production system is described, the BreedObject software evaluates how each trait influences profitability and the economic value of improving each trait.
3. The BreedObject software then assesses what emphasis needs to be applied to each Estimated Breeding Value (EBV) trait to achieve the maximum profitability in the production system and for the market end point for which that index was designed. This step includes evaluating the selection response expected from direct selection on the individual EBVs and the correlated responses expected from selection on related EBVs.
4. The importance placed on each EBV results in the selection index value that is calculated for each animal.

Each selection index describes a different production system/market scenario and relates to a typical commercial herd using New Zealand Murray Grey bulls. As is the case for EBVs, each selection index can be used to rank and compare animals on their genetic merit. Producers are advised to use the selection index that most closely aligns to their production system. See the Using the New Zealand Murray Grey Selection Index tip sheet, available in the Help Centre on the BREEDPLAN website, for further information on the identification and utilisation of the most applicable selection index for your herd.

All selection indexes are reported in units of net profitability per cow mated ($) for the production system/market scenario they describe. Selection indexes account for both sides of the profit equation (costs as well as income), and also reflect the relative short and long term profit associated with possible selection decisions. For example, short term profit can be generated by a bull through the sale of his progeny, and the longer term profit generated by his daughters in a self-replacing cow herd.

The Dairy Index targets the following specifications:

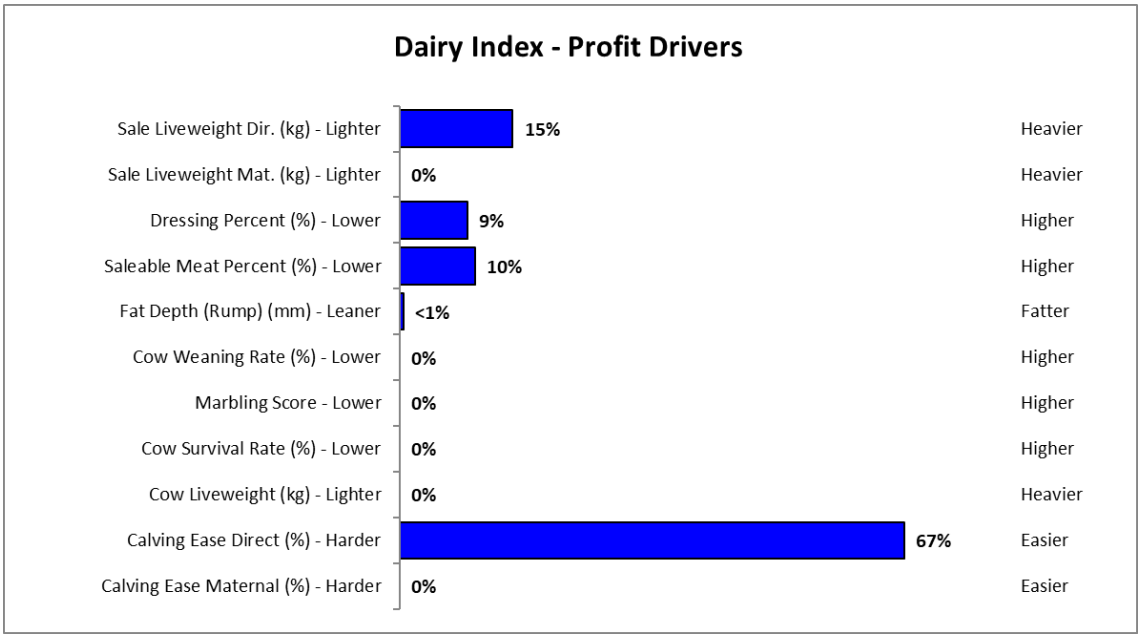
Dairy Index - Estimates the genetic differences between animals in net profitability per cow joined for an example commercial dairy herd targeting the production of dairy beef progeny from dairy cows and heifers where all progeny are slaughtered. Steers are assumed marketed at 450 kg live weight (240 kg carcase weight and 6 mm fat depth) at 16 months of age. While calving ease is by far the most important profit driver in the Index, growth and to a lesser extent meat yield also contribute.

The Dairy Index relates to typical commercial dairy herd producing dairy beef through the use of Murray Grey bulls. **It is not suitable for use when selecting bulls for a self-replacing purebred Murray Grey breeding program.**

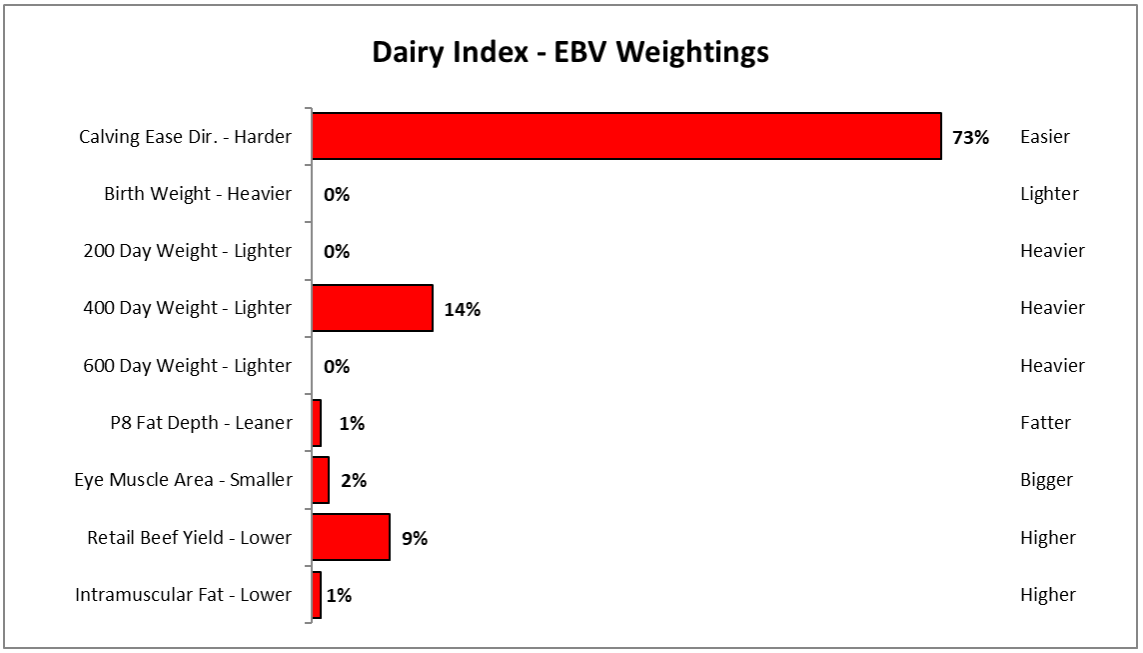
If you have any further queries regarding the New Zealand Murray Grey Selection Index, please do not hesitate to contact staff at the New Zealand Murray Grey Beef Cattle Society.

Dairy Index

The following bar graph shows the **key economic traits**, as determined by the BreedObject software, that are important in this selection index. The different trait emphases reflect the **underlying profit drivers in a commercial operation** targeting the described production system/market.



The bar graph below illustrates the magnitude and direction of emphasis that has been placed on each **BREEDPLAN EBV** within this selection index. These weightings represent the **most profitable combination of EBVs**, as determined by the BreedObject software, for the described production system/market.



While the graphs on the previous page show the emphasis that has been placed on the production traits and each EBV within the Dairy Index, they do not reflect the expected change that will occur to each individual EBV if producers select animals using this selection index. The selection response will also be influenced by factors such as the genetic relationship between traits and the animals that are available for selection.

The following bar graph provides an indication of the **relative change** that would be expected in each individual BREEDPLAN EBV if producers select animals using the Dairy Index. The graph reflects the relative change if the New Zealand Murray Grey Published Sires in 2011 were ranked on this selection index and the Top 10% **selected for use within a breeding program**. The response to selection may differ if a different group of animals were available for selection.