

Simmental BREEDPLAN Selection Indexes: Technical Specifications



Simmental BREEDPLAN currently reports four different selection indexes. These are the:

- Domestic Maternal Index (DM)
- Export Maternal Index (EM)
- Northern Terminal Index (NT)
- Vealer Terminal Index (VT)

All of the selection indexes described above have 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 Simmental 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 Simmental BREEDPLAN Selection Indexes](#) 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.

Each of the selection indexes are focused on efficient beef production while also targeting the following specifications:

Domestic Maternal Index (DM) - Estimates the genetic differences between animals in net profitability per cow joined for a self-replacing commercial herd that is targeting the Supermarket trade. Maternal traits are of importance as some heifers are retained as replacements. Steers are assumed marketed at 430 kg live weight (240 kg carcass weight and 6 mm fat depth) at 14 months of age. Selected heifers are retained for breeding and the balance marketed at 14 months weighing 425kg (235 kg carcass weight and 8 mm fat depth). Carcass quality is still of importance to allow the option of finishing at later ages.

Export Maternal Index (EM) - Estimates the genetic differences between animals in net profitability per cow joined for a self-replacing commercial herd that is targeting the export market. Maternal traits are of importance as some heifers are retained as replacements. Steers are assumed marketed at 700 kg live weight (390 kg carcass weight and 14 mm fat depth) at 22 months of age. Selected heifers are retained for breeding and the balance marketed at 22 months weighing 610kg (340 kg carcass weight and 16 mm fat depth). Carcass quality remains a priority.

Northern Terminal Index (NT) - Estimates the genetic differences between animals in net profitability per cow joined in a typical commercial herd in Northern Australia that is targeting the export trade. Bulls are to be used over a tropically adapted cow base. All progeny target the Supermarket trade at an average of 540 kg live weight (300 kg carcass weight and 15 mm fat depth) at 24 months of age. Carcass quality remains a priority.

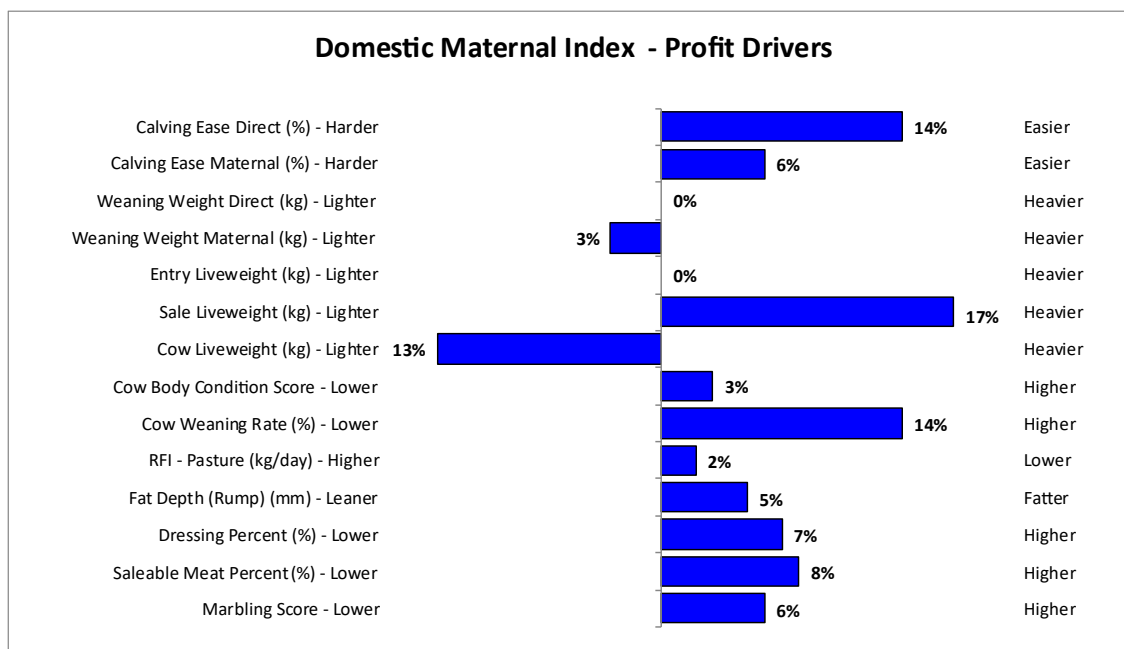
Vealer Terminal Index (VT) - Estimates the genetic differences between animals in net profitability per cow joined for a commercial herd in Southern Australia that targets the production of vealers. Bulls are to be used over a temperate (*Bos taurus*) cow base. All vealer are weaned and marketed at 8 months of age targeting 335 kg live weight (185 kg carcass weight and 7 mm fat depth). Carcass quality is still of importance to allow the option of finishing at later ages.

More detailed information regarding each selection index is provided on the following pages.

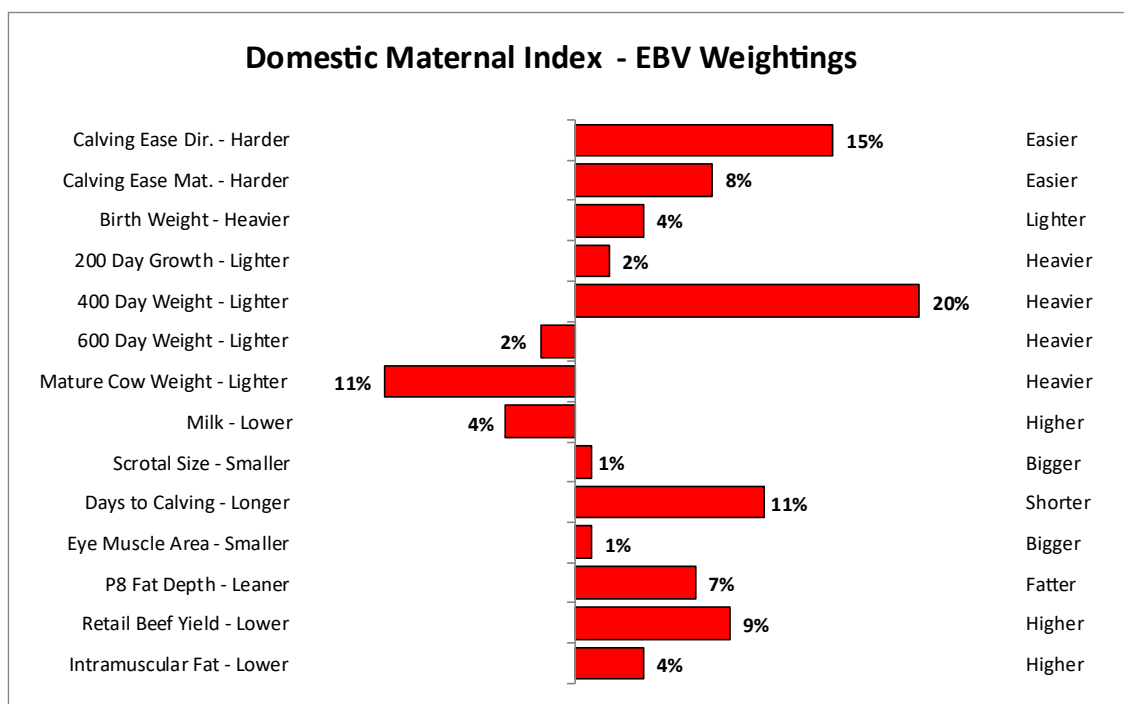
If you have any further queries regarding the Simmental BREEDPLAN Selection Indexes, please do not hesitate to contact staff at your BREEDPLAN processing centre.

Domestic Maternal 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.

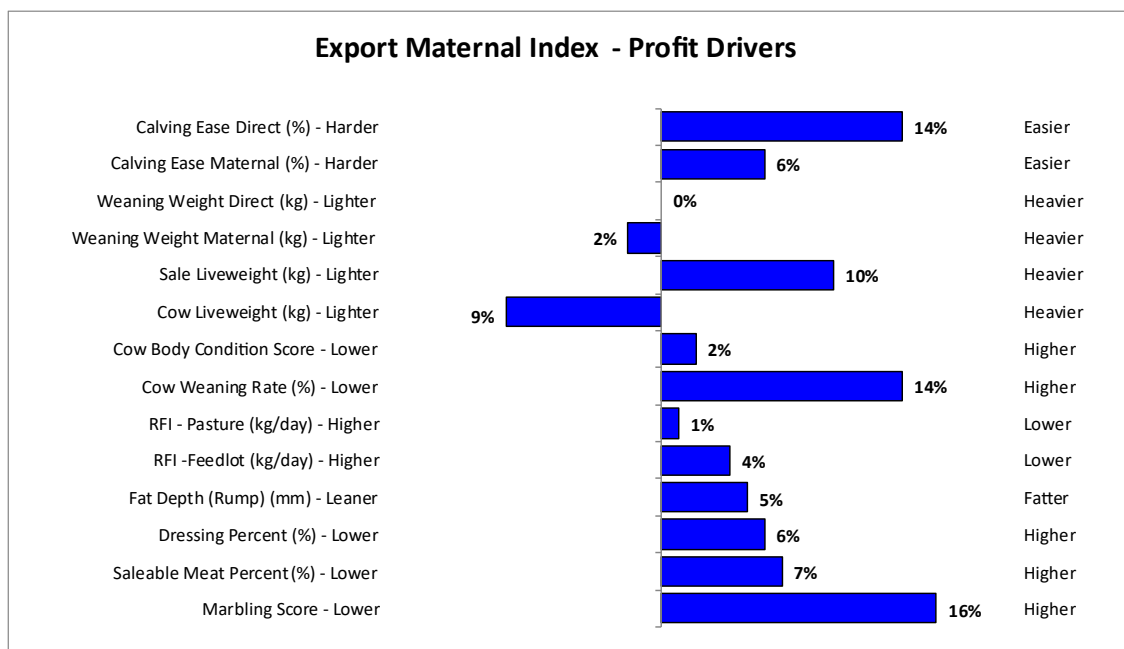


The bar graph below illustrates the magnitude and direction of emphasis that has been placed on each **BREEDPLAN EBV** within this selection index. These weightings represent the **most profitable combination of EBVs**, as determined by the BreedObject software, for the described production system/market.

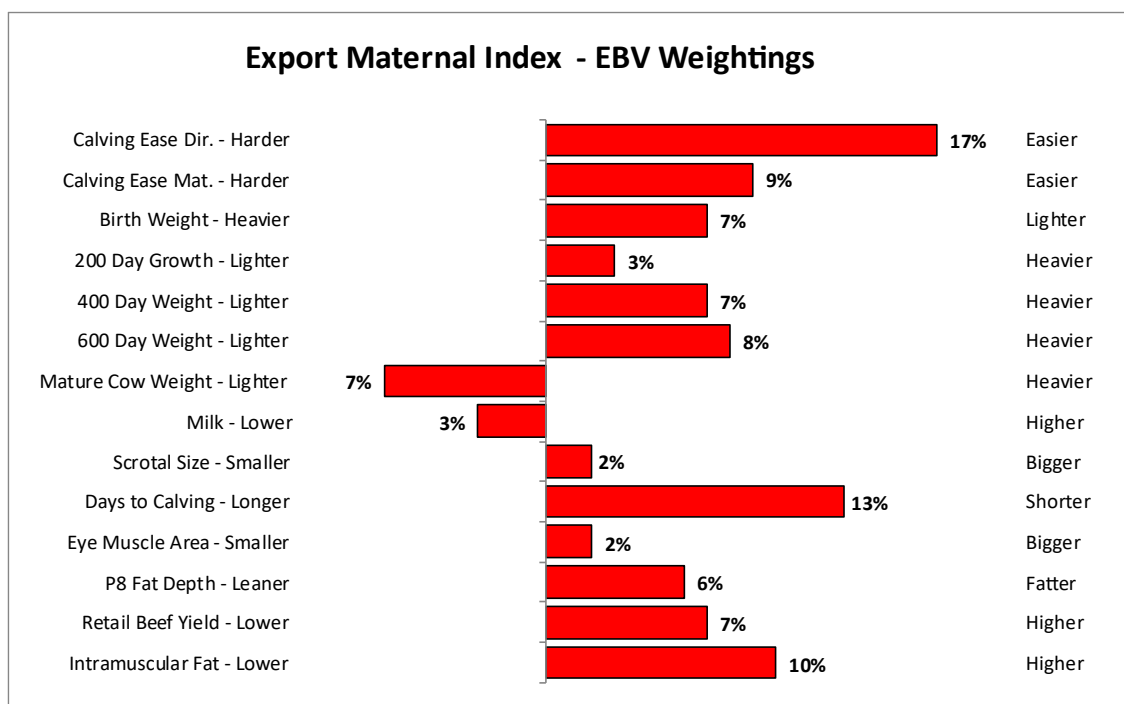


Export Maternal Index

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.

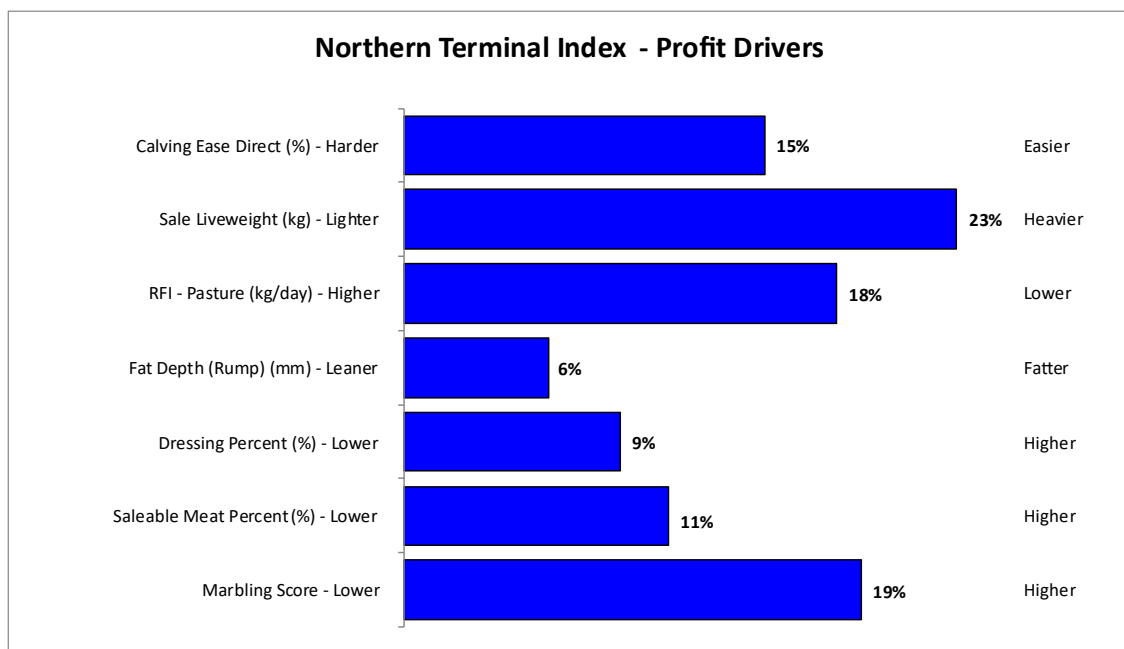


The bar graph below illustrates the magnitude and direction of emphasis that has been placed on each **BREEDPLAN EBV** within this selection index. These weightings represent the **most profitable combination of EBVs**, as determined by the BreedObject software, for the described production system/market.

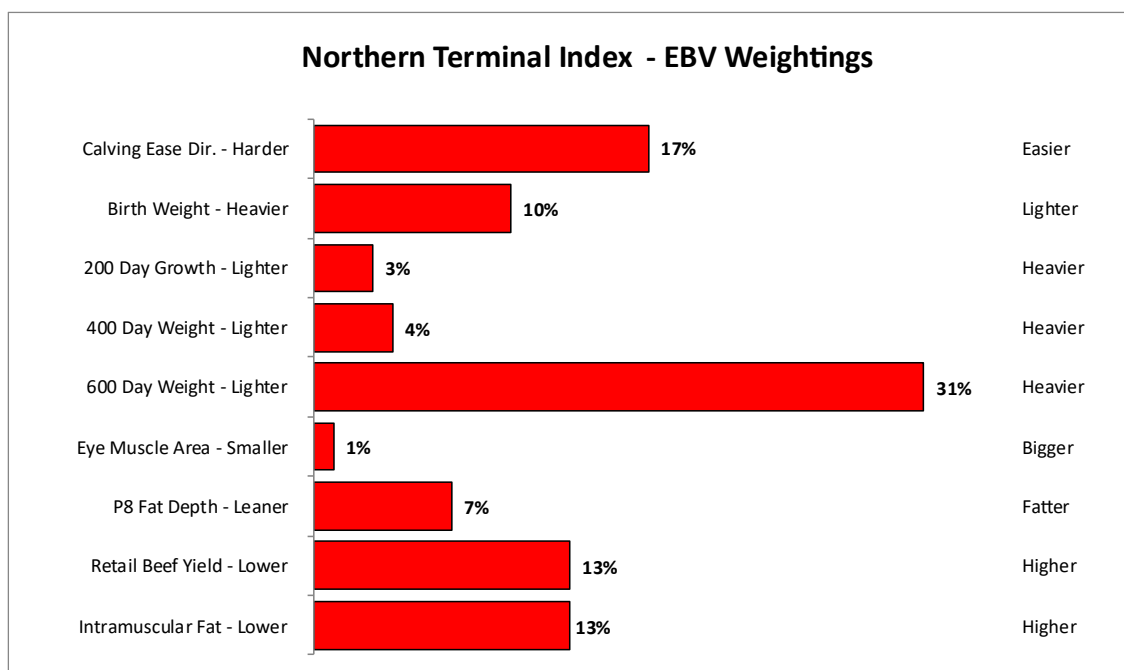


Northern Terminal Index

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.

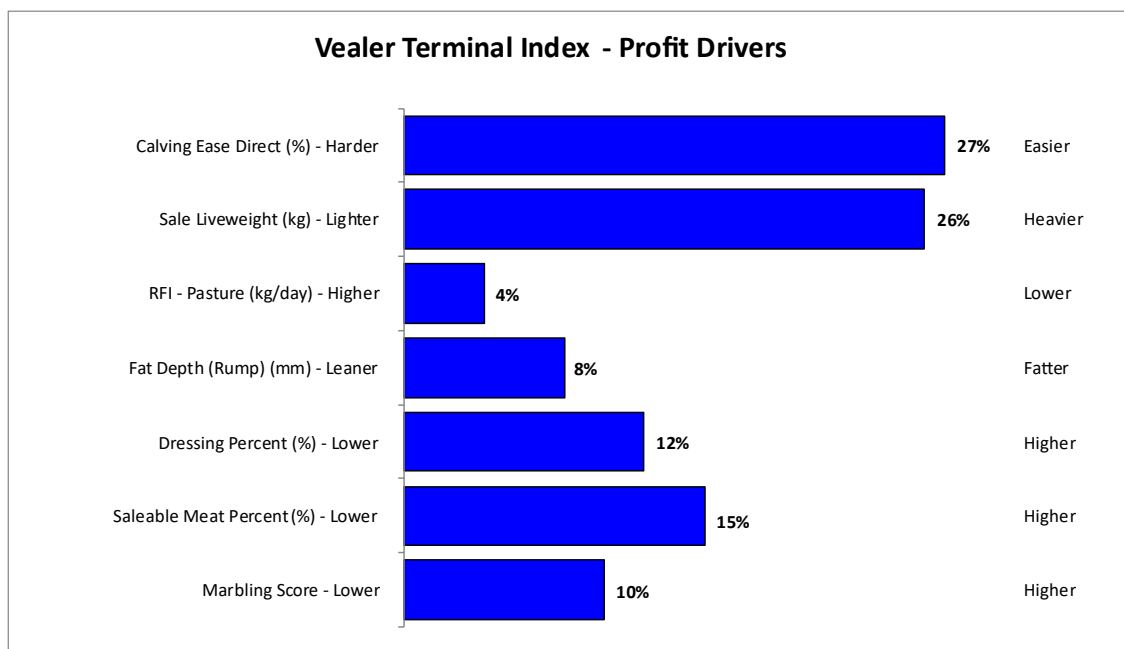


The bar graph below illustrates the magnitude and direction of emphasis that has been placed on each **BREEDPLAN EBV** within this selection index. These weightings represent the **most profitable combination of EBVs**, as determined by the BreedObject software, for the described production system/market.



Vealer Terminal 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.

