

# Interpreting New Zealand Hereford Selection Indexes



New Zealand Herefords currently report three different selection indexes. These are the:

- Hereford Prime Index
- Beef Heifer Index
- Dairy Beef Index

Each selection index describes a different production/market scenario and relates to a typical commercial herd using Hereford bulls. Producers are advised to use the selection index that most closely aligns to their production system. Each selection indexes is focused on efficient beef production, including maternal traits where appropriate. In addition, each selection index targets the following specifications.

**Hereford Prime Index** - Estimates the genetic differences between animals in net profitability per mixed age cow joined for a typical self-replacing commercial herd where Hereford bulls are joined to either Hereford or other British breed females and targeting the production of grass finished steers for the Hereford Prime program. Selected heifers are retained for breeding and so maternal traits are of importance. Steers target 550 kg live weight (300 kg carcass weight & 7 mm P8 fat) at 20 months of age, and heifers 475 kg (260 kg carcass weight & 8 mm fat depth), at 22 months of age.

**Beef Heifer Index** - Estimates the genetic differences between animals in net profitability per yearling heifer joined for a typical self-replacing commercial herd where Hereford bulls are joined to either Hereford or other British breed heifers. Selected heifers are retained for breeding and so maternal traits are of importance. Steers target 510 kg live weight (280 kg HSCW and 7 mm P8 fat depth) and heifers 450 kg (250 kg HSCW and 8 mm P8 fat depth) at 20 months of age.

**Dairy Beef Index** - Estimates the genetic differences between animals in net profitability per mixed age dairy cow joined with all progeny destined for slaughter. Steers and heifer progeny target 550 kg live weight (300 kg carcass weight and 6 mm fat depth) at 24 months of age and at 475 kg live weight (260 kg carcass weight and 7 mm fat depth) at 22 months, respectively.

All selection indexes are reported as an EBV, in units of net profit per cow mated (\$) for a given production/market scenario. They reflect both the short term profit generated by a sire through the sale of his progeny, and the longer term profit generated by his daughters in a self-replacing cow herd (where applicable).

All selection index values have been derived using BreedObject technology. More detailed information regarding each selection index is provided on the following pages.

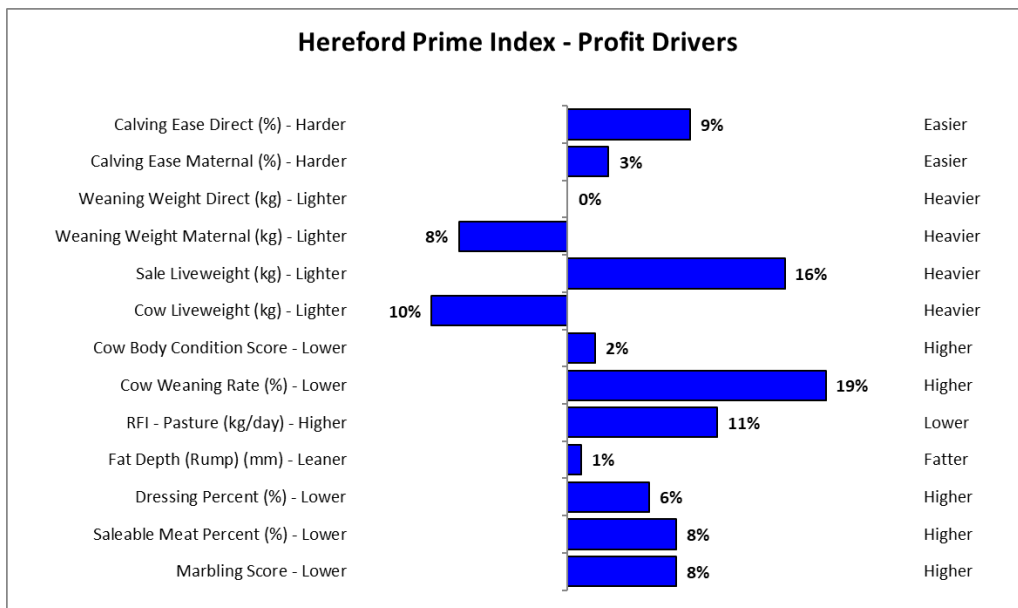
**If you have any further queries regarding the New Zealand Hereford Selection Indexes, please do not hesitate to contact staff at the New Zealand Herefords or your BREEDPLAN processing centre.**



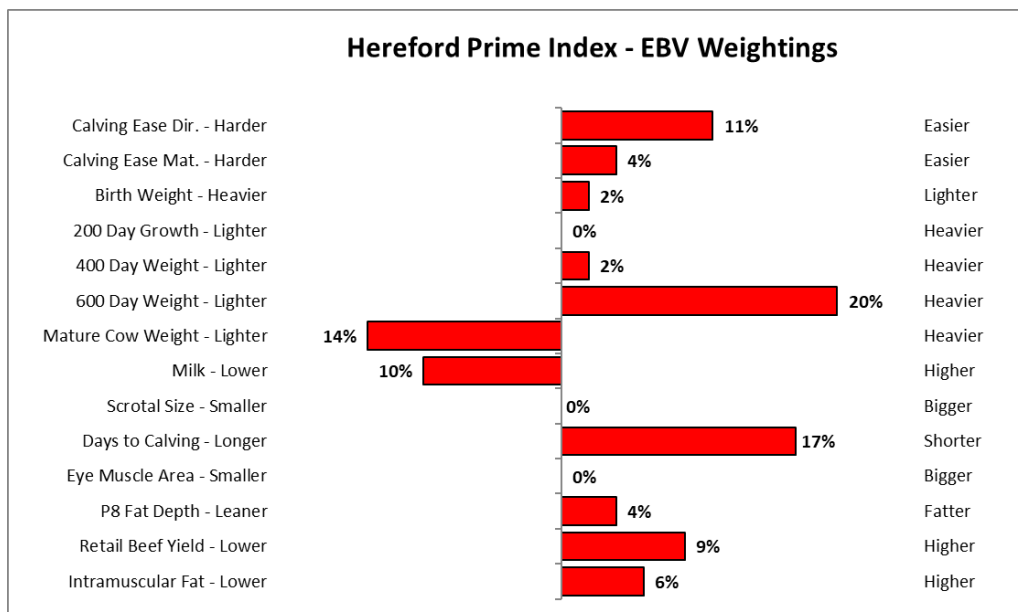
# Hereford Prime Index

The Hereford Prime Index estimates the genetic differences between animals in net profitability per mixed age cow joined for a typical self-replacing commercial herd where Hereford bulls are joined to either Hereford or other British breed females and targeting the production of grass finished steers for the Hereford Prime program. Selected heifers are retained for breeding and so maternal traits are of importance. Steers target 550 kg live weight (300 kg carcass weight & 7 mm P8 fat) at 20 months of age, and heifers 475 kg (260 kg carcass weight & 8 mm fat depth), at 22 months of age.

The following bar graph shows the key economic traits that are important in this selection index. The different trait emphases reflect the underlying profit drivers in a commercial operation targeting this production system and market.

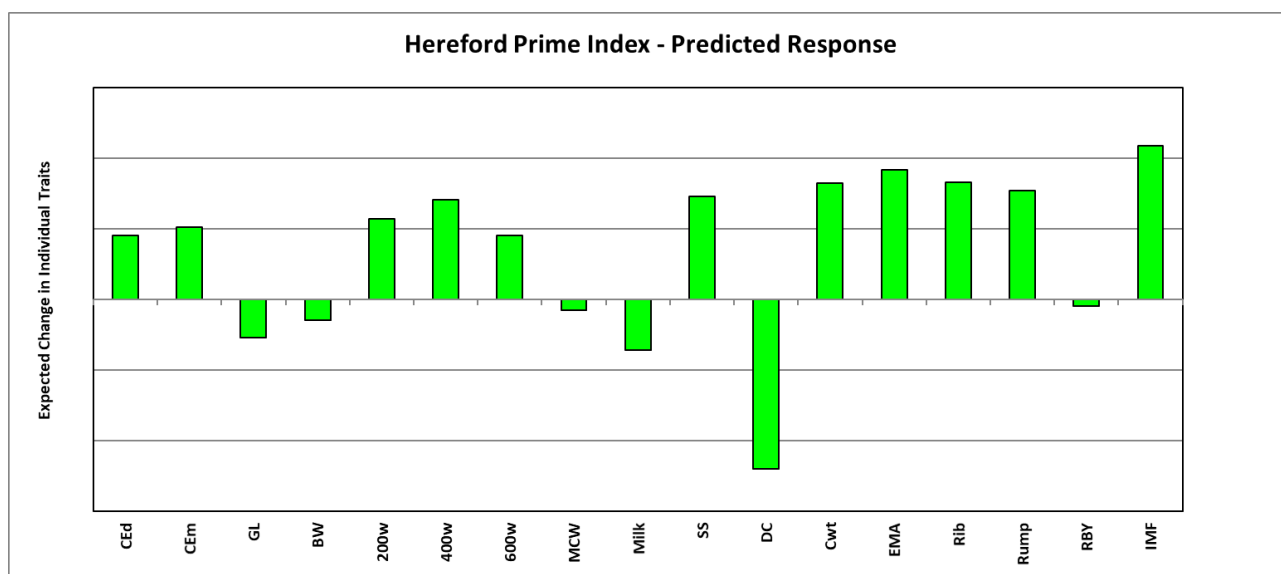


Considering the genetic relationship between the key profit drivers and the EBVs that are available, the bar graph below illustrates the magnitude and direction of emphasis that has been placed on each EBV within this selection index.



While the graphs on the previous page show the different profit drivers and emphases that have been placed on each EBV within the Hereford Prime Index, they do not illustrate the likely change that will occur to each individual trait if producers select animals using this selection index. The response to selection will also be influenced by such factors as the genetic relationship between traits and the animals that are available for selection.

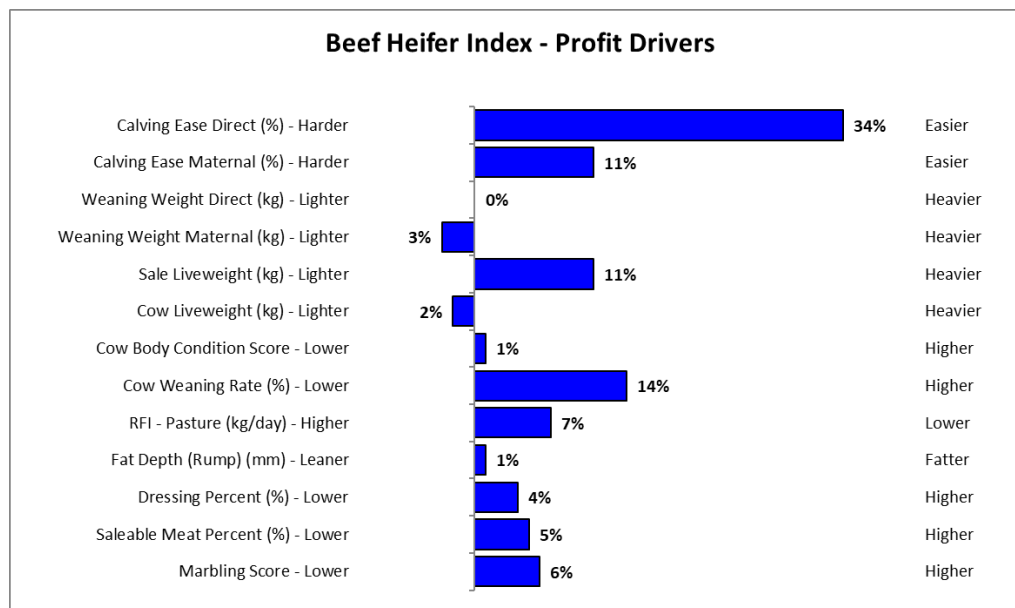
The following bar graph provides an indication of the relative change that would be expected in each individual trait if producers select animals using the Hereford Prime Index. The graph reflects the relative change if the New Zealand Hereford Published Sires (at the January 2021 Hereford BREEDPLAN analysis) 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.



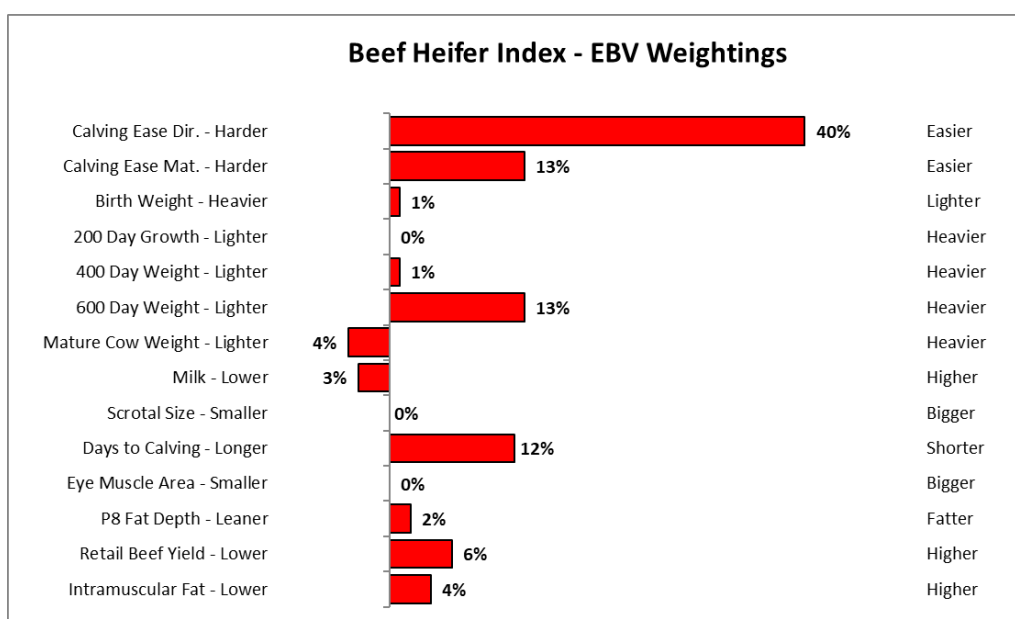
# Beef Heifer Index

The Beef Heifer Index estimates the genetic differences between animals in net profitability per yearling heifer joined for a typical self-replacing commercial herd where Hereford bulls are joined to either Hereford or other British breed heifers. Selected heifers are retained for breeding and so maternal traits are of importance. Steers target 510 kg live weight (280 kg HSCW and 7 mm P8 fat depth) and heifers 450 kg (250 kg HSCW and 8 mm P8 fat depth) at 20 months of age.

The following bar graph shows the key economic traits that are important in this selection index. The different trait emphases reflect the underlying profit drivers in a commercial operation targeting this production system and market.

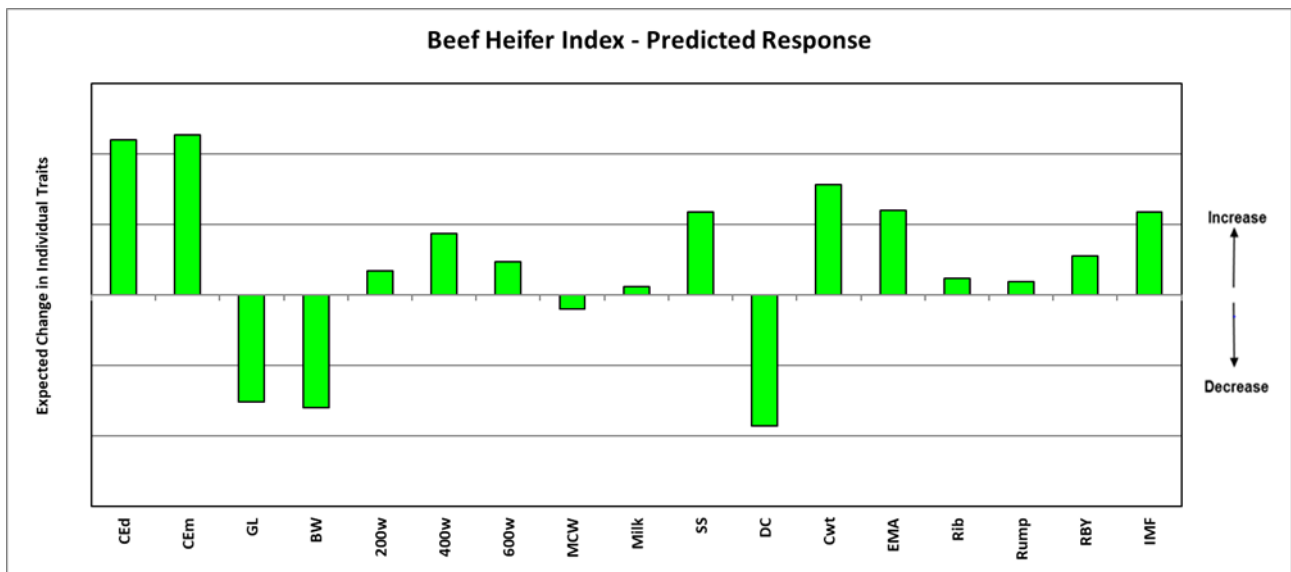


Considering the genetic relationship between the key profit drivers and the EBVs that are available, the bar graph below illustrates the magnitude and direction of emphasis that has been placed on each EBV within this selection index.



While the graphs on the previous page show the different profit drivers and emphases that have been placed on each EBV within the Beef Heifer Index, they do not illustrate the likely change that will occur to each individual trait if producers select animals using this selection index. The response to selection will also be influenced by such factors as the genetic relationship between traits and the animals that are available for selection.

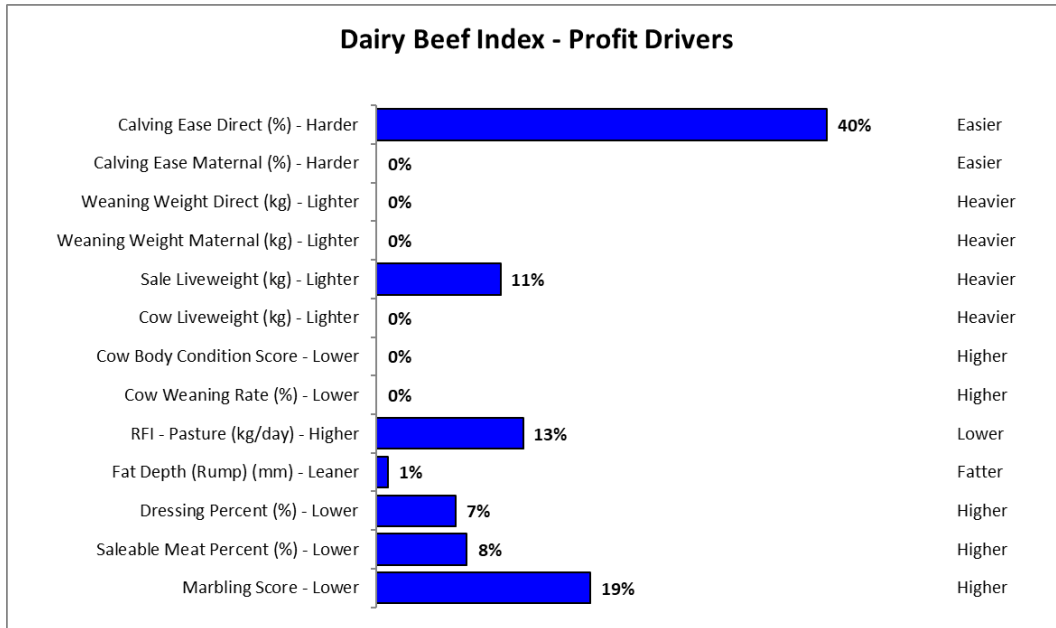
The following bar graph provides an indication of the relative change that would be expected in each individual trait if producers select animals using the Beef Heifer Index. The graph reflects the relative change if the New Zealand Hereford Published Sires (at the January 2021 Hereford BREEDPLAN analysis) 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.



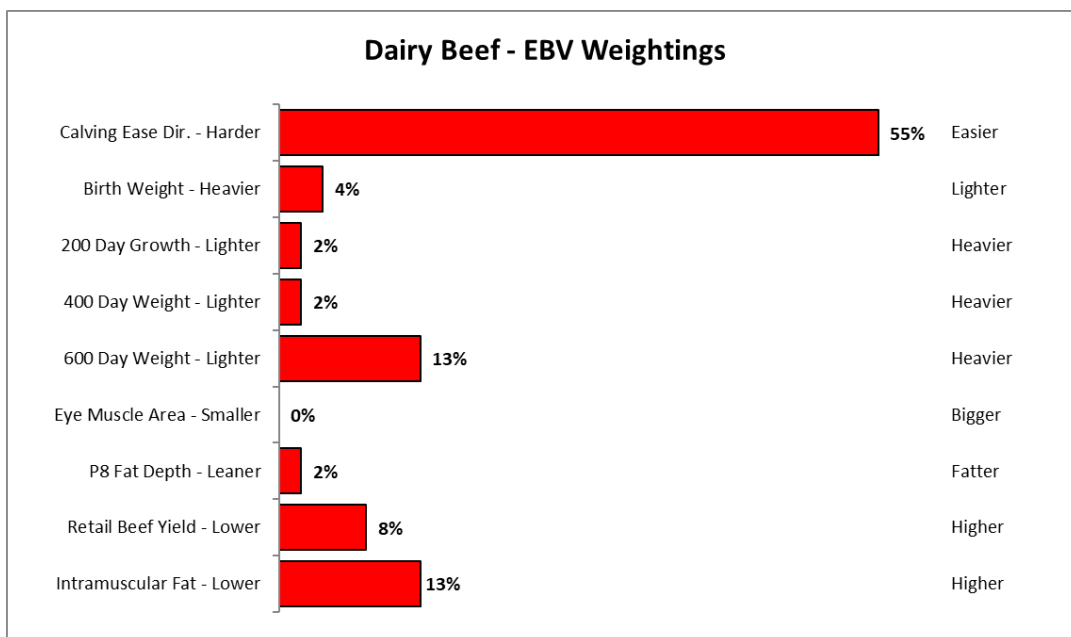
# Dairy Beef Index

The Dairy Beef Index estimates the genetic differences between animals in net profitability per mixed age dairy cow joined with all progeny destined for slaughter. Steers and heifer progeny target 550 kg live weight (300 kg carcass weight and 6 mm fat depth) at 24 months of age and at 475 kg live weight (260 kg carcass weight and 7 mm fat depth) at 22 months, respectively.

The following bar graph shows the key economic traits that are important in this selection index. The different trait emphases reflect the underlying profit drivers in a commercial operation targeting this production system and market.



Considering the genetic relationship between the key profit drivers and the EBVs that are available, the bar graph below illustrates the magnitude and direction of emphasis that has been placed on each EBV within this selection index.



While the graphs on the previous page show the different profit drivers and emphases that have been placed on each EBV within the Dairy Beef Index, they do not illustrate the likely change that will occur to each individual trait if producers select animals using this selection index. The response to selection will also be influenced by such factors as the genetic relationship between traits and the animals that are available for selection. For example, while there are no weightings applied to maternal traits (e.g. mature cow weight) in a terminal index, it would be expected that the maternal traits will still have selection responses due to correlations between them and other traits which do have selection emphasis applied to them (e.g. growth).

The following bar graph provides an indication of the relative change that would be expected in each individual trait if producers select animals using the Dairy Beef Index. The graph reflects the relative change if the New Zealand Hereford Published Sires (at the January 2021 Hereford BREEDPLAN analysis) 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.

