New Zealand Angus Association Selection Indexes

There are currently three different selection indexes calculated for New Zealand Angus animals. These are:

❑   Self Replacing Index

❑   AngusPure Index

❑   Heifer/Dairy Terminal Index

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

Self Replacing Index (SRI) - Estimates the genetic differences between animals in net profitability per cow joined in an example self-replacing commercial herd that targets the production of grass finished steers. Steers are assumed marketed at approximately 480 kg live weight (265 kg carcase weight and 7 mm fat depth) at approximately 16 months of age. Selected heifers are retained for breeding and the balance marketed at approximately 16 months weighing 415 kg (230 kg carcase weight and 8 mm fat depth). As some daughters are retained, maternal traits are also of importance.

AngusPure Index (API) - Estimates the genetic differences between animals in net profitability per cow joined in an example self-replacing commercial Angus herd that targets the production of grass finished steers for the AngusPure programme. Steers are assumed marketed at approximately 530 kg live weight (290 kg carcase weight and 10 mm fat depth) at approximately 20 months of age. Selected heifers are retained for breeding and the balance marketed at approximately 20 months weighing 450 kg (240 kg carcase weight and 10 mm fat depth). A significant premium for carcase quality was assumed and, as some daughters are retained, maternal traits are also of importance.

Heifer/Dairy Terminal Index (HDT) - Estimates the genetic differences between animals in net profitability per female joined in an example herd where all progeny are marketed. All progeny are marketed at approximately 510 kg live weight (280 kg carcase weight and 7 mm fat depth) at approximately 24 months of age.

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.
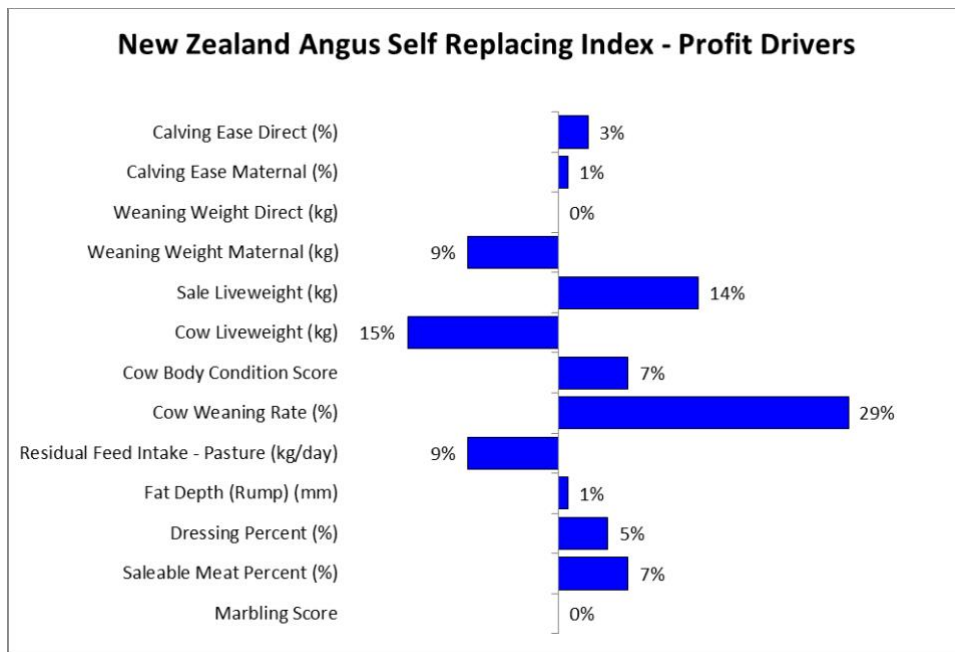
If you have any further queries regarding the New Zealand Angus Selection Indexes, please do not hesitate to contact staff at the New Zealand Angus Association or your BREEDPLAN processing centre.
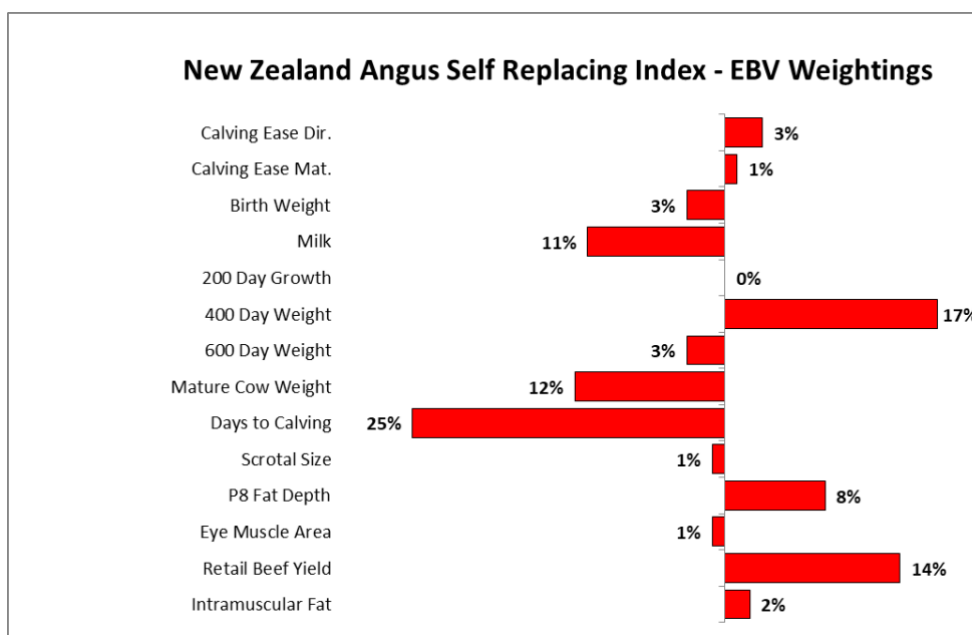
Self Replacing Index

The Self Replacing Index estimates the genetic differences between animals in net profitability per cow joined in an example self-replacing commercial herd that targets the production of grass finished steers. Steers are assumed marketed at approximately 480 kg live weight (265 kg carcase weight and 7mm fat depth) at approximately 16 months of age. Selected heifers are retained for breeding and the balance marketed at approximately 16 months weighing 415 kg (230 kg carcase weight and 8 mm fat depth). As some daughters are retained, maternal traits are also of importance.

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.

New Zealand Angus Self Replacing Index - Profit Drivers

| Trait	Value
Calving Ease Direct (%)	3%
Calving Ease Maternal (%)	1%
Weaning Weight Direct (kg)	0%
Weaning Weight Maternal (kg)	9%
Sale Liveweight (kg)	14%
Cow Liveweight (kg)	15%
Cow Body Condition Score	7%
Cow Weaning Rate (%)	29%
Residual Feed Intake - Pasture (kg/day)	9%
Fat Depth (Rump) (mm)	1%
Dressing Percent (%)	5%
Saleable Meat Percent (%)	7%
Marbling Score	0%

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.

New Zealand Angus Self Replacing Index - EBV Weightings

EBV	Value
Calving Ease Dir.	3%
Calving Ease Mat.	1%
Birth Weight	3%
Milk	11%
200 Day Growth	0%
400 Day Weight	17%
600 Day Weight	3%
Mature Cow Weight	12%
Days to Calving	25%
Scrotal Size	1%
P8 Fat Depth	8%
Eye Muscle Area	1%
Retail Beef Yield	14%
Intramuscular Fat	2%

While the graphs on the previous page show the different profit drivers and emphases that have been placed on each EBV within the Self Replacing 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 is a negative weighting on 600 Day Weight in this selection index, it would be expected that growth to 600 days would increase due to the large weighting on 400 Day Weight.
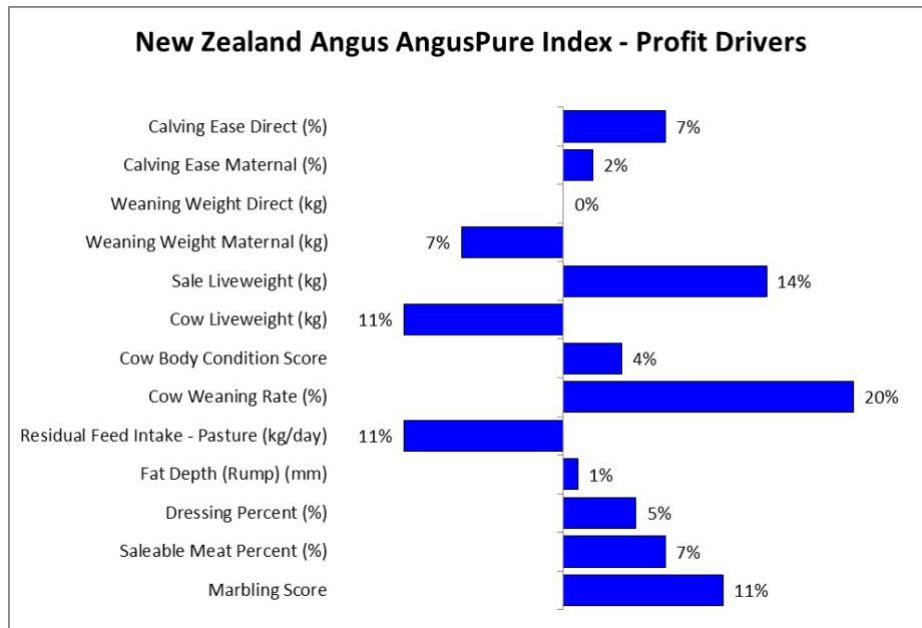
The following bar graph provides an indication of the relative change that would be expected in each individual trait if producers select animals using the Self Replacing Index. The graph reflects the relative change if the New Zealand Angus Published Sires (at the Mid-August 2020 TransTasman Angus Cattle Evaluation 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.

New Zealand Angus Self Replacing Index - Predicted Response
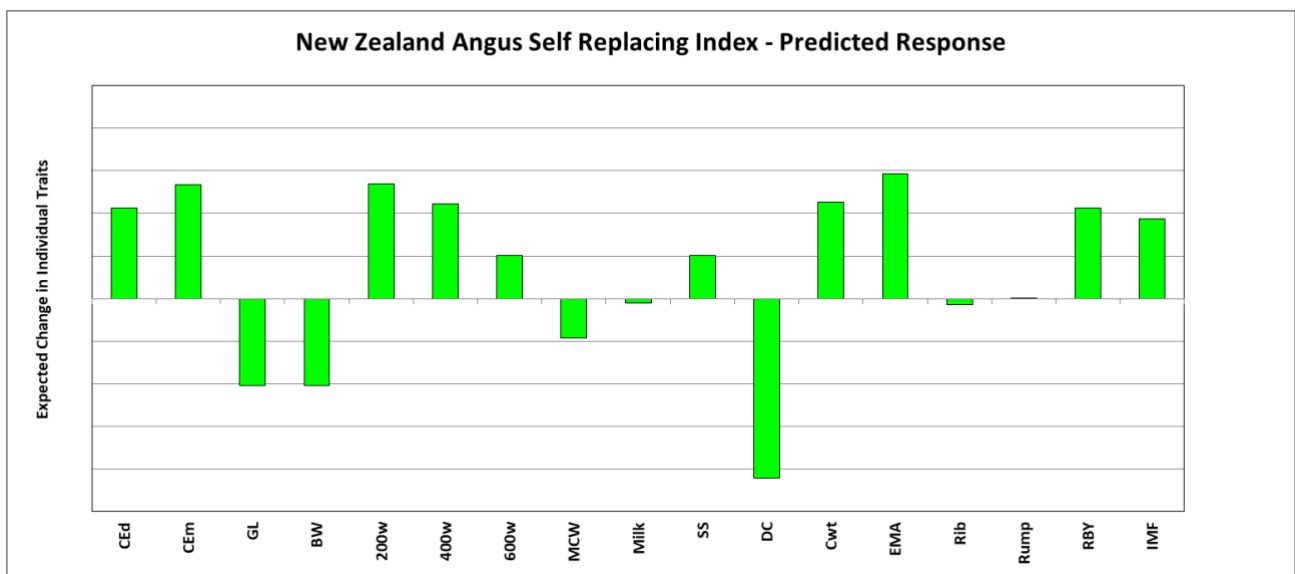
AngusPure Index

The AngusPure Index estimates the genetic differences between animals in net profitability per cow joined in an example self-replacing commercial Angus herd that targets the production of grass finished steers for the AngusPure programme. Steers are assumed marketed at approximately 530 kg live weight (290 kg carcase weight and 10 mm fat depth) at approximately 20 months of age. Selected heifers are retained for breeding and the balance marketed at approximately 20 months weighing 450 kg (240 kg carcase weight and 10 mm fat depth). A significant premium for carcase quality was assumed and as some daughters are retained, maternal traits are also of importance.

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.
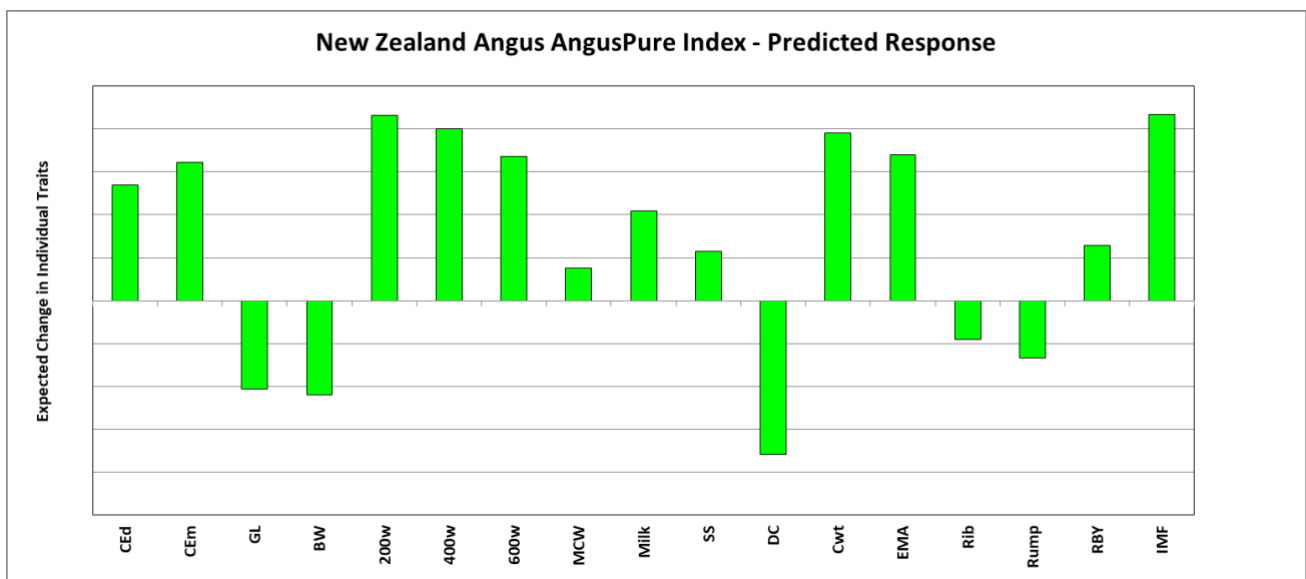

Considering the genetic relationship between the key profit drivers and the EBVs that are available, the bar graph below illustrates the magnitude and direction of emphasis that has been placed on each EBV within this selection index.
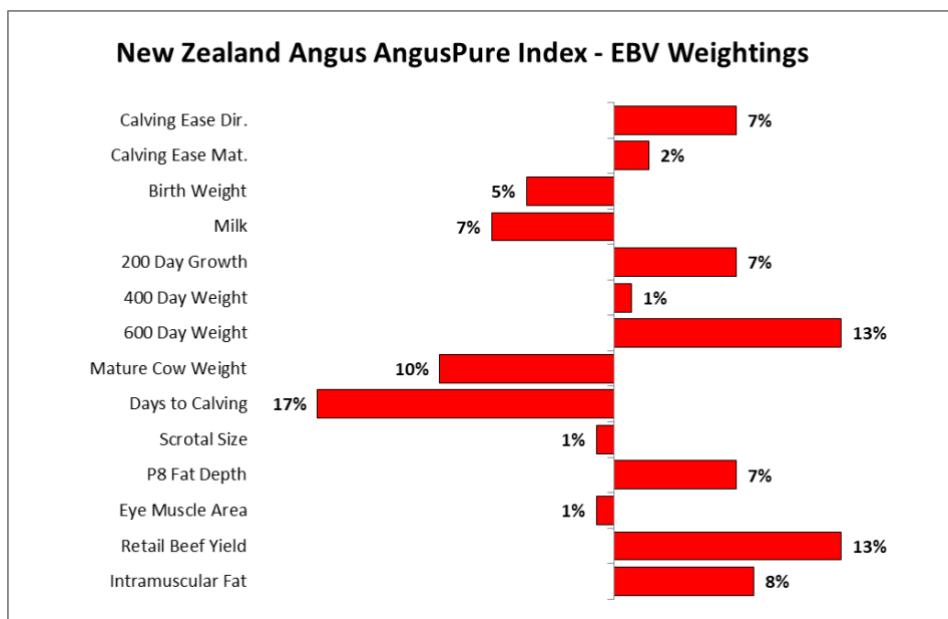
While the graphs on the previous page show the different profit drivers and emphases that have been placed on each EBV within the AngusPure Index, they do not illustrate the likely change that will occur to each individual trait if producers select animals using this selection index. The response to 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 is little weighting on 400 Day Weight in this selection index, it would be expected that growth to 400 days would increase due to the large weightings on both 200 and 600 Day Weights.
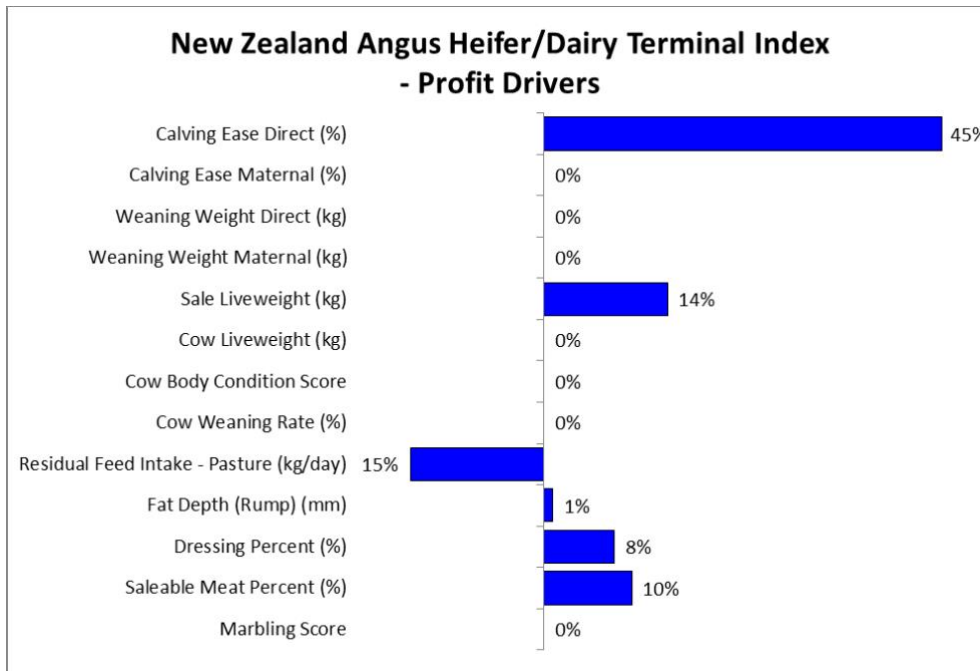
The following bar graph provides an indication of the relative change that would be expected in each individual trait if producers select animals using the AngusPure Index. The graph reflects the relative change if the New Zealand Angus Published Sires (at the Mid-August 2020 TransTasman Angus Cattle Evaluation 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.
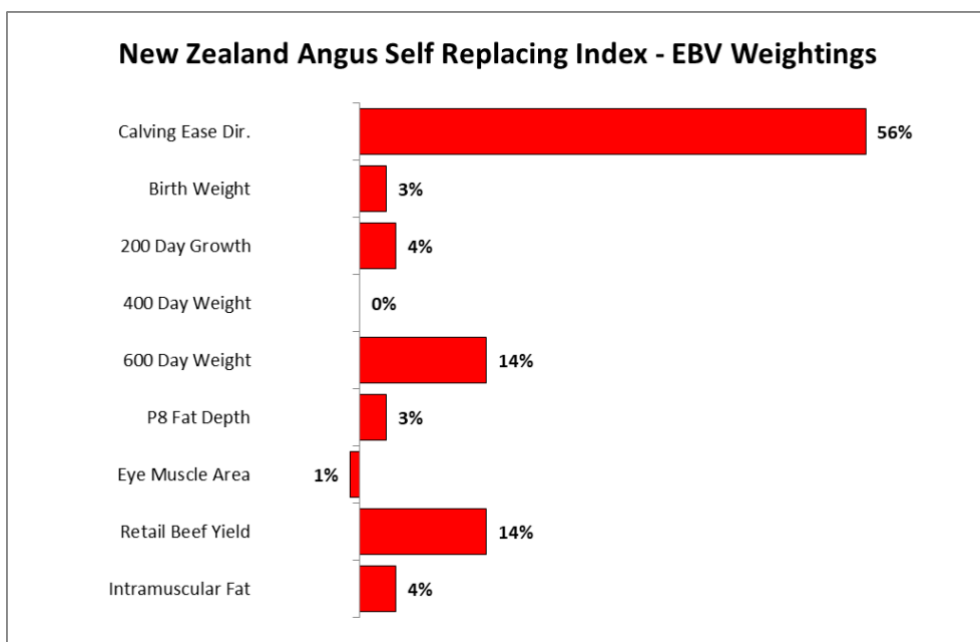

New Zealand Angus AngusPure Index - Predicted Response

Heifer/Dairy Terminal Index

The Heifer/Dairy Terminal Index estimates the genetic differences between animals in net profitability per cow joined in an example herd where all progeny are marketed. All progeny are marketed at approximately 510 kg live weight (280 kg carcase weight and 7 mm fat depth) at approximately 24 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.

New Zealand Angus Heifer/Dairy Terminal Index - Profit Drivers

Trait	Value
Calving Ease Direct (%)	45%
Calving Ease Maternal (%)	0%
Weaning Weight Direct (kg)	0%
Weaning Weight Maternal (kg)	0%
Sale Liveweight (kg)	14%
Cow Liveweight (kg)	0%
Cow Body Condition Score	0%
Cow Weaning Rate (%)	0%
Residual Feed Intake - Pasture (kg/day)	15%
Fat Depth (Rump) (mm)	1%
Dressing Percent (%)	8%
Saleable Meat Percent (%)	10%
Marbling Score	0%

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.

New Zealand Angus Self Replacing Index - EBV Weightings

Trait	Value
Calving Ease Dir.	56%
Birth Weight	3%
200 Day Growth	4%
400 Day Weight	0%
600 Day Weight	14%
P8 Fat Depth	3%
Eye Muscle Area	1%
Retail Beef Yield	14%
Intramuscular Fat	4%

August 2020

While the graphs on the previous page show the different profit drivers and emphases that have been placed on each EBV within the Heifer/Dairy Terminal 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. days to calving) 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 Heifer/Dairy Terminal Index. The graph reflects the relative change if the New Zealand Angus Published Sires (at the Mid-August 2020 TransTasman Angus Cattle Evaluations 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.