HEREFORDS
Australia

# AUSTRALIAN HEREFORD SELECTION INDEXES

**THERE ARE CURRENTLY FOUR DIFFERENT SELECTION INDEXES CALCULATED FOR AUSTRALIAN HEREFORD ANIMALS. THESE ARE:**

- SOUTHERN SELF-REPLACING INDEX
- NORTHERN SELF-REPLACING INDEX
- SOUTHERN BALDY MATERNAL INDEX
- NORTHERN BALDY TERMINAL 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. All four selection indexes are focussed on maintaining and improving eating quality. Significant premiums are applied for increasing marble score up to a marble score of 3. Pressure is also applied to early life growth to maintain low ossification scores and good MSA compliance. In addition, each selection index targets the following specifications.

## SOUTHERN SELF-REPLACING INDEX

Estimates the genetic differences between animals in net profitability per cow joined in a commercial self-replacing straight bred Hereford herd targeting the domestic market. Daughters are retained for breeding and so maternal traits are of importance. Steers are slaughtered at 20 to 22 months of age to produce 300 kg carcases with 10 mm P8 fat depth. A moderate cost is applied for cow feed costs during the annual feed shortage period.

## NORTHERN SELF-REPLACING INDEX

Estimates the genetic differences between animals in net profitability per cow joined in a commercial self-replacing herd targeting the domestic market. This index is suitable for use by both straight bred Hereford herds and in crossbreeding programs where Hereford bulls are being used over a *Bos indicus* based cow herd (e.g. flatback). Daughters are retained for breeding and so maternal traits are of importance. Steers are slaughtered at 20 to 22 months of age to produce 340 kg carcases with 12 mm P8 fat depth. A high cost is applied for cow feed costs during the annual feed shortage period.

## SOUTHERN BALDY MATERNAL INDEX

Estimates the genetic differences between animals in net profitability per cow joined in a commercial crossbred herd using Hereford bulls over *Bos taurus* females (e.g. Angus). A portion of the heifers are retained for breeding and so maternal traits are of importance. The steers and surplus heifers are destined for slaughter at 20 to 22 months of age. Steers produce 300 kg carcases with 10 mm of P8 fat depth, while heifers produce 270 kg carcases with 12 mm of P8 fat depth. A moderate cost is applied for cow feed costs during the annual feed shortage period.

## NORTHERN BALDY TERMINAL INDEX

Estimates the genetic differences between animals in net profitability per cow joined in a commercial crossbred herd (e.g. flatback) using Hereford bulls over *Bos indicus/Tropical* females (e.g. Santa Gertrudis) where all progeny (male and female) are destined for slaughter. Steers and heifers are slaughtered at 20 to 22 months of age. Steers produce 340 kg carcases with 14 mm of P8 fat depth while heifers produce 300 kg carcases with 17 mm of P8 fat depth.

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

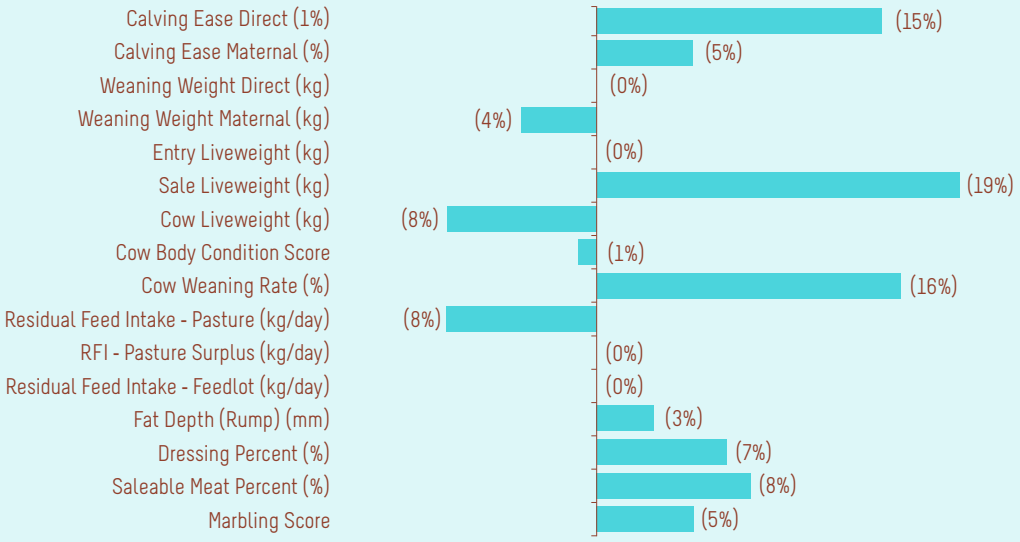
**If you have any further queries regarding Hereford Selection Indexes, please do not hesitate to contact staff at Herefords Australia or your BREEDPLAN processing centre.**

# SOUTHERN SELF-REPLACING INDEX

The Southern Self-Replacing Index estimates the genetic differences between animals in net profitability per cow joined in a commercial self-replacing straight bred Hereford herd targeting the domestic market. Daughters are retained for breeding and so maternal traits are of importance. Steers are slaughtered at 20 to 22 months of age to produce 300 kg carcases with 10 mm P8 fat depth. A moderate cost is applied for cow feed costs during the annual feed shortage period.

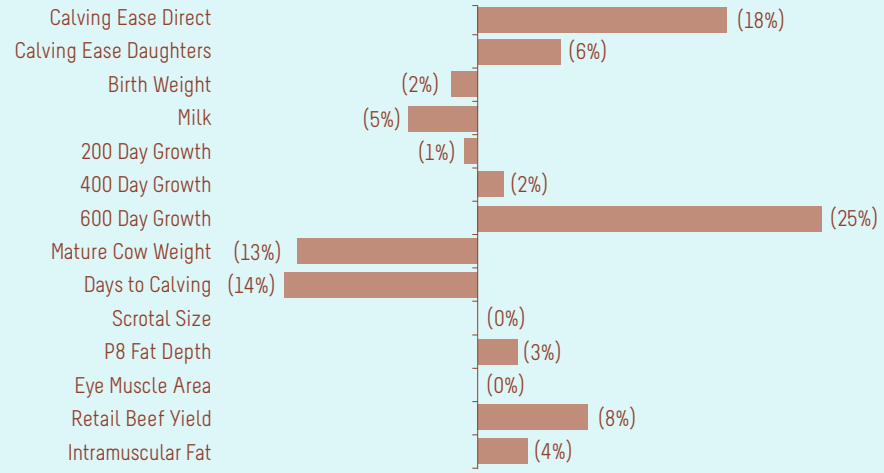
The following bar graph shows the key economic traits that are important in this selection index. The different trait emphases reflect the underlying profit drivers in a commercial operation targeting this production system and market.

## SOUTHERN SELF-REPLACING INDEX - PROFIT DRIVERS




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.

## SOUTHERN SELF-REPLACING INDEX - EBV WEIGHTINGS

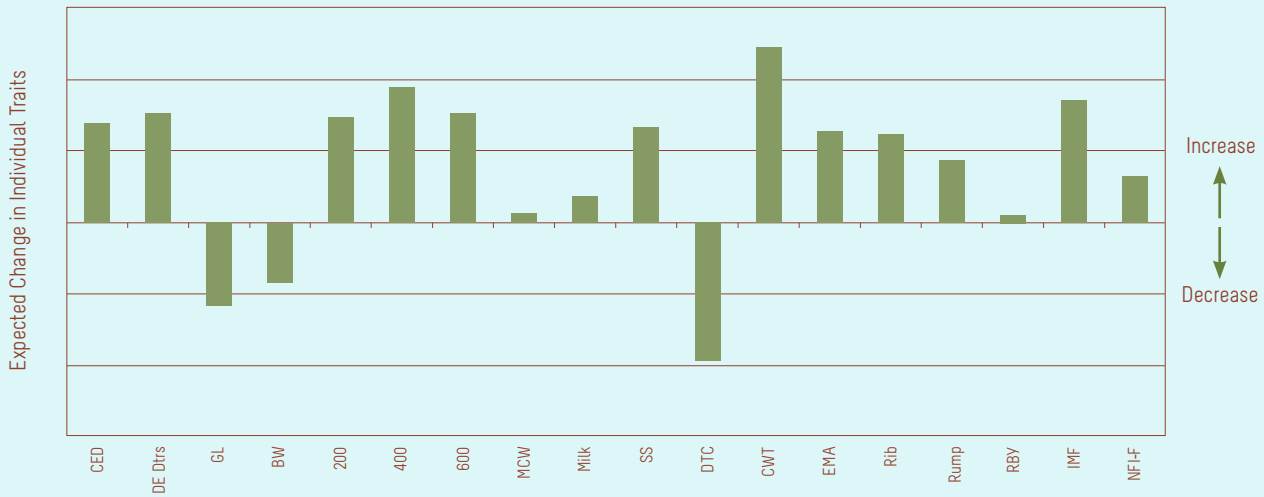


# SOUTHERN SELF-REPLACING INDEX

While the graphs on the previous page show the different profit drivers and emphases that have been placed on each EBV within the Southern 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 only a very small direct weighting on 400 Day Weight in this selection index, it would be expected that growth to 400 days would increase considerably as there is a large weighting on 600 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 Southern Self-Replacing Index. The graph reflects the relative change if the Hereford Published Sires (at the October 2019 Hereford GROUP 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.

## SOUTHERN SELF-REPLACING INDEX – PREDICTED RESPONSE

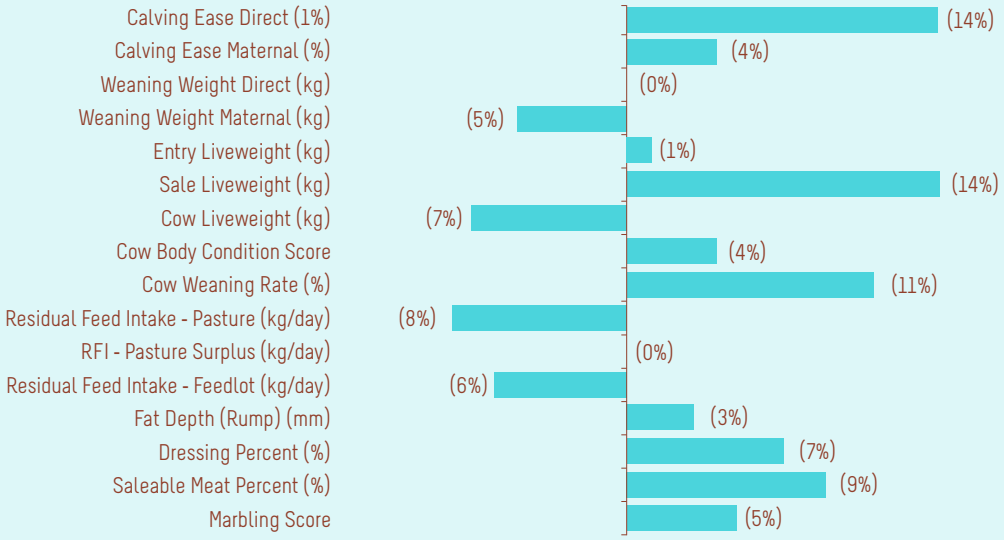


# NORTHERN SELF-REPLACING INDEX

The Northern Self-Replacing Index estimates the genetic differences between animals in net profitability per cow joined in a commercial self-replacing straight bred Hereford herd targeting the domestic market. herd targeting the domestic market. This index is suitable for use by both straight bred Hereford herds and in crossbreeding programs where Hereford bulls are being used over a Bos indicus based cow herd (e.g. flatback). Daughters are retained for breeding and so maternal traits are of importance. Steers are slaughtered at 18 months of age to produce 340 kg carcases with 12 mm P8 fat depth. A high cost is applied for cow feed costs during the annual feed shortage period.

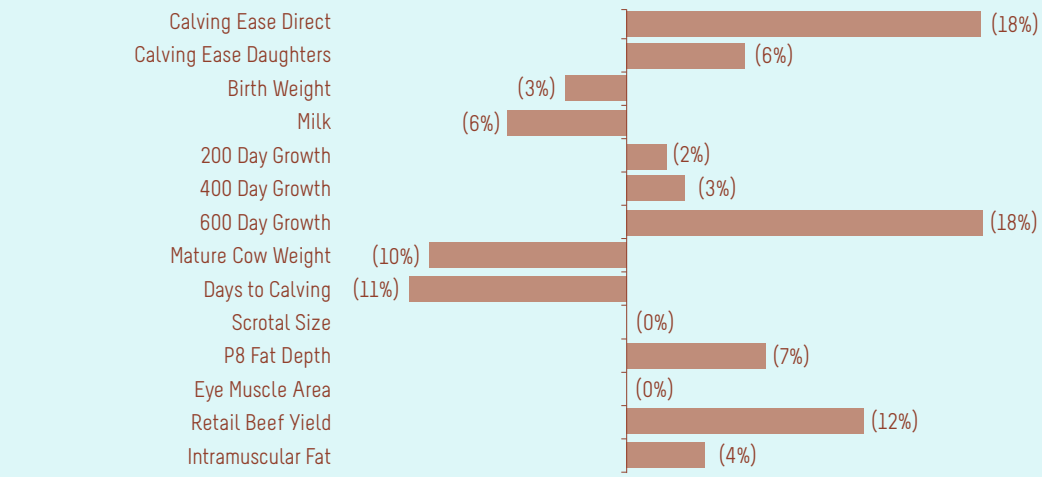
The following bar graph shows the key economic traits that are important in this selection index. The different trait emphases reflect the underlying profit drivers in a commercial operation targeting this production system and market.

## NORTHERN SELF-REPLACING INDEX - PROFIT DRIVERS




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.

## NORTHERN SELF-REPLACING INDEX - EBV WEIGHTINGS

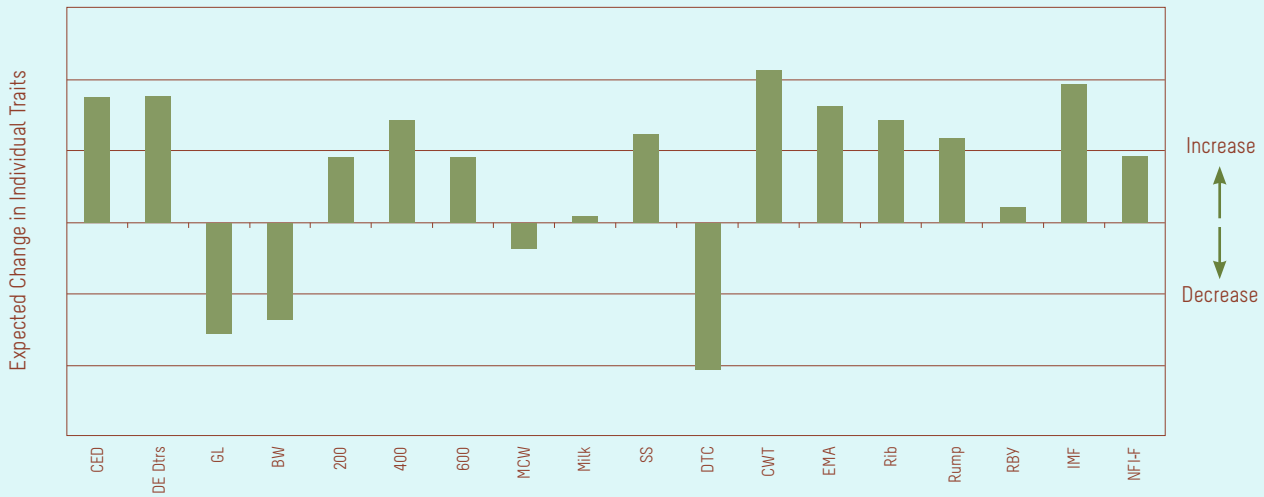


# NORTHERN SELF-REPLACING INDEX

While the graphs on the previous page show the different profit drivers and emphases that have been placed on each EBV within the Northern 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 only a very small direct weighting on 400 Day Weight in this selection index, it would be expected that growth to 400 days would increase considerably as there is a large weighting on 600 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 Northern Self-Replacing Index. The graph reflects the relative change if the Hereford Published Sires (at the October 2019 Hereford GROUP 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.

## NORTHERN SELF-REPLACING INDEX - PREDICTED RESPONSE

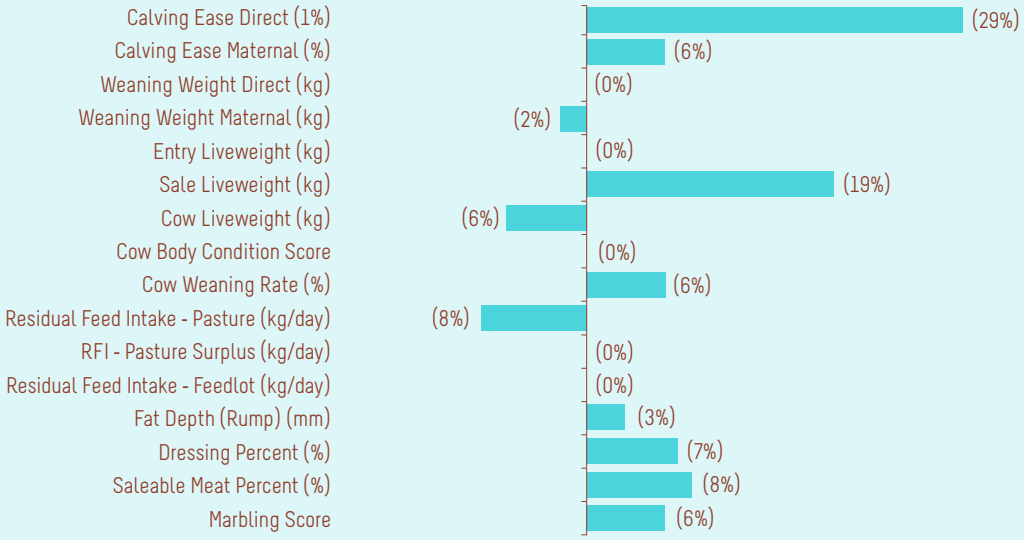


# SOUTHERN BALDY MATERNAL INDEX

The Southern Baldy Maternal Index estimates the genetic differences between animals in net profitability per cow joined in a commercial crossbred herd using Hereford bulls over *Bos taurus* females (e.g. Angus). A portion of the heifers are retained for breeding and so maternal traits are of importance. The steers and surplus heifers are destined for slaughter at 18 to 19 months of age. Steers produce 300 kg carcases with 10 mm of P8 fat depth, while heifers produce 270 kg carcases with 12 mm of P8 fat depth. A moderate cost is applied for cow feed costs during the annual feed shortage period.

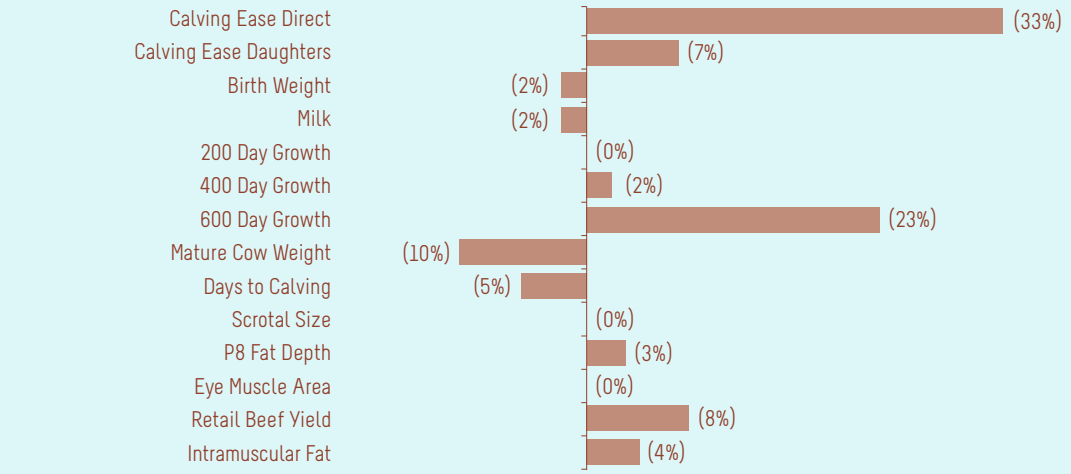
The following bar graph shows the key economic traits that are important in this selection index. The different trait emphases reflect the underlying profit drivers in a commercial operation targeting this production system and market.

## SOUTHERN BALDY MATERNAL INDEX - PROFIT DRIVERS




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.

## SOUTHERN BALDY MATERNAL INDEX - EBV WEIGHTINGS

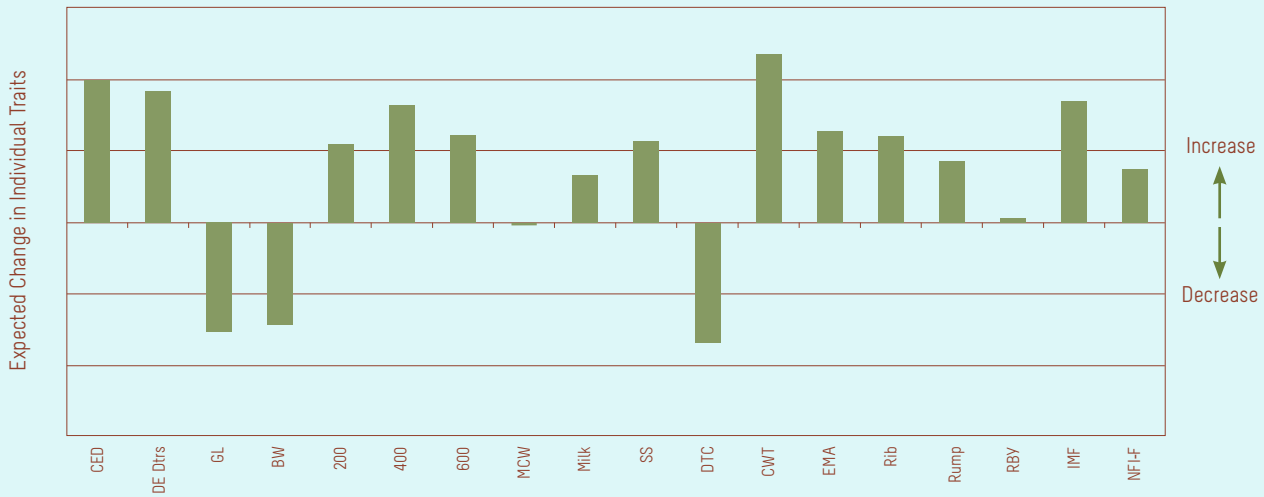


# SOUTHERN BALDY MATERNAL INDEX

While the graphs on the previous page show the different profit drivers and emphases that have been placed on each EBV within the Southern Baldy Maternal 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 only a very small direct weighting on 400 Day Weight in this selection index, it would be expected that growth to 400 days would increase considerably as there is a large weighting on 600 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 Southern Baldy Maternal Index. The graph reflects the relative change if the Hereford Published Sires (at the October 2019 Hereford GROUP 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.

## SOUTHERN BALDY MATERNAL INDEX – PREDICTED RESPONSE

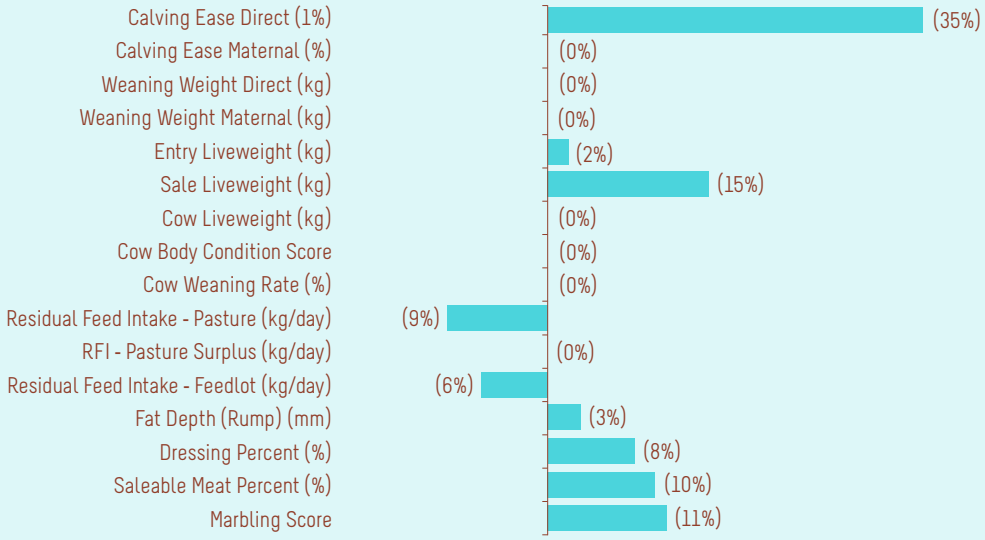


# NORTHERN BALDY TERMINAL INDEX

The Northern Baldy Terminal Index estimates the genetic differences between animals in net profitability per cow joined in a commercial crossbred herd (e.g. flatback) using Hereford bulls over *Bos indicus/Tropical* females (e.g. Santa Gertrudis) where all progeny (male and female) are destined for slaughter. Steers and heifers are slaughtered at 20 to 22 months of age. Steers produce 340 kg carcases with 14 mm of P8 fat depth while heifers produce 300 kg carcases with 17 mm of P8 fat depth.

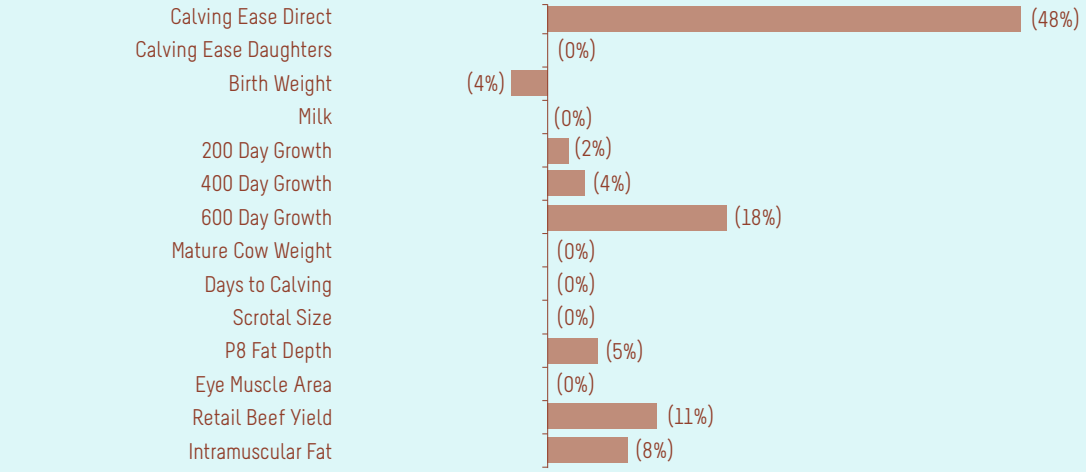
The following bar graph shows the key economic traits that are important in this selection index. The different trait emphases reflect the underlying profit drivers in a commercial operation targeting this production system and market.

## NORTHERN BALDY TERMINAL INDEX – PROFIT DRIVERS




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.

## NORTHERN BALDY TERMINAL INDEX – EBV WEIGHTINGS

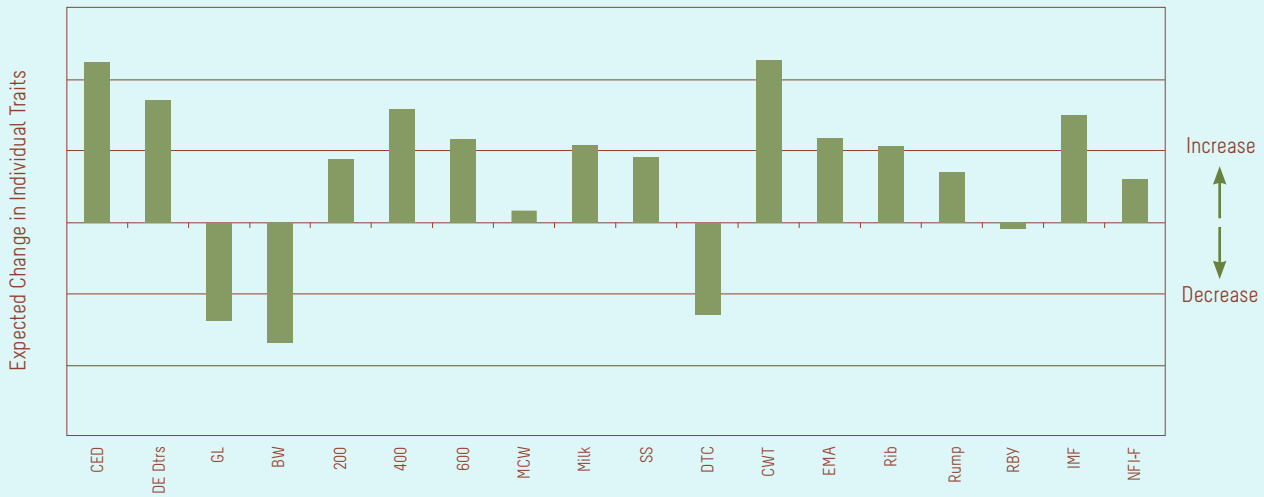


# NORTHERN BALDY TERMINAL INDEX

While the graphs on the previous page show the different profit drivers and emphases that have been placed on each EBV within the Northern Baldy 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 is only a very small direct weighting on 400 Day Weight in this selection index, it would be expected that growth to 400 days would increase considerably as there is a large weighting on 600 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 Northern Baldy Terminal Index. The graph reflects the relative change if the Hereford Published Sires (at the October 2019 Hereford GROUP 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.

## NORTHERN BALDY TERMINAL INDEX – PREDICTED RESPONSE




HEREFORDS
Australia

**Herefords Australia Limited**
ABN 86 121 714 332

Locked Bag 7
(16 Uralla Road)
Armidale NSW 2350

**t** +61 2 6772 1399
**f** +61 2 6772 1615
**e** info@herefordsaustralia.com.au