# Determining the Economic Value of Bull Selection in Genomic Tested Herds

## Instructions for use

Thank you for selecting this tool to determine the economic effects of bull selection on your genomic tested herd. This is a guide to help you use the spreadsheet which will calculate an approximation of the economic value of your selection decisions.

1. Enter your bull PTA traits using the 'Average Bull Value Calculator'

   In this tool you have the option of evaluating the economic value of individual bulls, or of a group of bulls on your herd. If you want to evaluate an individual, then just enter one bull into the column 'Bull 1' on the sheet 'Average Bull Value Calculator'. If you wish to evaluate a group of bulls then enter all the bull's individual traits into the 'Bull X' columns. The spreadsheet will then automatically calculate the average based on the weighting of how much of each bull is intended to be used. The average values are then automatically moved into the 'Economics of Bull Selection' tab.

**Average Bull Value Calculator**

| Trait | Unit | Bull 1 | Bull 2 | Bull 3 | Bull 4 | Bull 5 | Bull 6 | Bull 7 | Bull 8 | Bull 9 | Bull 10 | Average |
|-------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
|       | Weighting | 20% | 20% | 20% | 20% | 20% |  |  |  |  |  |  |
|       | Name | Supersire | Mogul | Moonboy | Mccutchen | Bookem |  |  |  |  |  |  |
| Protein | Pounds | 68.00 | 39 | 35 | 34 | 53 |  |  |  |  |  | 45.80 |
| Fat | Pounds | 96.00 | 90 | 11 | 42 | 33 |  |  |  |  |  | 54.40 |
| Milk | Pounds | 2190.00 | 1228 | 884 | 854 | 1386 |  |  |  |  |  | 1308.40 |
| PL | Months | 6.50 | 4.5 | 5.7 | 2.8 | 4.5 |  |  |  |  |  | 4.80 |
| SCS | Log | 2.97 | 3.04 | 2.70 | 2.90 | 2.85 |  |  |  |  |  | 2.89 |
| UDC | Composite | 0.88 | 2.59 | 2.59 | 2.81 | 1.24 |  |  |  |  |  | 2.02 |
| FLC | Composite | 0.63 | 3.50 | 2.87 | 2.28 | 1.03 |  |  |  |  |  | 2.06 |
| BDC | Composite | 0.71 | 0.89 | 1.16 | 3.08 | 0.88 |  |  |  |  |  | 1.34 |
| DPR | Percent | -0.20 | -1.3 | 1.8 | 0.0 | -0.1 |  |  |  |  |  | 0.04 |
| HCR | Percent | 2.80 | 0.1 | 0.2 | 0.5 | 2.5 |  |  |  |  |  | 1.22 |
| CCR | Percent | 1.90 | -0.3 | 1.2 | 0.4 | 2.0 |  |  |  |  |  | 1.04 |
| SCE |  | 7.50 | 6.2 | 5.5 | 7.6 | 6.7 |  |  |  |  |  | 6.70 |
| DCE |  | 5.30 | 4.5 | 4.9 | 4.2 | 3.5 |  |  |  |  |  | 4.48 |
| SSB |  | 6.20 | 6.7 | 7.3 | 9.0 | 7.3 |  |  |  |  |  | 7.30 |
| DSB |  | 5.60 | 6.1 | 5.5 | 4.7 | 4.2 |  |  |  |  |  | 5.22 |

Enter the weighting of each bull on the herd's overall matings, the total must add up to 100%

Average Bull Value Calculator | Economics of Bull Selection | ⊕

Enter the bull's PTA traits

2. Input which set of economic values most suit your herd's management

   Enter the 'Economics of Bull Selection' tab and select which index most suits your herd's management. Choose from Net Merit (NM), which is most appropriate to the average commercial herd; Fluid Merit (FM), which is most appropriate to herds selling milk on a fluid contract, Cheese Merit (CM), which is most appropriate to herds selling milk on a constituent basis and Grazing Merit (GM), which is most appropriate to grazing herds. This will select the economic values associated with each trait that is most appropriate to your farm and so increase the accuracy of the estimations.

**Select the most relevant index**

| Index? |
|---|
| NM |

*Enter either NM, CM, FM or GM*

Enter here NM for Net Merit, CM for Cheese Merit, FM for Fluid Merit or GM for Grazing Merit.

3. Enter your herd's (or a specific group's) average GPTA scores

Enter the GTPA scores from your genomic testing for the herd average or a select group of animals. Enter these into the 'Enter Herd Information' section of the 'Economics of Bull Selection' tab.

**Enter Herd Information**

| Trait | Unit | Herd GPTA |
|---|---|---|
| Protein | Pounds | 20 |
| Fat | Pounds | 25 |
| Milk | Pounds | 568 |
| PL | Months | 2.8 |
| SCS | Log | 2.88 |
| UDC | Composite | 0.1 |
| FLC | Composite | 0.14 |
| BDC | Composite | -0.25 |
| DPR | Percent | 1.3 |
| HCR | Percent | 1 |
| CCR | Percent | 1.7 |
| CA$ | Dollars | 12.3 |

4. Assess the economic value output

Using the inputted values, the spreadsheet will then estimate genetic progress from current herd and the next generation if bred with the inputted bull/bulls. The difference will then be applied to the Net Merit Index 2014 update (for NM, CM, FM and GM) to provide the economic gain from one generation to the next. Then through altering the bull inputs, you can assess which bull, or bulls is the most appropriate selection for your herd.

**Economic Output**

| Trait | Value of Gain |
|---|---|
| Protein | $ 53.41 |
| Fat | $ 47.33 |
| Milk | $ -2.22 |
| PL | $ 29.00 |
| SCS | $ -0.73 |
| UDC | $ 29.79 |
| FLC | $ 9.61 |
| BDC | $ -12.75 |
| DPR | $ -6.93 |
| HCR | $ 0.25 |
| CCR | $ -0.73 |
| CA$ | $ 14.25 |
| **Total Economic Benefit** | **$ 160.28** |