

# Holstein Production conversions

*April 2025*

## When to use these formulas

These conversions should only be used for converting cow evaluations and bulls which do not have an Interbull evaluation. Please check with AHDB Dairy if in doubt.

The formulae provide a guide only to the expected evaluations of the relevant bull or cow in the UK.

## How to convert a foreign proof using figures in the table below

$$\text{Approximate UK PTA} = a + (b * \text{Foreign proof})$$

## How to adjust the converted reliability

To take into account the loss of accuracy when converting a foreign proof into a UK equivalent, Interbull guidelines recommend that the foreign reliabilities should be adjusted by the squared correlations between the foreign and UK genetic evaluations.

When converting the foreign production proofs to UK equivalents, the foreign production reliability must therefore be multiplied by 0.8 (i.e. **UK reliability = 0.8 \* Foreign reliability**)

|     |      |     |   | <b>a</b> |   | <b>b</b> |   |     |
|-----|------|-----|---|----------|---|----------|---|-----|
| HOL | milk | GBR | = | -224.73  | + | 0.506    | * | AUS |
| HOL | fat  | GBR | = | -9.93    | + | 0.498    | * | AUS |
| HOL | pro  | GBR | = | -7.11    | + | 0.412    | * | AUS |
| HOL | milk | GBR | = | -182.77  | + | 0.597    | * | BEL |
| HOL | fat  | GBR | = | -12.4    | + | 0.481    | * | BEL |
| HOL | pro  | GBR | = | -8.02    | + | 0.599    | * | BEL |
| HOL | milk | GBR | = | 217.79   | + | 0.34     | * | CAN |
| HOL | fat  | GBR | = | 1.99     | + | 0.3      | * | CAN |
| HOL | pro  | GBR | = | 2.51     | + | 0.34     | * | CAN |
| HOL | milk | GBR | = | -151.74  | + | 0.499    | * | CHE |
| HOL | fat  | GBR | = | -5.84    | + | 0.416    | * | CHE |
| HOL | pro  | GBR | = | -4.93    | + | 0.464    | * | CHE |
| HOL | milk | GBR | = | 266.74   | + | 0.37     | * | CZE |
| HOL | fat  | GBR | = | 6.56     | + | 0.416    | * | CZE |
| HOL | pro  | GBR | = | 7.79     | + | 0.398    | * | CZE |
| HOL | milk | GBR | = | 221.98   | + | 0.431    | * | DEU |
| HOL | fat  | GBR | = | 3.08     | + | 0.379    | * | DEU |

|     |      |     |   |          |   |        |   |     |
|-----|------|-----|---|----------|---|--------|---|-----|
| HOL | pro  | GBR | = | 6.08     | + | 0.412  | * | DEU |
| HOL | milk | GBR | = | -2271.74 | + | 22.912 | * | DFS |
| HOL | fat  | GBR | = | -84.81   | + | 0.865  | * | DFS |
| HOL | pro  | GBR | = | -64.53   | + | 0.689  | * | DFS |
| HOL | milk | GBR | = | 107.65   | + | 0.497  | * | ESP |
| HOL | fat  | GBR | = | -6.05    | + | 0.449  | * | ESP |
| HOL | pro  | GBR | = | -3.04    | + | 0.509  | * | ESP |
| HOL | milk | GBR | = | -12.9    | + | 0.466  | * | EST |
| HOL | fat  | GBR | = | -3.31    | + | 0.388  | * | EST |
| HOL | pro  | GBR | = | -0.9     | + | 0.416  | * | EST |
| HOL | milk | GBR | = | 146.19   | + | 0.428  | * | FRA |
| HOL | fat  | GBR | = | -0.81    | + | 0.373  | * | FRA |
| HOL | pro  | GBR | = | 3.66     | + | 0.429  | * | FRA |
| HOL | milk | GBR | = | -1606.76 | + | 15.192 | * | HRV |
| HOL | fat  | GBR | = | -56.79   | + | 0.506  | * | HRV |
| HOL | pro  | GBR | = | -42.12   | + | 0.395  | * | HRV |
| HOL | milk | GBR | = | 58.46    | + | 0.4    | * | HUN |
| HOL | fat  | GBR | = | -5.38    | + | 0.401  | * | HUN |
| HOL | pro  | GBR | = | -3.44    | + | 0.399  | * | HUN |
| HOL | milk | GBR | = | -760.03  | + | 1.453  | * | IRL |
| HOL | fat  | GBR | = | -24.81   | + | 1.185  | * | IRL |
| HOL | pro  | GBR | = | -21.16   | + | 1.216  | * | IRL |
| HOL | milk | GBR | = | -98.36   | + | 0.579  | * | ISR |
| HOL | fat  | GBR | = | -3.92    | + | 0.472  | * | ISR |
| HOL | pro  | GBR | = | -1.57    | + | 0.599  | * | ISR |
| HOL | milk | GBR | = | 194.42   | + | 0.438  | * | ITA |
| HOL | fat  | GBR | = | 0.14     | + | 0.367  | * | ITA |
| HOL | pro  | GBR | = | 3.06     | + | 0.401  | * | ITA |
| HOL | milk | GBR | = | 142.65   | + | 0.449  | * | JPN |
| HOL | fat  | GBR | = | -6.18    | + | 0.409  | * | JPN |
| HOL | pro  | GBR | = | -2.65    | + | 0.475  | * | JPN |
| HOL | milk | GBR | = | 20.01    | + | 0.45   | * | KOR |
| HOL | fat  | GBR | = | -9.42    | + | 0.429  | * | KOR |
| HOL | pro  | GBR | = | -5.88    | + | 0.454  | * | KOR |
| HOL | milk | GBR | = | -384.05  | + | 0.73   | * | LTU |
| HOL | fat  | GBR | = | -11.94   | + | 0.453  | * | LTU |
| HOL | pro  | GBR | = | -10.34   | + | 0.638  | * | LTU |
| HOL | milk | GBR | = | 177.32   | + | 0.661  | * | LVA |
| HOL | fat  | GBR | = | 0.15     | + | 0.499  | * | LVA |
| HOL | pro  | GBR | = | 3.6      | + | 0.618  | * | LVA |
| HOL | milk | GBR | = | 71.63    | + | 0.392  | * | NLD |

|     |      |     |   |          |   |        |   |     |
|-----|------|-----|---|----------|---|--------|---|-----|
| HOL | fat  | GBR | = | 3.29     | + | 0.338  | * | NLD |
| HOL | pro  | GBR | = | 6.25     | + | 0.358  | * | NLD |
| HOL | milk | GBR | = | -1139.64 | + | 0.568  | * | NZL |
| HOL | fat  | GBR | = | -24.64   | + | 0.419  | * | NZL |
| HOL | pro  | GBR | = | -24.02   | + | 0.426  | * | NZL |
| HOL | milk | GBR | = | -76.74   | + | 0.535  | * | POL |
| HOL | fat  | GBR | = | -7.82    | + | 0.396  | * | POL |
| HOL | pro  | GBR | = | -5.42    | + | 0.533  | * | POL |
| HOL | milk | GBR | = | 114.67   | + | 0.376  | * | PRT |
| HOL | fat  | GBR | = | -0.94    | + | 0.424  | * | PRT |
| HOL | pro  | GBR | = | -0.44    | + | 0.356  | * | PRT |
| HOL | milk | GBR | = | -35.61   | + | 0.518  | * | SVK |
| HOL | fat  | GBR | = | -4.2     | + | 0.421  | * | SVK |
| HOL | pro  | GBR | = | -2.51    | + | 0.462  | * | SVK |
| HOL | milk | GBR | = | -2573.88 | + | 23.997 | * | SVN |
| HOL | fat  | GBR | = | -92.25   | + | 0.817  | * | SVN |
| HOL | pro  | GBR | = | -84.42   | + | 0.759  | * | SVN |
| HOL | milk | GBR | = | -38.07   | + | 1.048  | * | URY |
| HOL | fat  | GBR | = | -3.35    | + | 0.972  | * | URY |
| HOL | pro  | GBR | = | -0.23    | + | 0.827  | * | URY |
| HOL | milk | GBR | = | 374.7    | + | 0.371  | * | USA |
| HOL | fat  | GBR | = | 10.86    | + | 0.342  | * | USA |
| HOL | pro  | GBR | = | 9.67     | + | 0.399  | * | USA |
| HOL | milk | GBR | = | -32.07   | + | 0.38   | * | ZAF |
| HOL | fat  | GBR | = | -5.39    | + | 0.33   | * | ZAF |
| HOL | pro  | GBR | = | -3.58    | + | 0.355  | * | ZAF |

## Calculating percentage PTAs

Apply the following formula using the converted yield PTAs to obtain estimates for the percentage PTAs.

$$\text{PTA Fat \%} = \frac{(\text{PTA fat (kg)} \times 100) - (\text{PTA milk (kg)} \times 4.01)}{(\text{PTA milk (kg)} + 8266)}$$

$$\text{PTA Prot \%} = \frac{(\text{PTA prot (kg)} \times 100) - (\text{PTA milk (kg)} \times 3.29)}{(\text{PTA milk (kg)} + 8266)}$$