

# Holstein Fitness conversions

## August 2024

### 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.

## Somatic Cell Count (SCC)

The foreign SCC reliability must therefore be multiplied by 0.90 (i.e. **UK reliability = 0.90 \* Foreign reliability**)

	a	b	
GBR =	14.49 +	45.506 *	AUS
GBR =	-66.81 +	23.435 *	BEL
GBR =	227.98 +	-2.307 *	CAN
GBR =	109.32 +	-1.076 *	CHE
GBR =	79.9 +	-0.79 *	CZE
GBR =	97.75 +	-1.003 *	DEU
GBR =	101.74 +	-1.066 *	DFS
GBR =	116.25 +	-1.12 *	ESP
GBR =	70.2 +	-0.667 *	EST
GBR =	-2.02 +	-11.363 *	FRA
GBR =	92.73 +	-0.868 *	HRV
GBR =	2.66 +	8.608 *	HUN
GBR =	14.88 +	94.85 *	IRL
GBR =	5.82 +	43.259 *	ISR
GBR =	214.53 +	-2.135 *	ITA
GBR =	-50.74 +	28.043 *	JPN
GBR =	3.27 +	35.062 *	KOR
GBR =	4.37 +	29.915 *	LTU
GBR =	6.13 +	0.026 *	LVA
GBR =	279.38 +	-2.828 *	NLD
GBR =	13.37 +	26.928 *	NZL

GBR =	116.31	+	-1.118	*	POL
GBR =	4.93	+	27.057	*	PRT
GBR =	-74.47	+	26.885	*	SVK
GBR =	117.87	+	-1.091	*	SVN
GBR =	6.07	+	50.689	*	URY
GBR =	-178.78	+	59.914	*	USA
GBR =	2.2	+	0.444	*	ZAF

## Mastitis

The foreign Mastitis reliability must therefore be multiplied by 0.75 (i.e. **UK reliability = 0.75 \* Foreign reliability**)

	<b>a</b>		<b>b</b>		
GBR =	1.51	+	14.809	*	AUS
GBR =	-9.78	+	3.471	*	BEL
GBR =	29.75	+	-0.295	*	CAN
GBR =	19.12	+	-0.188	*	CHE
GBR =	12.69	+	-0.123	*	CZE
GBR =	21.41	+	-0.215	*	DEU
GBR =	16.18	+	-0.168	*	DFS
GBR =	16.35	+	-0.154	*	ESP
GBR =	9.98	+	-0.093	*	EST
GBR =	-0.09	+	-1.828	*	FRA
GBR =	16.6	+	-0.155	*	HRV
GBR =	0.75	+	1.268	*	HUN
GBR =	0.33	+	15.005	*	IRL
GBR =	-0.16	+	6.274	*	ISR
GBR =	29.7	+	-0.291	*	ITA
GBR =	-6.79	+	3.969	*	JPN
GBR =	0.54	+	5.486	*	KOR
GBR =	0.74	+	5.058	*	LTU
GBR =	1.08	+	0.004	*	LVA
GBR =	38.63	+	-0.389	*	NLD
GBR =	0.22	+	3.499	*	NZL
GBR =	17.52	+	-0.168	*	POL
GBR =	0.89	+	3.311	*	PRT
GBR =	-13.08	+	4.704	*	SVK
GBR =	17.8	+	-0.163	*	SVN
GBR =	1.05	+	8.222	*	URY
GBR =	0.36	+	-0.748	*	USA
GBR =	0.38	+	0.072	*	ZAF

## Lifespan (LS)

The foreign LS reliability must therefore be multiplied by 0.70 (i.e. **UK reliability = 0.70 \* Foreign reliability**)

	a	b								
GBR	=	(	-0.48	+	4.76	*	AUS	)	*	305
GBR	=	(	-0.2	+	0.747	*	BEL	)	*	305
GBR	=	(	-4.97	+	0.048	*	CAN	)	*	305
GBR	=	(	-2.3	+	0.022	*	CHE	)	*	305
GBR	=	(	-1.44	+	0.013	*	CZE	)	*	305
GBR	=	(	-2.04	+	0.021	*	DEU	)	*	305
GBR	=	(	-2.06	+	0.022	*	DFS	)	*	305
GBR	=	(	-2.92	+	0.027	*	ESP	)	*	305
GBR	=	(	-0.19	+	0.247	*	FRA	)	*	305
GBR	=	(	-0.13	+	0.17	*	HUN	)	*	305
GBR	=	(	-0.11	+	0.112	*	IRL	)	*	305
GBR	=	(	0.05	+	0.002	*	ISR	)	*	305
GBR	=	(	-4.6	+	0.045	*	ITA	)	*	305
GBR	=	(	-0.28	+	0.2	*	JPN	)	*	305
GBR	=	(	0.04	+	0.001	*	NLD	)	*	305
GBR	=	(	-0.11	+	0.099	*	NZL	)	*	305
GBR	=	(	-1.98	+	0.019	*	POL	)	*	305
GBR	=	(	-1.25	+	0.011	*	SVN	)	*	305
GBR	=	(	-0.07	+	0.109	*	USA	)	*	305
GBR	=	(	-1.07	+	0.009	*	ZAF	)	*	305

## Fertility Index (FI)

The foreign FI reliability must therefore be multiplied by 0.60 (i.e. **UK reliability = 0.60 \* Foreign reliability**)

GBR	=	-4.4	+	-0.492	*	AUS	CI	trait	+	0	*	AUS	NR	trait
GBR	=	-1.2	+	1.2207	*	BEL	CI	trait	+	0	*	BEL	NR	trait
GBR	=	-146.2	+	0.9294	*	CAN	CI	trait	+	0.5052	*	CAN	NR	trait
GBR	=	-30.8	+	0	*	CHE	CI	trait	+	0.3031	*	CHE	NR	trait
GBR	=	-17.6	+	0	*	CZE	CI	trait	+	0.1732	*	CZE	NR	trait
GBR	=	-68.8	+	0.4462	*	DEU	CI	trait	+	0.231	*	DEU	NR	trait
GBR	=	-58.7	+	0.4472	*	DFS	CI	trait	+	0.2021	*	DFS	NR	trait
GBR	=	-55	+	0.513	*	ESP	CI	trait	+	0	*	ESP	NR	trait
GBR	=	-3.6	+	5.3953	*	FRA	CI	trait	+	2.6127	*	FRA	NR	trait
GBR	=	2	+	-1.4504	*	IRL	CI	trait	+	0	*	IRL	NR	trait
GBR	=	2.2	+	0	*	ISR	CI	trait	+	0.9383	*	ISR	NR	trait
GBR	=	-6.5	+	-2.4082	*	ITA	CI	trait	+	1.6744	*	ITA	NR	trait
GBR	=	23.6	+	-0.3423	*	JPN	CI	trait	+	0.433	*	JPN	NR	trait
GBR	=	-186.6	+	1.2927	*	NLD	CI	trait	+	0.5918	*	NLD	NR	trait
GBR	=	4	+	65.8378	*	NZL	CI	trait	+	0	*	NZL	NR	trait
GBR	=	-67.6	+	0.4903	*	POL	CI	trait	+	0.1588	*	POL	NR	trait
GBR	=	-31.8	+	0.2755	*	SVN	CI	trait	+	0	*	SVN	NR	trait
GBR	=	-0.4	+	3.0852	*	URY	CI	trait	+	0	*	URY	NR	trait
GBR	=	-0.2	+	2.1046	*	USA	CI	trait	+	0.9816	*	USA	NR	trait
GBR	=	-1.2	+	-0.3274	*	ZAF	CI	trait	+	0	*	ZAF	NR	trait