INTERBULL breeding values calculated August 2026

This newsletter is primarily written for VikingGenetics staff and breeding advisors in Denmark, Sweden, and Finland, but can also be of interest for dairy farmers.

Table of content

International breeding values for the traits and breeds shown in table 1 have been published 11th August 2026.

Current evaluation	
Daughter proven bulls: Yield Conformation Somatic cell count and udder health Longevity Calving – maternal and direct Female fertility Milking speed and temperament NTM for Nordic and foreign bulls	Young genomic tested bulls - HOL: Yield Conformation Somatic cell count and udder health Longevity Calving – maternal and direct Female fertility Milking speed and temperament

Table 1. Traits and breeds for which international breeding values are published.

Trait:	**International breeding values for the breeds:**
Yield	Red breeds, Holstein and Jersey
Conformation	Red breeds, Holstein and Jersey
Udder health	Red breeds, Holstein and Jersey
Longevity	Red breeds, Holstein and Jersey
Calving – maternal and direct	Red breeds and Holstein
Female fertility	Red breeds, Holstein and Jersey
Milking speed	Red breeds, Holstein and Jersey
Temperament	Red breeds and Holstein

You can find Interbull breeding values for all bulls with international breeding values on NAV Interbull search

On the page you can search within breed or country of birth. You can also search with the herdbook number or the name of the bull. Click on the herdbook number of the bull and view a graphical representation of the bulls' breeding values.

You can sort the bulls by different breeding values by clicking on the top line of the table.

Bulls born in Denmark, Finland and Sweden are in the following grouped under DNK/FIN/SWE

Daughter proven bulls

In the tables below, only sires that have breeding values based on daughter information is shown. Country refer to birth country of the bulls.

Yield

In tables 2-4 is a comparison of the genetic level of yield for bulls from different countries. The analysis includes bulls born in 2019 or later, that have more than 60 daughters in the genetic evaluation.

Table 2. Genetic level for yield traits, Red breeds. Bulls born in 2019 or later.

Country	No. of bulls	Milkindex	Fatindex	Proteinindex	Y-index	Y-index STD
Australia	10	90,2	80,2	78,7	76,7	19,0
Canada	14	98,4	88,0	87,3	84,9	10,9
Germany	9	100,7	95,2	97,8	95,7	8,2
DNK/FIN/SWE	128	98,5	103,4	102,5	104,1	8,7
UK	5	80,0	69,6	64,0	63,2	8,9
Norway	126	101,4	94,8	98,2	95,5	10,6
New Zealand	12	92,6	84,1	83,1	81,3	9,8

Table 3. Genetic level for yield traits, Holstein. Bulls born in 2019 or later.

Country	No. of bulls	Milkindex	Fatindex	Proteinindex	Y-index	Y-index STD
Australia	39	96,5	97,9	97,5	98,0	6,9
Belgium	13	103,9	106,2	106,2	106,7	8,2
Canada	298	106,4	110,1	104,8	107,3	13,3
Switzerland	73	95,9	96,5	93,8	94,8	9,6
Czech Republic	44	111,6	108,3	109,2	108,1	7,8
Germany	677	114,6	106,8	111,5	108,2	9,8
DNK/FIN/SWE	167	98,4	104,5	103,8	105,6	8,4
Spain	51	112,2	99,8	104,0	99,7	7,4
France	262	106,4	99,7	104,1	101,2	8,6
UK	44	101,1	111,4	103,9	108,8	11,3
Ireland	13	67,1	82,7	73,5	80,2	6,6
Israel	103	101,2	97,2	97,5	96,5	7,6
Italy	112	107,9	103,2	107,4	105,0	7,8
Japan	15	110,3	110,0	106,3	107,2	8,3
Netherlands	415	105,0	105,8	106,1	106,2	10,2
New Zealand	538	69,1	88,1	78,1	85,8	7,2
Poland	66	107,0	98,6	104,6	100,7	6,9
Slovenia	20	99,2	83,8	88,4	83,1	9,1
USA	2045	108,8	116,2	109,0	113,0	10,3

Table 4. Genetic level for yield traits, Jersey. Bulls born in 2019 or later.

Country	No. of bulls	Milkindex	Fatindex	Proteinindex	Y-index	Y-index STD
Australia	20	105,5	88,8	95,5	88,1	6,5
Canada	21	102,8	91,5	94,4	90,0	13,6
DNK/FIN/SWE	64	100,2	103,5	103,7	104,7	8,4
New Zealand	328	96,0	92,1	94,5	92,6	7,6
USA	363	116,1	105,0	110,9	105,5	11,4

Conformation

The international genetic evaluation is done for 16 linear traits for Holstein, Red breeds and Jersey. In addition, frame, body condition score and locomotion are included in this trait group.

Breeding values for frame

EBV for frame is calculated from the 6 linear traits that are part of the international genetic evaluation. The composite NAV breeding value for frame also includes topline. There is no international genetic evaluation of topline.

We calculate international breeding value for frame based on a regression of NAV breeding values for the 6 linear international traits on NAV EBV for frame for Danish, Swedish and Finnish bulls born in 2015-2018. The estimated regression coefficients are used to calculate international breeding value for frame for foreign bulls. This method is used to ensure the same relative weight between traits in NAV and international composite traits.

Breeding values for feet and legs

EBV for feet and legs is calculated from the 3 linear traits that are part of the international genetic evaluation. The composite NAV breeding values for feet and legs also include hock quality and bone quality. There is no international genetic evaluation for these two traits.

We calculate international breeding value for feet and legs based on a regression of NAV breeding values for the 3 linear international traits on NAV EBV for feet and legs for Danish, Swedish and Finnish bulls born in 2015-2018. The estimated regression coefficients are used to calculate international breeding value for feet and legs for foreign bulls.

Breeding values for udder

The international genetic evaluation for udder includes 7 traits. The Nordic genetic evaluation for udder also includes teat thickness and udder balance. There is no international evaluation for these two traits.

We calculate international breeding value for udder based on a regression of NAV breeding values for the 7 linear international traits on NAV EBV for udder for Danish, Swedish and Finnish bulls born in 2015-2018. For Holstein the non Interbull traits Rear udder Width, Udder balance and Teat thickness are estimated from the 7 seven linear Interbull udder traits. For RDC and Jersey the estimated regression coefficients are used to calculate international breeding value for udder for foreign bulls.

Genetic level of composite conformation traits

In tables 5-7 is a comparison of genetic level of composite conformation traits for bulls from different countries. The calculation includes bulls that have at least 25 daughters in genetic evaluation.

Table 5. Genetic level for conformation traits, Red breeds. Bulls born in 2019 or later.

Country	No. of bulls	Frame		Feet&legs		Udder	
		Average	STD	Average	STD	Average	STD
Canada	19	101,6	6,9	104,2	4,6	101,1	5,9
Germany	12	106,9	5,1	104,3	3,5	106,6	8,7
DNK/FIN/SWE	117	96,5	8,9	103,0	6,1	102,4	6,7
Norway	105	97,0	8,9	101,3	6,9	87,6	9,2
New Zealand	12	91,6	10,3			93,1	7,5

Table 6. Genetic level of conformation traits, Holstein. Bulls born in 2019 or later.

		Frame		Feet&legs		Udder	
Country	No	Average	STD	Average	STD	Average	STD
Australia	17	112,8	10,3	99,1	4,7	101,0	7,9
Belgium	10	109,1	6,8	108,4	5,2	102,1	6,9
Canada	270	112,4	11,0	99,5	5,7	106,0	9,4
Switzerland	80	109,8	8,4	99,7	5,3	110,2	8,7
Czech Republic	41	107,0	7,5	100,3	5,4	96,9	8,5
Germany	647	104,6	8,9	101,8	5,0	103,9	8,5
DNK/FIN/SWE	162	98,0	9,2	100,8	5,8	102,3	8,6
Spain	62	109,4	9,2	100,6	5,7	107,2	10,3
France	245	113,8	8,7	103,4	5,2	110,6	8,5
UK	31	100,6	11,4	99,8	5,3	101,5	7,6
Ireland	7	86,0	10,1	98,9	3,3	68,7	7,7
Italy	108	108,8	9,2	98,5	4,7	102,0	9,1
Japan	230	108,9	8,2	97,6	4,9	98,8	9,1
Netherlands	316	105,9	10,0	107,8	7,1	98,8	10,3
New Zealand	543	84,5	9,6			87,5	7,9
Poland	59	109,5	12,9	103,2	4,8	100,4	9,1
Slovenia	21	104,2	5,8	99,1	4,7	90,2	10,0
USA	1216	104,8	10,6	99,2	5,4	99,9	8,8

Table 7. Genetic level of conformation traits, Jersey. Bulls born in 2019 or later.

		Frame		Feet&legs		Udder	
Country	No	Average	STD	Average	STD	Average	STD
Australia	10	110,4	8,3	101,6	5,0	92,4	7,1
Canada	25	104,4	9,8	105,5	7,0	102,6	10,3
DNK/FIN/SWE	59	95,8	7,5	96,4	7,5	102,2	9,8
USA	262	102,2	9,0	100,0	7,5	99,8	8,4

Somatic cell count and udder health

Interbull does two international genetic evaluations – one for somatic cell count and one for udder health. In the first one only somatic cell count is included for all countries. NAV sends breeding values for somatic cell count to Interbull, so Nordic bulls get official breeding values for somatic cell count in countries where this trait is official. In the second evaluation breeding values based on mastitis diagnoses are included. NAV's official breeding value for udder health is used. For countries that do not record mastitis diagnoses, somatic cell count is included in this evaluation.

Index for udder health is published in the Nordic countries when reliability is 40% or higher. In tables 8-10 is a comparison of genetic level of udder health for bulls from different countries.

Table 8. Genetic level for udder health, Red breeds. Bulls born in 2019 or later.

Country	No. of bulls	Average	STD
Australia	10	91,5	6,3
Canada	9	87,4	6,5
DNK/FIN/SWE	153	101,4	9,0
Norway	129	100,9	9,1
New Zealand	21	91,7	6,0
USA	5	94,7	5,1

Table 9. Genetic level for udder health, Holstein. Bulls born in 2019 or later.

Country	No. of bulls	Average	STD
Australia	39	99,9	6,0
Belgium	7	98,9	7,4
Canada	176	98,4	9,2
Switzerland	24	98,6	7,2
Czech Republic	49	98,4	9,0
Germany	454	101,0	7,7
DNK/FIN/SWE	149	102,6	6,6
Spain	64	102,8	7,1
France	224	103,6	6,5
UK	31	99,0	5,9
Ireland	10	92,1	5,8
Israel	110	99,7	8,8
Italy	81	102,1	7,3
Japan	171	95,7	7,2
Korea	5	93,8	3,9
Netherlands	209	100,0	7,3
New Zealand	553	93,4	7,9
Poland	72	103,2	8,1
Slovenia	26	94,2	7,5
USA	1154	100,0	8,0

Table 10. Genetic level for udder health, Jersey. Bulls born in 2019 or later.

Country	No. of bulls	Average	STD
Australia	22	90,6	5,8
Canada	8	93,2	7,3
DNK/FIN/SWE	64	101,6	6,6
New Zealand	357	94,3	6,8
USA	166	83,5	8,8

Longevity

In tables 11-13 is a comparison of genetic level of longevity for bulls from different countries. Bulls are included if they have at least 40 daughters in the genetic evaluation.

Table 11. Genetic level for longevity, Red breeds. Bulls born in 2018 or later.

Country	No. of bulls	Average	STD
Australia	6	82,9	17,7
Canada	12	80,5	6,6
Germany	11	96,7	10,1
DNK/FIN/SWE	74	101,2	11,3
Norge	88	90,9	8,0

Table 12. Genetic level for longevity, Holstein. Bulls born in 2018 or later.

Country	No. of bulls	Average	STD
Australia	33	99,3	7,4
Austria	6	103,2	7,3
Belgium	12	102,4	8,4
Canada	242	99,2	9,5
Switzerland	67	99,2	7,0
Czech Republic	42	108,6	5,8
Germany	618	107,0	8,4
DNK/FIN/SWE	118	103,8	7,8
Spain	13	102,1	5,6
France	181	100,0	7,1
UK	29	99,3	11,1
Ireland	11	88,0	5,4
Israel	98	95,2	5,4
Italy	58	103,3	6,5
Netherlands	381	104,4	8,1
New Zealand	335	83,6	5,6
Poland	43	99,1	8,3
Slovenia	25	93,0	9,8
USA	1530	104,2	8,2

Table 13. Genetic level for longevity, Jersey. Bulls born in 2018 or later.

Country	No. of bulls	Average	STD
Australia	24	95,7	5,1
Canada	23	93,3	6,4
DNK/FIN/SWE	61	100,5	7,6
Netherlands	5	96,0	5,9
New Zealand	160	88,2	6,2
USA	371	99,6	6,4

Calving – maternal and direct

For Red breeds Canada, Denmark, Finland, Norway, Sweden and The United States send data to this evaluation. It has not been possible to obtain enough high correlations between countries for still birth, so the international evaluation only includes calving ease (maternal and direct) for Red breeds.

In the Holstein group there are international breeding values for both still birth (maternal and direct) and calving ease (maternal and direct), but only for first lactation. In the Nordic countries also, information from later lactations and from birth weight is included in calving, maternal and calving, direct.

We have calculated international indices for calving, maternal and calving, direct by performing a regression between NAV breeding values for still birth and calving ease and NAV breeding value for calving for Nordic bulls born in 2008-2012. The calculated regression coefficients are used to calculate a calving index for foreign bulls - same method is used for calving, maternal and calving, direct.

In Tables 14 and 15 the average genetic level for Red breed and Holstein bulls is shown for different countries. Only bulls born in 2019 or later are included. Bulls need to have breeding values for yield to be included.

Table 14. Genetic level for calving, maternal and calving, direct, Red breeds. Bulls born in 2019 or later.

Country	Calving, direct			Calving, maternal		
	No. of bulls	Average	STD	No. of bulls	Average	STD
Canada	19	94,7	6,3	9,0	99,7	6,7
DNK/FIN/SWE	134	101,3	6,8	115	100,3	5,5
Norway	126	100,1	8,9	125	91,2	6,8

Table 15. Genetic level for calving, maternal and calving, direct, Holstein. Bulls born in 2019 or later.

Country	Calving, direct			Calving, maternal		
	No. of bulls	Average	STD	No. of bulls	Average	STD
Australia	44	98,8	5,3	2	101,0	7,1
Austria	7	97,3	7,6	5	101,6	6,1
Belgium	16	98,8	7,6	13	101,4	4,8
Canada	295	98,5	5,8	229	101,1	5,4
Switzerland	44	99,2	5,3	46	100,8	6,0
Germany	720	99,9	5,4	660	100,7	5,7
DNK/FIN/SWE	180	100,8	5,0	169	101,3	4,6
Spain	32	100,3	6,1	7	99,7	3,1
France	307	97,7	5,6	295	106,2	5,9
UK	31	101,1	4,0	23	101,2	4,0
Israel	76	97,5	4,7	113	93,0	6,3
Italy	84	98,0	4,8	78	101,4	4,5
Netherlands	412	99,4	5,3	361	98,6	7,3
New Zealand	5	101,4	1,7	0		
Poland	83	97,3	4,9	56	95,5	6,1
USA	2112	100,4	4,8	1457	103,0	4,5

Female fertility

NAV calculates breeding values for female fertility based on linear regression between NAV breeding values for female fertility and NAV breeding values for the sub-indices in female fertility. Basis for the regressions are Nordic bulls born in 2003-2007 – see more information below. The estimated

regression coefficients are used to calculate international breeding value for female fertility for foreign bulls.

In practice 3 regressions are calculated with different explaining variables (Jersey only 2 and 3):
1: Female fertility = Ability to conceive (R^2, HOL = 0,05) (R^2, Red breeds = 0,35)
2: Female fertility = Days open (R^2, HOL = 0,87) (R^2, Red breeds = 0,85) (R^2, Jer = 0,87)
3: Female fertility = Ability to return to recycle after calving + ability to conceive + Days open (R^2, HOL = 0,96) (R^2, Red breeds = 0,94), (R^2, Jer = 0,94).

R^2 (degree of explanation) indicates the proportion of the variance of the index for female fertility, that the traits in the regression can explain. Since the regression is used on foreign bulls, and the genetic correlations between international and NAV traits are not 1, the observed degree of explanation will be lower.

For each foreign bull we use the regression with the greatest explanatory power given the international sub-indices that are available. The degree of explanation therefore depends largely of the traits being available from the different countries.

Table 16. Genetic level for female fertility, Red breeds. Bulls born in 2019 or later.

Country	No. of bulls	Average	STD
Australia	7	94,7	9,9
Canada	12	90,2	9,9
Germany	9	93,0	12,4
DNK/FIN/SWE	122	101,8	9,2
UK	5	95,8	4,1
Norway	111	112,2	6,6
New Zealand	7	95,6	6,2

Table 17. Genetic level for female fertility, Holstein. Bulls born in 2019 or later.

Country	No. of bulls	Average	STD
Australia	32	99,9	6,1
Belgium	12	90,9	7,9
Canada	249	94,7	8,3
Switzerland	72	97,1	3,7
Czech Republic	38	95,9	5,0
Germany	586	98,2	9,3
DNK/FIN/SWE	172	103,8	9,9
Spain	22	95,1	8,1
France	215	98,6	8,0
UK	32	101,5	9,9
Ireland	13	101,1	4,6
Israel	98	96,0	2,2
Italy	96	96,8	9,0
Japan	15	86,7	6,2
Netherlands	382	94,3	9,7
New Zealand	356	99,0	4,7
Poland	25	95,0	6,8
USA	1581	96,4	7,7

Table 18. Genetic level for female fertility, Jersey. Bulls born in 2019 or later.

Country	No. of bulls	Average	STD
Australia	17	91,2	5,9
Canada	21	91,9	8,6
DNK/FIN/SWE	72	103,8	12,6
New Zealand	220	99,0	7,0
USA	277	99,3	9,3

Milking speed and temperament

In Tables 19-21, the genetic level for bulls from different countries, born in 2019 or later are shown for Holstein, Red breeds and Jersey.

Table 19. Genetic level for milking speed and temperament, Red breeds. Bulls born in 2019 or later.

Country	Milking speed			Temperament		
	No. of bulls	Average	STD	No. of bulls	Average	STD
Canada	15	90,6	16,0	15	92,6	13,6
Germany	10	102,3	5,5	12	105,6	4,8
DNK/FIN/SWE	157	98,9	7,5	122	100,2	11,2
Norway	109	93,9	3,7	105	99,9	5,2

Table 20. Genetic level for milking speed and temperament, Holstein. Bulls born in 2019 or later.

Country	Milking speed			Temperament		
	No. of bulls	Average	STD	No. of bulls	Average	STD
Australia	14	100,2	6,8	14	105,4	7,7
Austria	7	88,3	8,2			
Belgium	9	94,1	9,7	8	103,8	9,6
Canada	211	97,9	12,0	202	103,5	12,8
Switzerland	82	97,5	9,4	81	102,7	9,3
Germany	514	92,8	8,5	390	101,4	17,3
DNK/FIN/SWE	75	98,9	11,0	127	100,2	16,4
France	236	92,1	10,4	235	103,9	11,1
UK	32	96,9	16,5	32	102,2	12,8
Italy	86	92,3	4,7	85	102,0	12,6
Netherlands	337	91,2	7,1	232	101,9	12,7
New Zealand	549	101,8	4,4	549	97,8	2,9
Slovenia	27	93,8	7,4			
USA	522	99,0	13,0	499	103,4	15,6

Table 21. Genetic level for milking speed, Jersey. Bulls born in 2019 or later.

Country	No. of bulls	Average	STD
Australien	12	105,6	6,5
Canada	23	97,6	9,3
DNK/FIN/SWE	63	99,3	9,2
New Zealand	319	100,5	6,4
USA	19	102,6	9,8

NTM for Nordic and foreign bulls

NTM index is calculated for all bulls (Nordic and others) that have official breeding values (NAV breeding values or international EBVs) for yield, udder health and conformation.

Interbull NTM is calculated by weighing the Interbull / NAV breeding values for yield, female fertility, calving (maternal and direct), udder health, longevity, feet&legs, udder, milking speed and temperament. The same economic weight factors are used as for NAV breeding values.

Rules for calculation of NTM based partly or entirely on international breeding values are stated below in order of priority.

1. **Bull has NAV breeding value for a trait**

If the bull has NAV breeding value for a specific trait, this is used in the calculation of NTM - no matter if the bull also has international breeding value for that trait.

2. **Bull has no NAV breeding value, but has an international breeding value for a trait**

If the bull does not have NAV breeding value for the trait, the international breeding value is used, provided that Interbull calculates international breeding values for that trait and the bull comes from a country which provides data for that trait.

3. **Bull has no NAV or no international breeding value for a trait**

For traits where no Interbull EBV is available or the bull has no Interbull EBV, and at the same time it is not tested in the Nordic countries, a pedigree index is used. Pedigree index is calculated as ½ (EBV_{sire} -100) +1/4 ($EBV_{maternal\ grand\ sire}$-100) +100. The contributions from the sire and maternal grand sire can be based on either NAV breeding values or international breeding values. If EBV_{sire} or $EBV_{maternal\ grand\ sire}$ are unofficial the pedigree index is set to 100.

Publication rules for NTM

All foreign and Nordic bulls that have Interbull breeding values for yield, udder health and udder get a public Interbull NTM. This NTM is calculated with a lower reliability than an NTM for Nordic proven bulls, where information for all traits is always available.

Genetic level for Interbull NTM

In tables 22-24 genetic level for Interbull NTM for Jersey, Red breeds and Holstein are shown. Bulls included are born in 2019 or later.

Table 22. Genetic level for NTM, Red breeds. Bulls born in 2019 or later.

Country	No. of bulls	Average	STD
Canada	11	-25,5	14,1
DNK/FIN/SWE	126	9,9	10,5
Norway	105	-5,8	10,4
New Zealand	10	-24,5	10,5

Table 23. Genetic level for NTM, Holstein. Bulls born in 2019 or later.

Country	No. of bulls	Average	STD
Australia	16	-0,1	8,1
Belgium	9	4,4	7,5
Canada	200	4,9	16,1
Switzerland	47	-2,8	9,7
Czech Republic	40	6,2	6,9
Germany	494	9,4	8,9
DNK/FIN/SWE	159	11,6	8,6
Spain	51	0,9	7,3
France	228	4,1	8,8
UK	31	9,2	11,4
Ireland	6	-25,0	5,8
Italy	83	4,7	8,3
Japan	15	-2,3	5,6
Netherlands	284	5,8	10,5
Poland	61	-0,8	6,7
Slovenia	20	-22,6	10,4
USA	1003	11,9	9,8

Table 24. Genetic level for NTM, Jersey. Bulls born in 2019 or later.

Country	No. of bulls	Average	STD
Australia	10	-16,9	6,0
Canada	15	-12,3	10,5
DNK/FIN/SWE	64	9,1	8,7
USA	168	-3,2	8,2

Changes since last run

In the evaluation in April 2026 the following changes are done compared to December 2025 evaluation:

Yield:

- France (ALL) has applied new MACE coding according to Interbull recommendations. Optimized data processing. Number of daughters, herds and EDC are now calculated directly from the pipeline based on the univariate model without permanent environment effects on single-step preadjusted performances in genomic-free EBVs computation. Before they were still computed from the traditional polygenic approach. Pedigree corrections.
- Germany (ALL) has overall base change, some drops in information due to data edits
- New Zealand (ALL) has decreased in information due to continuous pedigree verification and herd records being updated
- USA (ALL) has decrease in information due to pedigree validation and daughter–herd–year minimum edits.
- Italy (HOL) has changed cut off of data which is causing drops in information and bulls missing in this submission.
- Norway (RDC) has changes in the data extraction pipeline caused many bulls to lose from 1 to 10 daughters, depending on size of the progeny group. The National Herd Recording System is introducing new farmer reporting tools and central storage system. Data extraction pipeline is being modified to cope with this change

Fertility:

- Denmark, Finland and Sweden (ALL) has decrease in information due to data editings
- France (ALL) has applied new MACE coding according to Interbull recommendations. Optimized data processing. Number of daughters, herds and EDC are now calculated directly from the pipeline based on the univariate model without permanent environment effects on single-step preadjusted performances in genomic-free EBVs computation.Before they were still computed from the traditional polygenic approach. Pedigree corrections. Decrease in EDC for a proportion of bulls caused by the different weights applied in the current univariate model without permanent environment effects running on single-step preadjusted performances.
- Germany (ALL) has overall base change, some drops in information due to data edits
- Netherlands (ALL) has decrease in information due to data edits
- New Zealand (ALL) has decrease in information due to continuous pedigree verification and herd records being updated.
- USA (ALL) has decrease in information due to pedigree validation and daughter–herd–year minimum edits. INT (Interval Fertility Trait) Non-linear transformation from days open to pregnancy rate now uses a herd-year-and-lactation-group-specific voluntary waiting period (replacing the fixed 50-day + 20-day grace assumption). Stricter data filters: records with missing calving dates, missing days open, or cases where days open was not predictive were removed. CC1 and HCO Phenotypes Insemination records are now pre-adjusted for mating type, service sire breed, and short cycles. CC1 additionally includes a days-in-milk-at-first-insemination covariable. CC2 new trait: First Service to Conception: FSC has records available from 2003 to present (22 years) rather than the previous traits definitions having 65 years of records, this cause many bulls to be miising in this submission. CC2 model is the same as CC1 including the new days-in-milk-at-first-insemination covariable. Model Structure INT, CC1, HCO, and CC2 are analyzed together in a multi-trait model however a domestic trait (Early First Calving) was moved into a separate model. Variance Components Variance components were re-estimated (heritabilities; genetic and environmental correlations). The environmental correlation between heifer (HCO) and cow traits was set to zero. Data Edits First-lactation cows must be ≥ 3 years old at the evaluation cut-off date to be included. DPR records were removed if the sire of a cow or heifer was unknown (aligns with other reproductive performance traits and other traits). Records belonging to contemporary groups with low observations (i.e., 3) are removed. Computation: Applied stricter convergence criteria when solving the mixed-model equations for the traditional evaluation. Extraction program efficiency improved for all traits.
- Italy (HOL) has changed cut off of data which is causing drops in information and bulls missing in this submission.
- Norway (RDC) has changes in the data extraction pipeline caused many bulls to lose from 1 to 10 daughters, depending on size of the progeny group. The National Herd Recording System is introducing new farmer reporting tools and central storage system. The data extraction pipeline is being modified to cope with this change

Calving:

- France (ALL) has applied new MACE coding according to Interbull recommendations. Optimized data processing. Number of daughters, herds and EDC are now calculated directly from the pipeline based on the univariate model without permanent environment effects on single-step preadjusted performances in genomic-free EBVs computation. Before they were still computed from the traditional polygenic approach. Pedigree corrections affecting especially maternal traits.
- Germany (ALL) has overall base change, some drops in information due to data edits
- Netherlands (ALL) has decrease in information due to data edits. HOL ges: changes in type of proofs to align the coding used for this trait to the other traits in the trait group.
- New Zealand (ALL) has decrease in information due to continues DNA parentage testing and herds updates
- USA (ALL) has decrease in information due to pedigree validation and daughter–herd–year minimum edits.
- Italy (HOL) has changed cut off of data which is causing decrease in information and some bulls missing.
- Norway (RDC) has changes in the data extraction pipeline caused many bulls to lose from 1 to 10 daughters, depending on size of the progeny group. The National Herd Recording System is introducing new farmer reporting tools and central storage system. Data extraction pipeline is being modified to cope with this change

Conformation:

- France (ALL) has applied new MACE coding according to Interbull recommendations. Optimized data processing. Number of daughters, herds and EDC are now calculated directly from the pipeline based on the univariate model without permanent environment effects on single-step preadjusted performances in genomic-free EBVs computation. Before they were still computed from the traditional polygenic approach. Pedigree corrections. HOL FAN: decrease in reliability. It is because now, to be consistent with the official evaluation in France, only phenotypes for FAN trait are taken into account in the evaluation. As consequence, old bulls, which have several daughters without phenotypic information for FAN, lose part of information with an impact on reliability.
- Germany (ALL) has overall base change, some drops in information due to data edits
- Netherlands (ALL) has decrease in information due to data edits
- New Zealand (ALL) has decrease in information due to continuous pedigree verification and herds records being updated
- Italy (HOL) has changed cut off of data which is causing drops in information and bulls missing in this submission.
- USA (HOL) has decrease in information due to data edits and (RDC,JER) have decrease in information due to pedigree validation and daughter–herd–year minimum edits.

Udder health:

- France (ALL) has applied new MACE coding according to Interbull recommendations. Optimized data processing. Number of daughters, herds and EDC are now calculated directly from the pipeline based on the univariate model without permanent environment effects on single-step preadjusted performances in genomic-free EBVs computation. Before they were still computed from the traditional polygenic approach. Pedigree corrections.
- Germany (ALL) has overall base change, some drops in information due to data edits
- New Zealand (ALL) has decrease in information due to continuous pedigree verification and herd records being updated
- USA (ALL) has decrease in information due to pedigree validation and daughter–herd–year minimum edits.
- Italy (HOL) has changed cut off of data which is causing drops in information and bulls missing in this submission.

- Norway (RDC) has changes in the data extraction pipeline caused many bulls to loose from 1 to 10 daughters, depending on size of the progeny group.The National Herd Recording System is introducing new farmer reporting tools and central storage system. Data extraction pipeline is being modified to cope with this change

Longevity:
- Denmark, Finland and Sweden (ALL) has drops in information due to data edits
- France (ALL) has applied new MACE coding according to Interbull recommendations. Optimized data processing. Number of daughters, herds and EDC are now calculated directly from the pipeline based on the univariate model without permanent environment effects on single-step preadjusted performances in genomic-free EBVs computation. Before they were still computed from the traditional polygenic approach. Pedigree corrections. Decrease in EDC for a proportion of bulls caused by the different weights applied in the current univariate model without permanent environment effects running on single-step preadjusted performances.
- Germany (ALL) has overall base change, some drops in information due to data edits
- New Zealand (ALL) has decrease in information due to continuous pedigree verification and herd records being updated
- USA (ALL) has decrease in information due to pedigree validation and daughter–herd–year minimum edits.
- Italy (HOL) has changed cut off of data which is causing drops in information and bulls missing in this submission.

Milking speed and temperament:
- France (ALL) has applied new MACE coding according to Interbull recommendations. Optimized data processing. Number of daughters, herds and EDC are now calculated directly from the pipeline based on the univariate model without permanent environment effects on single-step preadjusted performances in genomic-free EBVs computation. Before they were still computed from the traditional polygenic approach. Pedigree corrections.
- Germany (ALL) has overall base change, some drops in information due to data edits
- Netherlands (ALL) has for milking speed decrease in information due to data edits and for temperament decrease in reliability due to data edits
- New Zealand (ALL) has decrease in information due to continuous pedigree verification and herd records being updated
- Italy (HOL) has changed cut off of data which is causing drops in information and bulls missing in this submission.
- Norway (RDC) has changes in the data extraction pipeline caused many bulls to loose from 1 to 10 daughters, depending on size of the progeny group.The National Herd Recording System is introducing new farmer reporting tools and central storage system. Data extraction pipeline is being modified to cope with this change

Genomic tested young Holstein bulls

In the tables below, only Holstein sires that have breeding values based on genomic information and no daughters is shown.

Averages are only shown for countries with more than 20 bulls.

Yield

In tables 25 is a comparison of the genetic level of yield for bulls from different countries.

Table 25. Genetic level for yield traits, Holstein. Bulls born in 2023 or later.

Country	No. of bulls	Milkindex	Fatindex	Proteinindex	Y-index	Y-index STD
Australia	41	98,0	101,4	96,8	99,1	10,0
Belgium	17	116,6	119,2	119,9	120,4	7,6
Canada	417	110,1	120,1	111,3	116,5	11,4
Switzerland	12	108,6	107,8	106,8	106,9	7,6
Czech Republic	21	115,9	117,6	116,1	117,0	8,7
Germany	424	117,6	116,1	117,9	117,0	7,0
DNK/FIN/SWE	121	104,7	121,4	117,5	122,9	6,2
Spain	48	118,9	111,6	114,1	111,6	11,4
France	322	112,8	109,1	113,0	110,9	7,6
UK	26	112,6	124,3	116,0	121,5	6,4
Hungary	16	111,2	102,3	107,7	103,8	6,1
Italy	55	115,5	113,2	116,3	114,7	9,7
Netherlands	370	112,2	113,5	115	114,9	8,1
New Zealand	6	69,8	91,8	80,5	89,5	9,9
Poland	65	115	116,2	115,9	116,3	6,8
USA	1633	112,8	127,4	117,5	124,1	7,8

Conformation

The international genetic evaluation is done for 16 linear traits for Holstein. In addition, frame condition score and locomotion are included in this trait group.

Calculation of frame, feet&legs and udder follows same principles as for daughter proven bulls.

In tables 26 is a comparison of genetic level of composite conformation traits for bulls from different countries.

Table 26. Genetic level of conformation traits, Holstein. Bulls born in 2023 or later.

		Frame		Feet&legs		Udder	
Country	No	Average	STD	Average	STD	Average	STD
Australia	9	115,0	9,1	101,7	2,2	107,2	5,1
Belgium	17	106,8	8,8	107,0	5,4	104,1	6,4
Canada	416	112,1	11,4	101,0	4,6	104,2	9,5
Switzerland	12	116,8	7,1	105,3	4,7	112,3	7,6
Czech Republic	6	108,5	4,3	104,5	6,7	101,2	4,1
Germany	424	106,6	8,5	104,1	4,7	108,4	7,8
DNK/FIN/SWE	120	100,3	9,6	102,1	4,3	105,6	6,8
Spain	48	117,4	13	104,0	4,3	106,8	10,2
France	322	115,2	9,0	106,0	4,3	113,8	7,9
UK	26	100,8	7,8	99,3	4,0	96,3	5,9
Hungary	16	106,9	6,4	101,6	3,1	103,3	7,8
Italy	55	112,7	8,2	101,1	4,3	107,8	8,3
Netherlands	370	106,6	9,9	109,1	6,0	104,0	8,2
Poland	65	107,6	7,9	103,5	4,6	108,3	8,7

Somatic cell count and udder health

In tables 27 is a comparison of genetic level of udder health for bulls from different countries.

Table 27. Genetic level for udder health, Holstein. Bulls born in 2023 or later.

Country	No. of bulls	Average	STD
Australia	8	98,2	3,2
Belgium	17	105,1	6,3
Canada	416	99,4	4,6
Switzerland	11	100,1	3,0
Czech Republic	6	103,3	7,0
Germany	424	104,3	6,0
DNK/FIN/SWE	119	104,8	5,5
Spain	48	102,4	7,1
France	320	106,4	6,0
UK	26	99,5	5,8
Hungary	16	98,8	7,7
Italy	55	102,5	6,1
Netherlands	367	103,6	6,6
Poland	65	105,7	6,9
USA	1629	99,4	5,2

Longevity

In tables 28 is a comparison of genetic level of longevity for bulls from different countries.

Table 28. Genetic level for longevity, Holstein. Bulls born in 2023 or later.

Country	No. of bulls	Average	STD
Australia	9	97,8	4,5
Belgium	17	112,9	6,6
Canada	416	105,6	5,6
Switzerland	12	109,6	7,0
Czech Republic	6	108,3	9,2
Germany	424	115,2	5,6
DNK/FIN/SWE	118	109,6	5,1
Spain	48	106,1	8,7
France	320	109,7	5,7
UK	26	106,7	5,3
Hungary	16	102,9	5,3
Italy	55	107,4	6,0
Netherlands	370	111,9	6,9
Poland	65	109,6	5,2
USA	1633	106,8	4,8

Calving – maternal and direct

In Tables 29 the average genetic level for bulls is shown for different countries.

Table 29. Genetic level for calving, maternal and calving, direct, HOL. Bulls born in 2023 or later.

Country	Calving, direct			Calving, maternal		
	No. of bulls	Average	STD	No. of bulls	Average	STD
Australia	8	96,5	3,3	8	103,9	3,6
Belgium	17	101,3	3,1	17	103,1	4,8
Canada	413	98,8	3,9	416	101,6	4,8
Switzerland	12	97,8	4,5	12	102	4,3
Czech Republic	5	100,4	2,1	5	103,4	5,3
Germany	410	100,8	3,5	424	103,1	4,5
DNK/FIN/SWE	106	100,2	4,0	119	102,6	5,0
Spain	48	98,2	4,5	48	101,9	4,9
France	308	98,4	3,6	308	103,1	4,7
UK	26	99,3	4,3	26	103,3	2,8
Hungary	16	97,9	2,7	16	100,4	3,3
Italy	55	99,2	3,3	55	102,7	4,4
Netherlands	363	100,9	3,6	367	101,9	4,8
Poland	65	99,7	3,4	65	103,1	4,5
USA	1605	100,6	3,5	1629	103,5	3,6

Female fertility

In Tables 30 the average genetic level for bulls is shown for different countries.

Table 30. Genetic level for female fertility, Holstein. Bulls born in 2023 or later.

Country	No. of bulls	Average	STD
Australia	9	99,4	6,6
Belgium	17	104,6	8,7
Canada	412	99,4	7,2
Switzerland	12	98,9	6,9
Czech Republic	5	98,2	10,2
Germany	419	104,8	7,5
DNK/FIN/SWE	118	107,5	8,0
Spain	48	99,6	9,2
France	304	104,4	7,5
UK	21	101,8	4,8
Italy	54	101,0	7,7
Netherlands	366	102,2	7,8
Poland	65	103,6	6,7
USA	1242	101,4	5,4

Milking speed and temperament

In Tables 31, the genetic level for bulls from different countries.

Table 31. Genetic level for milking speed and temperament, Holstein. Bulls born in 2023 or later.

Country	Milking speed			Temperament		
	No. of bulls	Average	STD	No. of bulls	Average	STD
Australia	9	100,4	11,6	8	106,3	2,3
Belgium	17	96,4	2,5	17	106,4	3,5
Canada	412	100,2	4,8	369	105,0	7,2
Switzerland	12	92,3	2,6			
Czech Republic	5	87,4	3,6			
Germany	420	97,0	2,7	413	104,3	4,4
DNK/FIN/SWE	116	101,3	15,7	121	104,3	4,3
Spain	48	95,2	3,3	46	104,1	5,5
France	320	95,1	3,3	304	107,7	3,5
UK	21	98,6	3,6	17	103,0	1,7
Italy	54	94,4	5,9	54	106,3	10,2
Netherlands	366	94,7	4,7	356	103,3	5,3
Poland	65	91,5	5,1	65	103,9	4,5
USA	1287	102,8	3,2	1187	104	5,7

Changes since last run
In the evaluation in August 2026 the following changes are done compared to April 2026 evaluation:

Yield:
- France (HOL) has drop in reliability due to pedigree updates

Fertility:
- France (HOL) has drop in reliability due to pedigree updates

Calving:
- Canada (HOL) has for dce drop in reliability for some foreign bulls due to the impact of MACE
- DFS (HOL) has used MACE data for "dce"
- ITA (HOL) has for dce drop in reliability due to pedigree correction and data edit

Conformation:
- France (HOL) has drop in reliability due to pedigree updates

Udder health:
- France (HOL) has drop in reliability due to pedigree updates

Longevity:
- France (HOL) has drop in reliability due to pedigree updates

Milking speed and temperament:
- Denmark, Finland and Sweden (HOL) has for temperament drop in reliability due to the handling way of foreign bulls in single-step prodecure and when the bulls get Noridc daughters.
- France (HOL) has drop in reliability due to pedigree updates

Dates of publication of Interbull breeding values in 2026 and 2027:

Month	Date
August	11
December	1
April	6
August	10
December	7

The indices can be found at the national databases in Denmark, Sweden, and Finland 2-3 days after they have been published by Interbull.

Regards
Andreas Bøgh Poulsen, Jakob Lykke Voergaard, Ida Hansson, Terhi Vahlsten and Martha Bo Almskou