

INTRODUCTION

The latest routine international evaluation for calving traits took place as scheduled at the Interbull Centre. Data from eighteen (18) countries were included in this evaluation.

International genetic evaluations for calving traits of bulls from Australia, Austria-Germany, Belgium, Canada, Denmark-Finland-Sweden, France, Germany, Hungary, Ireland, Israel, Italy, Netherlands, Norway, Japan, Spain, Switzerland, the United Kingdom, Slovak Republic, Poland and the United States of America were computed. Brown Swiss, Holstein, and Red Dairy Cattle breed data were included in this evaluation.

CHANGES IN NATIONAL PROCEDURES

Changes in the national genetic evaluation of calving traits are as follows:

BEL (HOL) Drop in daughters, herds, EDC and reliabilities due to corrections in pedigree.
Some bulls changed from official to unofficial because not longer reach the national threshold.

CHE (ALL) Change in number of herds, EDC and reliabilities due to manual data edits and hYS assignment.

DEU (HOL) Overall base change. From this routine run onwards cow base is adjusted with each routine run, four months (birth month) forwards.

DFS (HOL, JER, RDC) Drop in EDC mostly cause by rounding effect.

ESP (HOL) Base changed.
Drop in information due to new checks in data editing.
Some bulls lost official status because didn't reach the threshold of daughters

FRA (HOL) Drop in information due to the pedigree update.

ITA (HOL) Drop in information due to changes in the input data.
Increase in the threshold of reliability and daughters per herd meant that many bulls no longer achieved the requirements for submission.

JPN (HOL) Changes in EDC due to pedigree editing.

NLD (ALL) Drop in information due to pedigree corrections.

POL (HOL) The Polish Federation of Cattle Breeders and Milk Producers replaced the milk recording system SYMLEK by the FEDINFO system.
Due to this change, a marginal number of animals have been assigned to a native breed instead of Holstein-Friesian.
These bulls were removed from the evaluation.
Drop in information due to data editing.

USA (ALL) Drop in information due to pedigree corrections and herd-year edits.

INTERBULL CHANGES COMPARED TO THE PREVIOUS ROUTINE RUN

In 2020 new post-processing windowsâ\200\231 correlations for all breeds and traits have been applied: the upper bounds have been set to 0.99 as these were judged to have very little effect on evaluations while the lower values have been reduced to the 10th percentile. This reduction would provide post-processed correlations to be closer to the real estimated ones. The previously lower value adopted (based on the 25th percentile) had been found too high causing estimated and post-processed correlations to differ significantly from each other. It is a recommendation from the Interbull Technical Committee to review such windows every 5 years. The weight assigned to the magnitude of the changes tested by each country has also been revised. The new weight will allow post-processed correlations to take more in consideration the value of the new estimated ones even when no changes are applied by the countries. More information can be read on https://interbull.org/ib/rg_procedure

Since 2021 a new trait group has been added to the MACE evaluation, called stcm (SNP Training for clinical mastitis) evaluating the trait cma (pure clinical mastitis). New trait group codes have been issued as follows: 041 for international ebv files (.itb), 071 for parent average (ipr).

DATA AND METHOD OF ANALYSIS

Data were national genetic evaluations of AI sampled bulls with at least 10 daughters or 10 EDC (for clinical mastitis and maternal calving traits at least 50 daughters or 50 EDC, and for direct calving traits at least 50 calvings or 50 EDC) in at least 10 herds. Table 1 presents the amount of data included in this Interbull evaluation for all breeds.

National proofs were first de-regressed within country and then analysed jointly with a linear model including the effects of evaluation country, genetic group of bull and bull merit. Heritability estimates used in both the de-regression and international evaluation were as in each country's national evaluation.

Table 2 presents the date of evaluation as supplied by each country

Estimated genetic parameters and sire standard deviations are shown in APPENDIX I and the corresponding number of common bulls are listed in APPENDIX II.

SCIENTIFIC LITERATURE

The international genetic evaluation procedure is based on international work described in the following scientific publications:

International genetic evaluation computation:
Schaeffer. 1994. J. Dairy Sci. 77:2671-2678
Klei, 1998. Interbull Bulletin 17:3-7

Verification and Genetic trend validation:
Klei et al., 2002. Interbull Bulletin 29:178-182.
Boichard et al., 1995. J. Dairy Sci. 78:431-437

Weighting factors:
Fikse and Banos, 2001. J. Dairy Sci. 84:1759-1767

De-regression:
Sigurdsson and G. Banos. 1995. Acta Agric. Scand. 45:207-219
Jairath et al. 1998. J. Dairy Sci. Vol. 81:550-562

Genetic parameter estimation:
Klei and Weigel, 1998, Interbull Bulletin 17:8-14
Sullivan, 1999. Interbull Bulletin 22:146-148

Post-processing of estimated genetic correlations:
Mark et al., 2003, Interbull Bulletin 30:126-135
Jorjani et al., 2003. J. Dairy Sci. 86:677-679
<https://wiki.interbull.org/public/rG%20procedure?action=print>

Time edits
Weigel and Banos. 1997. J. Dairy Sci. 80:3425-3430

International reliability estimation
Harris and Johnson. 1998. Interbull Bulletin 17:31-36

NEXT ROUTINE INTERNATIONAL EVALUATION

Dates for the next routine evaluation can be found on
<http://www.interbull.org/ib/servicecalendar>.

NEXT TEST INTERNATIONAL EVALUATION

Dates for the next test run can be found on
<http://www.interbull.org/ib/servicecalendar>.

PUBLICATION OF INTERBULL ROUTINE RUN

Results were distributed by the Interbull Centre to designated representatives in each country. The international evaluation file comprised international proofs expressed on the base and unit of each country included in the analysis. Such records readily provide more information on bull performance in various countries, thereby minimizing the need to resort to conversions.

At the same time, all recipients of Interbull results are expected to honor the agreed code of practice, decided by the Interbull Steering Committee, and only publish international evaluations on their own country scale. Evaluations expressed on another country scale are confidential and may only be used internally for research and review purposes.

PUBLICATION OF INTERBULL TEST RUN

Test evaluation results are meant for review purposes only and should not be published.

^LTable 1. National evaluation data considered in the Interbull evaluation for calving (August Routine Evaluation 2024).
Number of records for direct calving ease by breed

Country	BSW	GUE	HOL	JER	RDC	SIM
AUS			6805			
BEL			1333			
CAN	172		13756		544	
CHE	1736		2318			
CZE						
DEA	3732					
DEU			20946		311	
DFS			11481		6751	
ESP			2488			
EST						
FRA	417		13578			
FRM						
GBR			3385			
HUN			1765			
IRL			2478		64	
ISR			638			
ITA			8708			
JPN			4785			
KOR						
LTU						
LVA						
NLD	193		15937		87	
NOR					4033	
NZL						
POL			7592			
PRT						
SVK			739			
SVN						
URY						
USA	573		38141			
ZAF						
HRV						
CAM						
=====						
No. Records	6823		156873		11790	
Pub. Proofs	7122	0	132922	0	12134	0

^LAPPENDIX I. Sire standard deviations in diagonal and genetic correlations below diagonal

BSW	dce					
	DEA	NLD	USA	CHE	CAN	FRA
DEA	9.30					
NLD	0.82	5.64				
USA	0.63	0.84	0.13			
CHE	0.85	0.93	0.80	10.61		
CAN	0.78	0.94	0.90	0.92	7.71	
FRA	0.67	0.75	0.74	0.73	0.78	0.52

BSW	mce					
	DEA	NLD	USA	CHE	CAN	FRA

DEA	9.71																	
NLD	0.61	4.62																
USA	0.69	0.76	0.15															
CHE	0.69	0.70	0.84	13.13														
CAN	0.33	0.74	0.84	0.70	5.87													
FRA	0.82	0.74	0.78	0.87	0.69	0.78												

HOL	dce																	
	AUS	CAN	CHE	DFS	FRA	ISR	ITA	NLD	USA	GBR	HUN	DEU	BEL	IRL	SVK	ESP	POL	JPN
AUS	0.04																	
CAN	0.75	7.65																
CHE	0.73	0.93	8.88															
DFS	0.71	0.92	0.84	11.17														
FRA	0.71	0.86	0.84	0.79	0.73													
ISR	0.71	0.83	0.66	0.85	0.71	2.67												
ITA	0.37	0.45	0.51	0.46	0.41	0.49	4.29											
NLD	0.82	0.97	0.91	0.93	0.83	0.84	0.45	7.25										
USA	0.71	0.91	0.88	0.85	0.84	0.81	0.46	0.87	0.12									
GBR	0.71	0.80	0.68	0.70	0.66	0.68	0.30	0.82	0.67	6.21								
HUN	0.45	0.54	0.47	0.39	0.49	0.55	0.22	0.54	0.51	0.48	1.26							
DEU	0.79	0.94	0.90	0.89	0.86	0.80	0.40	0.93	0.86	0.75	0.56	12.41						
BEL	0.55	0.59	0.67	0.64	0.63	0.46	0.32	0.65	0.63	0.39	0.52	0.59	8.86					
IRL	0.75	0.84	0.82	0.81	0.78	0.78	0.36	0.88	0.81	0.62	0.45	0.79	0.55	0.09				
SVK	0.39	0.23	0.23	0.22	0.20	0.25	0.20	0.22	0.22	0.23	0.26	0.21	0.24	0.24	13.19			
ESP	0.59	0.85	0.82	0.71	0.79	0.64	0.42	0.82	0.80	0.55	0.55	0.83	0.58	0.74	0.20	11.64		
POL	0.39	0.48	0.45	0.50	0.41	0.43	0.18	0.44	0.44	0.38	0.22	0.44	0.30	0.49	0.23	0.26	14.25	
JPN	0.77	0.84	0.82	0.79	0.77	0.78	0.59	0.84	0.80	0.69	0.65	0.80	0.68	0.76	0.57	0.72	0.60	2.67

HOL	mce																	
	CAN	CHE	DFS	FRA	ISR	ITA	NLD	USA	GBR	HUN	DEU	BEL	SVK	ESP	POL	JPN		
CAN	7.65																	
CHE	0.83	11.52																
DFS	0.83	0.67	11.53															
FRA	0.76	0.78	0.81	0.99														
ISR	0.84	0.66	0.79	0.69	2.60													
ITA	0.30	0.23	0.41	0.39	0.46	7.13												
NLD	0.78	0.70	0.78	0.77	0.74	0.42	4.78											
USA	0.92	0.89	0.77	0.76	0.86	0.28	0.76	0.15										
GBR	0.43	0.46	0.38	0.59	0.40	0.21	0.47	0.44	5.96									
HUN	0.37	0.31	0.37	0.33	0.45	0.22	0.37	0.36	0.27	1.28								
DEU	0.85	0.70	0.90	0.81	0.78	0.42	0.82	0.80	0.45	0.42	12.23							
BEL	0.64	0.67	0.66	0.69	0.53	0.32	0.76	0.65	0.42	0.41	0.70	9.80						
SVK	0.24	0.27	0.24	0.23	0.36	0.23	0.22	0.23	0.41	0.25	0.23	0.41	15.60					
ESP	0.78	0.62	0.85	0.75	0.76	0.34	0.79	0.71	0.35	0.49	0.87	0.65	0.25	12.22				
POL	0.49	0.41	0.52	0.44	0.45	0.31	0.43	0.49	0.23	0.26	0.54	0.46	0.24	0.42	15.46			
JPN	0.77	0.71	0.77	0.78	0.80	0.59	0.77	0.76	0.64	0.60	0.81	0.76	0.59	0.75	0.63	1.72		

HOL	dsb																	
	AUS	CAN	CHE	DFS	FRA	ISR	ITA	NLD	USA	HUN	DEU	POL	JPN					
AUS	0.04																	
CAN	0.61	8.21																
CHE	0.21	0.67	17.44															
DFS	0.64	0.88	0.65	11.13														
FRA	0.27	0.61	0.55	0.55	0.61													
ISR	0.79	0.70	0.33	0.69	0.34	1.61												
ITA	0.42	0.55	0.48	0.50	0.38	0.51	6.81											
NLD	0.32	0.79	0.75	0.72	0.58	0.44	0.48	4.57										
USA	0.35	0.73	0.65	0.63	0.59	0.39	0.41	0.61	0.07									
HUN	0.59	0.42	0.18	0.43	0.17	0.65	0.32	0.19	0.26	1.10								
DEU	0.52	0.92	0.75	0.86	0.56	0.63	0.55	0.83	0.68	0.44	12.11							
POL	0.33	0.59	0.59	0.61	0.39	0.39	0.35	0.56	0.48	0.17	0.62	16.42						
JPN	0.69	0.86	0.71	0.83	0.67	0.76	0.69	0.72	0.72	0.63	0.85	0.67	1.55					

HOL	msb											
	CAN	CHE	DFS	FRA	ISR	ITA	NLD	USA	HUN	DEU	POL	JPN
CAN	6.39											
CHE	0.79	16.42										
DFS	0.95	0.76	10.49									
FRA	0.81	0.75	0.84	0.79								
ISR	0.88	0.72	0.86	0.68	1.70							
ITA	0.66	0.50	0.69	0.61	0.64	6.56						
NLD	0.93	0.75	0.95	0.79	0.84	0.72	4.39					
USA	0.88	0.81	0.85	0.77	0.82	0.55	0.77	0.12				
HUN	0.16	0.26	0.18	0.13	0.44	0.42	0.15	0.24	1.22			
DEU	0.95	0.79	0.97	0.81	0.86	0.73	0.95	0.83	0.16	12.52		
POL	0.84	0.75	0.81	0.75	0.81	0.62	0.77	0.75	0.17	0.79	13.81	
JPN	0.80	0.79	0.82	0.77	0.87	0.79	0.78	0.79	0.66	0.81	0.76	2.35

RDC	dce					
	CAN	DFS	NOR	NLD	DEU	IRL
CAN	7.06					
DFS	0.88	10.80				
NOR	0.74	0.89	11.70			
NLD	0.95	0.90	0.87	4.81		
DEU	0.92	0.87	0.84	0.92	13.51	
IRL	0.81	0.79	0.84	0.85	0.78	0.07

RDC	mce			
	CAN	DFS	NOR	DEU
CAN	7.10			
DFS	0.73	11.52		
NOR	0.58	0.77	13.41	
DEU	0.83	0.87	0.63	11.67

^LAPPENDIX II. Number of common bulls

BSW

common bulls below diagonal						
common three quarter sib group above diagonal						
	DEA	NLD	USA	CHE	CAN	FRA
DEA	0	124	191	451	99	204
NLD	114	0	47	86	20	59
USA	148	42	0	158	110	75
CHE	382	78	125	0	89	126
CAN	86	18	101	75	0	59
FRA	156	47	59	94	51	0

BSW

common bulls below diagonal						
common three quarter sib group above diagonal						
	DEA	NLD	USA	CHE	CAN	FRA
DEA	0	127	111	507	36	170
NLD	112	0	38	82	17	56
USA	101	35	0	105	32	51
CHE	411	79	91	0	34	116
CAN	32	14	30	29	0	24
FRA	130	49	45	86	21	0

BSW

BSW

GUE

GUE

GUE

GUE

HOL

common bulls below diagonal
common three quarter sib group above diagonal

	AUS	CAN	CHE	DFS	FRA	ISR	ITA	NLD	USA	GBR	HUN	DEU	BEL	IRL	SVK	ESP	POL	JPN
AUS	0	1446	445	1077	1120	91	1061	1242	1804	797	445	1426	524	493	202	608	850	624
CAN	1396	0	715	1423	1539	124	1908	1582	3925	990	698	2514	646	457	306	994	1506	1145
CHE	389	627	0	435	513	32	546	603	743	368	196	888	373	231	112	342	507	357
DFS	730	1130	374	0	1480	116	1327	1680	1933	850	526	2221	609	472	258	695	1181	681
FRA	816	1192	459	888	0	94	1632	1774	2270	950	671	2356	722	492	306	871	1520	881
ISR	58	82	17	80	57	0	115	139	184	88	54	128	54	71	34	71	121	77
ITA	822	1661	478	1011	1073	77	0	1582	2668	1087	694	2493	660	474	317	990	1628	1052
NLD	962	1389	567	1148	1094	96	1251	0	2415	1090	562	3067	813	633	344	792	1639	839
USA	1722	4272	653	1357	1363	171	2172	1832	0	1397	843	3428	693	589	392	1115	2178	1528
GBR	607	825	319	505	544	51	790	725	1042	0	379	1291	458	473	184	520	909	592
HUN	273	554	131	333	411	34	505	314	656	214	0	833	281	235	174	400	494	424
DEU	1110	2035	815	1558	1463	97	1777	2601	2607	839	543	0	921	640	517	1103	2365	1186
BEL	488	618	366	536	747	29	660	829	645	407	209	952	0	326	163	450	606	401
IRL	436	409	212	379	440	47	407	537	550	424	184	555	303	0	116	272	391	262
SVK	96	211	48	137	194	17	213	222	277	81	110	408	92	47	0	176	278	188
ESP	480	803	289	577	763	39	813	678	894	387	283	785	448	240	88	0	820	603
POL	712	1441	408	979	1183	92	1420	1535	2338	769	370	2178	563	328	193	645	0	893
JPN	469	783	270	469	471	39	645	566	1004	378	230	693	313	211	84	398	584	0

HOL

common bulls below diagonal
common three quarter sib group above diagonal

	CAN	CHE	DFS	FRA	ISR	ITA	NLD	USA	GBR	HUN	DEU	BEL	SVK	ESP	POL	JPN
CAN	0	666	1344	1268	111	1530	1313	2589	904	650	2156	582	274	776	1283	1158
CHE	570	0	563	567	46	579	685	718	427	243	917	406	123	336	503	392
DFS	1190	513	0	1648	127	1415	2107	1968	899	632	2756	678	258	673	1449	933
FRA	971	508	993	0	103	1413	1870	1960	795	690	2440	731	269	722	1494	1077
ISR	68	23	86	58	0	113	141	180	101	62	141	57	30	65	119	96
ITA	1293	500	1189	916	74	0	1467	2262	891	652	2180	610	265	767	1461	1083
NLD	1250	654	1780	1240	104	1256	0	2110	980	662	3194	837	315	684	1638	1009
USA	2621	628	1610	1148	165	1884	1749	0	1160	852	3125	646	330	863	2037	1686
GBR	986	404	914	804	75	957	1068	1356	0	401	1111	477	173	490	780	599
HUN	545	179	433	426	40	500	450	720	367	0	901	302	175	365	504	523
DEU	1643	827	1972	1382	105	1559	2737	2304	1179	602	0	885	390	889	2350	1376
BEL	571	402	641	755	31	596	904	591	526	239	916	0	154	405	559	409
SVK	189	50	141	149	14	185	208	239	111	118	286	82	0	160	229	197
ESP	614	283	585	615	34	656	620	702	474	285	639	389	83	0	624	559
POL	1149	400	1235	1061	89	1251	1492	2082	840	369	2061	498	173	484	0	921
JPN	734	290	578	479	46	615	600	964	485	289	692	309	83	373	537	0

HOL

common bulls below diagonal
common three quarter sib group above diagonal

	AUS	CAN	CHE	DFS	FRA	ISR	ITA	NLD	USA	HUN	DEU	POL	JPN
AUS	0	1401	433	1081	993	91	1064	1399	1678	318	1425	842	636
CAN	1386	0	691	1379	1393	120	1923	1847	3600	488	2501	1496	1171
CHE	381	605	0	427	506	31	540	651	687	128	866	497	359
DFS	735	1135	368	0	1343	118	1335	1831	1795	411	2233	1177	695
FRA	765	1129	453	852	0	83	1591	1781	1839	485	2268	1502	884
ISR	58	81	17	80	54	0	117	141	180	35	130	118	78

ITA	829	1688	475	1029	1076	82	0	1802	2581	500	2510	1654	1085
NLD	1212	1823	631	1412	1373	106	1562	0	2512	468	3418	1744	942
USA	1631	4038	595	1301	1141	168	2142	2220	0	575	3199	2109	1543
HUN	199	382	89	256	304	26	359	320	428	0	634	303	295
DEU	1114	2042	788	1562	1446	97	1826	3111	2476	419	0	2362	1219
POL	712	1451	404	985	1186	92	1479	1682	2308	224	2203	0	905
JPN	480	818	271	480	480	40	675	657	1046	167	720	607	0

HOL

common bulls below diagonal
common three quarter sib group above diagonal

	CAN	CHE	DFS	FRA	ISR	ITA	NLD	USA	HUN	DEU	POL	JPN
CAN	0	665	1351	1199	110	1634	1353	2389	469	2108	1225	1177
CHE	570	0	575	562	46	618	696	681	179	900	475	402
DFS	1225	524	0	1553	129	1559	2171	1787	510	2771	1411	968
FRA	948	505	985	0	98	1510	1775	1600	522	2308	1430	1056
ISR	68	23	88	56	0	117	143	175	45	139	116	97
ITA	1371	539	1291	954	79	0	1665	2316	503	2450	1536	1177
NLD	1332	668	1886	1243	106	1421	0	1913	518	3155	1569	1044
USA	2509	597	1617	1044	164	1966	1705	0	580	2732	1860	1577
HUN	387	134	348	320	27	372	368	508	0	708	307	407
DEU	1588	804	1991	1306	102	1682	2731	2114	464	0	2175	1393
POL	1100	374	1203	1006	89	1274	1424	1921	209	1855	0	896
JPN	759	298	609	490	47	650	644	998	221	712	527	0

JER

JER

JER

JER

RDC

common bulls below diagonal
common three quarter sib group above diagonal

	CAN	DFS	NOR	NLD	DEU	IRL
CAN	0	177	6	5	11	4
DFS	182	0	159	60	94	21
NOR	5	135	0	50	33	55
NLD	5	58	49	0	27	13
DEU	11	86	31	26	0	7
IRL	4	17	54	13	6	0

RDC

common bulls below diagonal
common three quarter sib group above diagonal

	CAN	DFS	NOR	DEU
CAN	0	116	5	9
DFS	114	0	142	60
NOR	4	116	0	17
DEU	9	52	16	0

RDC

RDC

SIM

SIM

SIM

