Introduction

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

International genetic evaluations for workability traits of bulls from Austria-Germany, Canada, Denmark-Finland-Sweden, France, Great Britain, Italy, Netherlands, Norway, New Zealand, Slovenia, Japan, Switzerland, Poland, Czech Republic and Spain were computed. Brown Swiss, Holstein, Jersey and Red Dairy Cattle breed data were included in this evaluation.

Changes in national procedures

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

JPN (HOL)	Small changes in proofs caused by additional records and in EDCs caused by modification of pedigree
FRA (ALL)	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.
NOR (RDC)	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
NLD (ALL)	MSP: Decrease in information due to data edits TEM: decrease in reliability due to data edits
CHE (ALL)	Breeding organizations have recently put more emphasis on correcting data, which contributes to some higher variation in data. This increased activity is related to the merge of two databases planned, which took place by the end of June 2026 which caused some decrease in information.
POL (HOL)	Drops in information due to data edits and pedigree verification
DEA (BSW)	Small changes in information due to pedigree verification
AUS (ALL)	Updated type of proofs according to the latest interbull recommendation. Drops in information due to pedigree verification and changes in status of bulls that are no longer qualifying for the evaluation.
DEU (ALL)	Overall base change, some drops in information due to data edits
NZL (ALL)	Decrease in information due to continuous pedigree verification and herd records being updated
ITA (BSW)	Improvements in data editing procedures and quality control checks. In addition, the identification of the correct calving date associated with each phenotypic records has been optimized to ensure greater consistency and accuracy of the data.
ITA (HOL)	Cut off of data causing drops in information and bulls missing in this submission.
CZE (HOL)	Dropping in reliability due to current software update (AACF90gs1/ACCF90rr to new ACCF90gs3).

INTERBULL CHANGES COMPARED TO THE PREVIOUS ROUTINE RUN

A new document called confdoc_DEFINITION{runid}.itb has been introduced reporting all the trait definitions applied by countries as reported in the PREP.

Direct Gestation Length (ges) has been added as the fifth trait in the calving evaluation starting from the August 2025 MACE routine evaluation, and therefore added in the calv{BRD}{RUNID}.itb and calv{BRD}{RUNID}.ipr.

During 2023-2024, Interbull Centre and the Interbull Technical Committee (ITC) have worked on developing a new procedures for adjusting of the international correlations after a given test run in case countries would decide NOT TO implement the changes tested in the next routine run.
Until now, the relative difference between the previous routineâ\200\231s and test runâ\200\231s correlations, for each pair of countries, was assessed and the average value of the two was used whenever such difference did exceed a threshold of 0.01. Otherwise, correlations from the latest test run were used.
However, in some cases, the difference in correlations between routine/test runs were way above a 1% difference so that by using the average value the newly derived correlations would still be greatly affected by the changes tested but not implemented. This remark has been made in few occasions by some participating countries.
A new approach proposed by Peter Sullivan, was developed and extensively tested. The new approach is based on first identifying the relative impact of the changes tested by a country during the test run (but not implemented in a routine run) and then correcting the whole correlation matrix detracting such estimated impact.
This new approach would assure that the new correlations would be free from any effect from any changes tested but not implemented.
The new procedure has been fully developed during 2023 and extensively tested during 2024 and introduced officially in the April 2025 routine evaluation.

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
https://interbull.org/ib/servicecalendar

NEXT TEST INTERNATIONAL EVALUATION

Dates for the next test run can be found on
https://interbull.org/ib/servicecalendar

From 2025 an extra MACE test run has been scheduled in May, data submissions' deadline and target for distribution of results are all reported in the above link.

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 Workability (August Routine Evaluation 2026).
Number of records for milking speed by breed

Country	BSW	GUE	HOL	JER	RDC	SIM
AUS			6699	1348	581	
BEL						
CAN	230		14025	855	905	
CHE	3088		3238	65		
CZE			2223			
DEA	4748					
DEU			14290		238	
DFS			12625	2121	7014	
ESP			3901			
EST						
FRA	476		15524			
FRM						
GBR			6669			
HUN						
IRL						
ISR						
ITA	2261		6589			
JPN			2704			
KOR						
LTU						
LVA						
NLD	162		15233	87		
NOR					4161	
NZL			7223	4402	532	
POL			8646			
PRT						
SVK						
SVN	296		590			
URY						
USA						
ZAF						
CAM					39	
No.Records	11261		120179	8878	13470	
Pub. Proofs	9329	0	99713	8215	12940	0

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

BSW msp

CAN	CHE	DEA	ITA	NLD	SVN	FRA

CAN	9.07						
CHE	0.92	15.01					
DEA	0.87	0.96	11.74				
ITA	0.85	0.93	0.90	17.39			
NLD	0.89	0.94	0.91	0.84	5.31		
SVN	0.79	0.87	0.85	0.90	0.82	27.09	
FRA	0.92	0.95	0.89	0.90	0.94	0.82	0.78

HOL msp

	CAN	CHE	DEU	DFS	FRA	NLD	AUS	GBR	SVN	NZL	ITA	JPN	ESP	CZE	POL
CAN	7.68														
CHE	0.93	12.59													
DEU	0.89	0.96	12.84												
DFS	0.93	0.94	0.95	13.78											
FRA	0.94	0.98	0.94	0.95	0.99										
NLD	0.92	0.97	0.96	0.96	0.96	4.61									
AUS	0.82	0.82	0.78	0.79	0.84	0.81	0.26								
GBR	0.70	0.67	0.67	0.69	0.72	0.67	0.71	0.20							
SVN	0.73	0.83	0.90	0.85	0.81	0.85	0.68	0.60	27.43						
NZL	0.91	0.91	0.84	0.85	0.92	0.88	0.92	0.74	0.74	0.25					
ITA	0.78	0.83	0.81	0.83	0.86	0.84	0.69	0.55	0.73	0.74	6.39				
JPN	0.96	0.93	0.88	0.92	0.97	0.94	0.85	0.75	0.74	0.91	0.83	2.12			
ESP	0.91	0.92	0.88	0.91	0.94	0.92	0.79	0.67	0.78	0.88	0.80	0.92	13.14		
CZE	0.88	0.92	0.92	0.93	0.93	0.93	0.75	0.54	0.79	0.80	0.84	0.88	0.89	19.15	
POL	0.51	0.51	0.49	0.50	0.49	0.50	0.48	0.48	0.61	0.55	0.48	0.53	0.52	0.49	18.50

HOL tem

	CAN	CHE	DEU	DFS	FRA	NLD	AUS	GBR	NZL	ITA	JPN	POL
CAN	8.07											
CHE	0.70	10.22										
DEU	0.84	0.77	11.64									
DFS	0.76	0.86	0.85	12.99								
FRA	0.71	0.91	0.79	0.91	0.88							
NLD	0.86	0.78	0.90	0.84	0.81	6.30						
AUS	0.58	0.66	0.62	0.68	0.69	0.71	0.24					
GBR	0.57	0.79	0.66	0.76	0.83	0.68	0.62	0.18				
NZL	0.66	0.59	0.76	0.63	0.62	0.76	0.77	0.53	0.28			
ITA	0.10	0.09	0.14	0.09	0.08	0.15	0.09	0.08	0.11	6.39		
JPN	0.92	0.80	0.90	0.86	0.85	0.94	0.65	0.72	0.69	0.12	2.47	
POL	0.22	0.10	0.23	0.10	0.13	0.20	0.20	0.15	0.20	0.08	0.29	25.15

JER msp

	CAN	DFS	NLD	AUS	NZL	CHE
CAN	7.74					
DFS	0.88	13.51				
NLD	0.91	0.92	4.75			
AUS	0.74	0.76	0.81	0.25		
NZL	0.68	0.79	0.84	0.85	0.22	
CHE	0.91	0.93	0.94	0.78	0.78	11.39

RDC msp

	CAN	DEU	DFS	NOR	AUS	NZL	CAM
CAN	7.00						
DEU	0.88	11.82					
DFS	0.92	0.91	13.11				
NOR	0.79	0.78	0.95	14.64			
AUS	0.78	0.70	0.76	0.75	0.28		
NZL	0.88	0.82	0.88	0.81	0.88	0.29	
CAM	0.68	0.68	0.70	0.68	0.60	0.69	7.26

RDC tem

	CAN	DEU	DFS	NOR	AUS	NZL	CAM
CAN	6.52						
DEU	0.78	10.45					
DFS	0.65	0.74	11.03				
NOR	0.64	0.54	0.90	16.75			
AUS	0.60	0.43	0.62	0.58	0.25		
NZL	0.50	0.67	0.67	0.53	0.77	0.36	
CAM	0.49	0.49	0.49	0.49	0.32	0.49	7.58

^LAPPENDIX II. Number of common bulls

BSW msp

common bulls below diagonal
common three quarter sib group above diagonal

	CAN	CHE	DEA	ITA	NLD	SVN	FRA
CAN	0	127	141	127	39	27	88
CHE	111	0	662	501	84	77	200
DEA	127	573	0	688	111	96	254
ITA	112	441	581	0	103	89	222
NLD	32	81	101	85	0	37	67
SVN	24	72	89	80	37	0	52
FRA	79	160	204	183	57	50	0

BSW tem

GUE msp

GUE tem

HOL msp

common bulls below diagonal
common three quarter sib group above diagonal

	CAN	CHE	DEU	DFS	FRA	NLD	AUS	GBR	SVN	NZL	ITA	JPN	ESP	CZE	POL
CAN	0	944	1934	1387	1567	1690	1132	1890	174	343	1656	484	1245	644	1633
CHE	877	0	977	634	715	887	501	778	103	208	621	181	515	250	644
DEU	1378	868	0	1875	1915	2462	943	1710	294	329	1608	423	1202	814	2208
DFS	1100	584	1233	0	1555	1840	956	1423	158	410	1026	288	824	645	1483
FRA	1187	683	1176	914	0	1951	1036	1578	154	443	1147	366	1079	646	1683
NLD	1598	873	2001	1439	1367	0	1122	1834	205	576	1277	357	990	850	1816
AUS	989	425	618	568	667	881	0	1095	94	561	631	218	580	374	722
GBR	1977	778	1235	1024	1135	1575	849	0	159	428	1319	348	937	607	1457
SVN	139	78	293	115	119	180	62	122	0	33	186	88	139	102	242
NZL	305	178	232	253	253	520	443	327	24	0	176	77	204	158	225
ITA	1462	563	1079	847	849	1138	493	1148	161	154	0	451	1046	575	1605
JPN	234	107	178	162	155	199	138	178	41	58	203	0	357	211	436
ESP	820	395	686	603	822	788	392	684	96	148	748	151	0	456	1086
CZE	368	129	439	292	307	632	148	287	68	66	381	101	252	0	748
POL	1539	521	1986	1230	1286	1690	521	1311	213	161	1450	214	812	541	0

HOL tem

common bulls below diagonal
common three quarter sib group above diagonal

	CAN	CHE	DEU	DFS	FRA	NLD	AUS	GBR	NZL	ITA	JPN	POL
CAN	0	861	1747	1084	1471	1486	1098	1855	331	1652	484	1387
CHE	796	0	801	474	659	718	446	726	184	605	181	528
DEU	1058	666	0	1559	1814	2175	914	1562	297	1478	386	1624
DFS	737	407	824	0	1375	1445	862	1208	386	824	219	1064
FRA	1172	623	1041	735	0	1824	1003	1544	422	1143	365	1436
NLD	1385	709	1528	933	1287	0	1101	1709	572	1166	337	1400
AUS	967	391	536	446	666	863	0	1095	560	630	218	660

```
  GBR 1944  713 1017  746 1128 1461  847    0  426 1317  348 1271
  NZL  297  160  202  222  252  513  442  327    0  175   77  204
  ITA 1456  549  924  612  848 1019  493 1149  154    0  451 1383
  JPN  234  107  164  123  155  187  138  178   58  203    0  396
  POL 1254  411 1170  742 1041 1226  464 1104  144 1207  196    0
 ------------------------------------------------------------------------------
JER msp
--------
 common bulls below diagonal
 common three quarter sib group above diagonal
       CAN  DFS  NLD  AUS  NZL  CHE
 ------------------------------------------------------------------------------
  CAN    0   74   16  202   72   33
  DFS   59    0   51   89   84   44
  NLD   13   46    0   21   22   10
  AUS  203   61   20    0  195   33
  NZL   72   63   20  180    0   27
  CHE   32   44    7   32   26    0
 ------------------------------------------------------------------------------
JER tem
--------
RDC msp
--------
 common bulls below diagonal
 common three quarter sib group above diagonal
       CAN  DEU  DFS  NOR  AUS  NZL  CAM
 ------------------------------------------------------------------------------
  CAN    0    6  176    7   36   29    0
  DEU    6    0   31    9   24    4    0
  DFS  181   23    0  119  142   53    0
  NOR    7    8   97    0   65   11    0
  AUS   33   23  114   55    0   41    9
  NZL   26    3   52   11   37    0    1
  CAM    0    0    0    0    9    1    0
 ------------------------------------------------------------------------------
RDC tem
--------
 common bulls below diagonal
 common three quarter sib group above diagonal
       CAN  DEU  DFS  NOR  AUS  NZL  CAM
 ------------------------------------------------------------------------------
  CAN    0    9  146    7   36   28    0
  DEU    9    0   56   12   31    7    0
  DFS  148   50    0  115  142   52    0
  NOR    7   12   93    0   62   10    0
  AUS   33   30  114   52    0   41    9
  NZL   26    6   51   10   37    0    1
  CAM    0    0    0    0    9    1    0
 ------------------------------------------------------------------------------
SIM msp
--------
SIM tem
--------
```