Introduction

The latest routine international evaluation for SNP Training for clinical mastitis took place
as scheduled at the Interbull Centre. Data from five (5) countries were
included in this evaluation.

International genetic evaluations for SNP Training for clinical mastitis of bulls from
Canada, France, Germany, Switzerland, and the United States of America were computed.
Brown Swiss, Holstein and Jersey breed data were included in this evaluation.

Changes in national procedures

Changes in the national genetic evaluation of SNP Training for clinical mastitis are as
follows:

FRA (ALL)   All proofs sent to MACE are now â\200\234genomic-freeâ\200\235 single-step proofs, issued from a BLUP evaluation running on single-step preadjusted performances, as suggested as one of the methods of choice to provide unbiased â\200\234genomic-freeâ\200\235 proofs to
                  Interbull by the Interbull working group on this topic. In addition to these changes, unknown parent groups have been modified for all traits.
DEU (HOL)   Drop in information due to the data changing, some bulls don’t meet the requirements to be included in the evaluation (daughters in less than 10 herd)
CHE (BSW,HOL)   Decrease in information due to the edits in data base, and change in hys assignment.

INTERBULL CHANGES COMPARED TO THE PREVIOUS ROUTINE RUN

Post-processing Windows:

According to the decision taken by ITC in Orlando (2015) to review the
post-processing windows every 5 years, during the 2020 the relative working group
has been re-activated and new windows have been identified.

As before, 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. Over the past five years, in fact, the previous adopted lower value (25th percentile) had been found too high
causing estimated and post-processed correlations to differ significantly from each other.
The new lower values have been applied to all breeds and traits.

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.
The new weights are as follows:
No changes   :: 2
Small changes:: 1
Big changes :: 0

More information can be read on https://interbull.org/ib/rg_procedure

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 SNP training for clinical mastitis (December Routine Evaluation 2023).
Number of records for clinical mastitis by breed

Country	BSW	GUE	HOL	JER	RDC	SIM
AUS						
BEL						
CAN			5346	268		
CHE	775		849			
CZE						
DEA						
DEU			4992			
DFS						
ESP						
EST						
FRA	420		13060			
FRM						
GBR						
HUN						
IRL						
ISR						
ITA						
JPN						
KOR						
LTU						
LVA						
NLD						
NOR						
NZL						
POL						
PRT						
SVK						
SVN						
URY						
USA	83		8438	921		
ZAF						
HRV						
CAM						
No.Records	1278		32685	1189		
Pub. Proofs	1169	0	25928	1031	0	0

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

BSW cma

	CHE	FRA	USA
CHE	11.38		
FRA	0.87	0.97	
USA	0.85	0.87	2.75

HOL cma

	CAN	CHE	DEU	FRA	USA
CAN	7.68				
CHE	0.89	11.09			
DEU	0.89	0.94	9.67		
FRA	0.91	0.97	0.92	1.16	

```
USA       0.82    0.86    0.88    0.88    2.29

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JER     cma
--------------------------------------------------------------------------------
          CAN     USA
CAN       8.01
USA       0.83    2.44

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^LAPPENDIX II. Number of common bulls
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BSW
--------
 common bulls below diagonal
 common three quarter sib group above diagonal
       CHE  FRA  USA
 ------------------------------------------------------------------------
  CHE    0   81   30
  FRA   68    0   28
  USA   26   27    0
 ------------------------------------------------------------------------
GUE
--------
HOL
--------
 common bulls below diagonal
 common three quarter sib group above diagonal
       CAN  CHE  DEU  FRA  USA
 ------------------------------------------------------------------------
  CAN    0  290  864  933 1405
  CHE  256    0  303  274  272
  DEU  691  276    0 1082  874
  FRA  766  247  803    0 1012
  USA 1588  237  760  823    0
 ------------------------------------------------------------------------
JER
--------
 common bulls below diagonal
 common three quarter sib group above diagonal
       CAN  USA
 ------------------------------------------------------------------------
  CAN    0   99
  USA   92    0
 ------------------------------------------------------------------------
RDC
--------
SIM
--------
```