

## 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:

USA (BSW,JER,HOL)	New VC estimated, affecting overall heritabilities and repeatability. Weights applied were updated from 0/1 to value estimated from VC, and used to standardize genetic variance across differing parities that have different heritabilities
DEU (HOL)	Base change. Drop in information causing some bulls to drops below the required threshold of 10 herds, and also changes in the data
CHE (BSW,HOL)	Base change
CAN (HOL,JER)	Base change

## INTERBULL CHANGES COMPARED TO THE PREVIOUS ROUTINE RUN

In 2020 new post-processing windowsâ200\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](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

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

NEXT TEST INTERNATIONAL EVALUATION

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

PUBLICATION OF INTERBULL ROUTINE RUN

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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

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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 (April Routine Evaluation 2024).  
Number of records for clinical mastitis by breed

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Country            BSW            GUE            HOL            JER            RDC            SIM  
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AUS			
BEL			
CAN		5410	271
CHE	801	879	
CZE			
DEA			
DEU		5136	
DFS			
ESP			
EST			
FRA	421	13160	
FRM			
GBR			
HUN			
IRL			
ISR			
ITA			
JPN			
KOR			
LTU			
LVA			
NLD			
NOR			
NZL			
POL			
PRT			
SVK			
SVN			
URY			
USA	85	8600	938
ZAF			
HRV			
CAM			

No. Records	1307		33185	1209		
Pub. Proofs	1197	0	26329	1048	0	0

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

BSW cma

	CHE	FRA	USA
CHE	11.41		
FRA	0.88	0.97	
USA	0.85	0.88	2.94

HOL cma

	CAN	CHE	DEU	FRA	USA
CAN	7.87				
CHE	0.90	11.08			
DEU	0.88	0.94	9.58		
FRA	0.91	0.97	0.92	1.16	
USA	0.82	0.86	0.88	0.89	2.51

JER cma

	CAN	USA
CAN	8.39	
USA	0.83	2.58

^LAPPENDIX II. Number of common bulls

BSW

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common bulls below diagonal  
common three quarter sib group above diagonal  
    CHE  FRA  USA  
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CHE    0   83   31  
FRA   68    0   28  
USA   27   27    0  
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GUE

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HOL

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common bulls below diagonal  
common three quarter sib group above diagonal  
    CAN  CHE  DEU  FRA  USA  
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CAN    0   300  888  942 1437  
CHE   267    0  310  285  280  
DEU   711  284    0 1107  895  
FRA   776  260  823    0 1021  
USA  1619  245  779  832    0  
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JER

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common bulls below diagonal  
common three quarter sib group above diagonal  
    CAN  USA  
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CAN    0  102  
USA   95    0  
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RDC

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SIM

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