

## INTRODUCTION

The latest genomic test international evaluation for udder traits took place as scheduled at the Interbull Centre. Data from 21 countries were included in this evaluation.

International genetic evaluations for udder health traits of bulls were computed from: AUS BEL CAN CHE CZE DEU DFS ESP FRA GBR HUN IRL ISR ITA NLD NZL POL SVN USA ZAF JPN  
Holstein data were included in this evaluation.

BEL, CAN, DEU, ESP, FRA, DFS, GBR, ITA, NLD, POL, HUN submitted GEBVs.

mas: , CAN, DEU, ESP, FRA, DFS, , ITA, NLD, POL,  
scs: BEL, CAN, DEU, ESP, FRA, DFS, GBR, ITA, NLD, POL, HUN

## CHANGES IN NATIONAL PROCEDURES

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

AUS (HOL)	Missing bulls due to the data clean up of the system Reduction in reliability and EDC due to the removal of historical data
FRA (HOL)	Missing bulls due to routine pedigree update
DEU (HOL)	Base change. Changes in status and publication of bulls born in 2021/2022 For "mas", addition of new data led to GEBV changes of sons for some bulls
ITA (HOL)	Decrease in reliability due to the changes of the information in the system
DFS (HOL)	Decrease in reliability due to rounding
ESP (HOL)	Base change in line with MACE. Missing bulls due to the increase of number of daughters

## INTERBULL CHANGES COMPARED TO THE DECEMBER ROUTINE RUN

No changes in Interbull procedures

## DATA AND METHOD OF ANALYSIS

Thirteen Holstein populations sent GEBV data for up to 38 traits, while classical EBVs for the same traits were used in the analyses. Young bull GEBVs from the GEBV providers have been converted to the scales of all countries participating in classical MACE. A bull will get a MACE EBV or a GMACE EBV but not both.  
From those thirteen countries, National GEBVs of bulls less than seven years of age and with no classical MACE proofs were included for the breeding value prediction with a further requirement of either a MACE-PA or a GMACE-PA (for young genomic bulls with young genomic sires) being available.

The parameter-space approach is used for the GMACE genetic evaluations (Sullivan, 2016)

## SCIENTIFIC LITERATURE

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

Sullivan, P.G. 2016. Defining a Parameter Space for GMACE. Interbull Bulletin 50, p 85-93.

VanRaden, P.M. and Sullivan, P.G. 2010. International genomic evaluation methods for dairy cattle. Gen. Sel. Evol. 42:7

Sullivan, P.G. and Jakobsen, J.H. 2012. Robust GMACE for young bulls methodology. Interbull Bulletin 45, Article 1.

Sullivan, P.G. 2012a. GMACE reliability approximation. Report to the GMACE working group of Interbull. GMACE\_rels 2013

Sullivan, P.G. 2012b. GMACE variance estimation. Report to the GMACE working group of Interbull. GMACE\_vce 2013

Sullivan, P.G. 2012c. GMACE Weighting Factors. Report to the GMACE working group of Interbull. GMACE\_gedcs 2013

Jakobsen, J.H. and Sullivan, P.G. 2013. Trait specific computation of shared reference population. Reference sharing Nov 2013

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NEXT ROUTINE INTERNATIONAL EVALUATION  
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Dates for next routine run can be found on <http://www.interbull.org/ib/servicecalendar>

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

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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 minimising the need to resort to conversions.

At the same time, all recipients of Interbull results are expected to honour 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.

Table 1. National evaluation dates in GMACE run August 2024

Country	Date
CAN	20240801
DEU	20240813
DFS	20240813
FRA	20240814
GBR	20240722
NLD	20240801
ITA	20240710
HUN	20240711
BEL	20201201
ESP	20240723
POL	20240531

Table 2.

Number of bulls in reference population for	scs
CAN 45740.0	
DEU 12175.0 48728.0	
DFS 6657.0 40713.0 41764.0	
FRA 4188.0 35019.0 34567.0 36794.0	
GBR 38584.0 13190.0 7535.0 4222.0 41510.0	
NLD 4265.0 36919.0 36374.0 34481.0 4590.0 38786.0	
ITA 38501.0 11267.0 5884.0 3400.0 37750.0 3599.0 39775.0	
HUN 2290.0 8280.0 7792.0 7297.0 2508.0 7827.0 2271.0 9112.0	
BEL 729.0 728.0 650.0 710.0 686.0 741.0 722.0 549.0 1719.0	
ESP 7836.0 42088.0 40548.0 35128.0 8758.0 36876.0 6881.0 8096.0 705.0 43385.0	
POL 5012.0 34194.0 33967.0 30532.0 5446.0 32025.0 4485.0 7642.0 994.0 34409.0 35754.0	

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Number of bulls in reference population for mas

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CAN 27323.0  
DEU 9881.0 33322.0  
DFS 5605.0 27775.0 28626.0  
FRA 3643.0 23478.0 23234.0 25028.0  
NLD 3610.0 24365.0 24090.0 23027.0 25748.0  
ITA 22225.0 9319.0 5130.0 3038.0 3093.0 23204.0  
HUN 2174.0 4543.0 4136.0 3713.0 4090.0 2163.0 5254.0  
ESP 6664.0 28927.0 27616.0 23568.0 24359.0 6070.0 4368.0 29928.0  
POL 4246.0 21484.0 21476.0 19074.0 19575.0 3896.0 3934.0 21714.0 22932.0