

## INTRODUCTION

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

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

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

dce: CAN, DEU, DFS, GBR, ITA, NLD, HUN, ESP, POL  
dsb: CAN, DEU, DFS, , ITA, NLD, POL  
mce: CAN, DEU, DFS, GBR, ITA, NLD, HUN, POL  
msb: CAN, DEU, DFS, , ITA, NLD, POL

## CHANGES IN NATIONAL PROCEDURES

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

FRA (HOL) Missing bulls due to routine pedigree update  
DEU (HOL) Base change.  
Changes in status and publication of bulls born in 2021/2022  
Plus, for "dsb", two bulls with significant GEBVs changes due to switching of genotyping  
ITA (HOL) Base change for msb.  
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

NEXT ROUTINE INTERNATIONAL EVALUATION

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

NEXT TEST INTERNATIONAL EVALUATION

-----  
 Dates for 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 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
DFS	20240813
ITA	20240710
NLD	20240801
GBR	20240312
HUN	20240711
DEU	20240813
BEL	20201201
ESP	20240723
POL	20240621

Table 2.

Number of bulls in reference population for										dce
CAN	42416.0									
DFS	6429.0	37030.0								
ITA	37055.0	5700.0	38165.0							
NLD	4083.0	31945.0	3461.0	33690.0						
GBR	37352.0	7303.0	36493.0	4398.0	39849.0					
HUN	2274.0	7725.0	2256.0	7645.0	2455.0	8795.0				
DEU	11769.0	36190.0	10890.0	32477.0	12765.0	8203.0	43693.0			
BEL	687.0	642.0	681.0	718.0	656.0	533.0	719.0	1402.0		
ESP	7562.0	35878.0	6652.0	32316.0	8475.0	8025.0	37387.0	696.0	38426.0	
POL	4674.0	30205.0	4187.0	28265.0	5236.0	7579.0	30476.0	824.0	30519.0	31215.0

-----  
 Number of bulls in reference population for mce

-----  
CAN 35083.0  
DFS 6076.0 37819.0  
ITA 29887.0 5437.0 30841.0  
NLD 3877.0 33069.0 3312.0 34541.0  
GBR 29946.0 6962.0 29286.0 4177.0 31882.0  
HUN 2226.0 7744.0 2211.0 7637.0 2380.0 8738.0  
DEU 10370.0 37004.0 9631.0 33559.0 11331.0 8198.0 43368.0  
ESP 7135.0 36777.0 6334.0 33432.0 8052.0 8037.0 38174.0 39174.0  
POL 4542.0 30749.0 4108.0 28873.0 5104.0 7601.0 30978.0 31055.0 31774.0

-----  
Number of bulls in reference population for dsb  
-----

CAN 39126.0  
DFS 6236.0 35478.0  
ITA 34014.0 5503.0 35018.0  
NLD 3896.0 30601.0 3306.0 32053.0  
DEU 11362.0 34683.0 10487.0 31100.0 41868.0  
POL 4513.0 28409.0 4021.0 26546.0 28665.0 29348.0

-----  
Number of bulls in reference population for msb  
-----

CAN 34081.0  
DFS 5951.0 36629.0  
ITA 29032.0 5297.0 29922.0  
NLD 3767.0 32042.0 3217.0 33412.0  
DEU 10120.0 35841.0 9381.0 32536.0 42010.0  
POL 4416.0 29372.0 3967.0 27616.0 29608.0 30349.0