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 genomic evaluation of calving traits are as follows:

DEU (HOL) Due to the French bulls missing in the April 2022 MACE evaluation which were part of the joint EuroGenomics bulls reference population, a decrease in estimated genetic standard deviations has been observed.
DFS (HOL) Change in EDC calculation, in line with MACE changes.
ESP (HOL) Base change for trait dce. New parameters provided for trait dce, in line with MACE changes.
HUN (HOL) Provided new parameters. The software for the estimation of SNP solutions has been updated. New estimation of starting values for estimation of SNPs solutions and to calculate the ratio of residual to genetic variance. The changes triggered an increase in SD of all submitted traits.
NLD (HOL) Due to the French bulls missing in the April 2022 MACE evaluation which were part of the joint EuroGenomics bulls reference population, a decrease in reliability has been observed.
POL (HOL) Due to the French bulls missing in the April 2022 MACE evaluation which were part of the joint EuroGenomics bulls reference population, a decrease in estimated genetic standard deviations has been observed.

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 routine 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 2022

Country	Date
CAN	20220801
DFS	20220809
ITA	20220712
NLD	20220801
GBR	20220704
HUN	20211122
DEU	20220809
BEL	20201201
ESP	20220711
POL	20220614

Table 2.

Number of bulls in reference population for	dce								
CAN	38237.0								
DFS	5346.0	35005.0							
ITA	32810.0	3842.0	33675.0						
NLD	4070.0	31628.0	3251.0	34046.0					
GBR	35440.0	5749.0	32041.0	4431.0	38338.0				
HUN	2267.0	7625.0	1929.0	7773.0	2511.0	9032.0			
DEU	9426.0	34148.0	6807.0	32393.0	9933.0	8133.0	40482.0		
BEL	686.0	629.0	675.0	733.0	665.0	549.0	720.0	1429.0	
ESP	6258.0	34104.0	4363.0	32244.0	6749.0	8004.0	35273.0	695.0	36253.0
POL	4482.0	29399.0	3173.0	28272.0	4868.0	7583.0	29835.0	824.0	30023.0 30758.0

Number of bulls in reference population for mce

CAN	30605.0							
DFS	5054.0	35616.0						
ITA	26799.0	3717.0	27527.0					
NLD	3856.0	32440.0	3125.0	34138.0				
GBR	28061.0	5469.0	25891.0	4148.0	29459.0			
HUN	2200.0	7260.0	1898.0	7266.0	2356.0	8345.0		
DEU	8326.0	34804.0	6180.0	33146.0	8804.0	7745.0	40213.0	
POL	4331.0	29558.0	3116.0	28479.0	4710.0	7226.0	29959.0	30904.0

Number of bulls in reference population for dsb

CAN	35006.0							
DFS	5180.0	33535.0						
ITA	30012.0	3731.0	30839.0					
NLD	3878.0	30241.0	3115.0	31974.0				
DEU	9054.0	32727.0	6566.0	30999.0	38781.0			
POL	4323.0	27614.0	3067.0	26535.0	28061.0	28922.0		

Number of bulls in reference population for msb

CAN	28321.0							
DFS	4913.0	34841.0						
ITA	24804.0	3614.0	25508.0					
NLD	3710.0	31765.0	3010.0	33345.0				
DEU	7954.0	34073.0	5922.0	32477.0	39171.0			
POL	4197.0	28583.0	3015.0	27573.0	28995.0	29880.0		