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 genomic evaluation of uder traits are as follows:

ESP (HOL) Base change, in line with MACE
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.

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

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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
DEU	20220809
DFS	20220809
FRA	20220810
GBR	20220704
NLD	20220801
ITA	20220712
HUN	20211122
BEL	20201201
ESP	20220711
POL	20220630

Table 2.

Number of bulls in reference population for scs

CAN	43117.0										
DEU	9745.0	45381.0									
DFS	5531.0	38698.0	39775.0								
FRA	4176.0	35002.0	34462.0	36788.0							
GBR	36630.0	10266.0	5924.0	4237.0	39719.0						
NLD	4269.0	36896.0	36210.0	34493.0	4602.0	38837.0					
ITA	33819.0	6968.0	3928.0	3278.0	32897.0	3340.0	34740.0				
HUN	2283.0	8203.0	7684.0	7295.0	2524.0	7832.0	1935.0	9110.0			
BEL	727.0	728.0	636.0	710.0	687.0	743.0	706.0	549.0	1730.0		
ESP	6484.0	39901.0	38811.0	35102.0	6977.0	36864.0	4474.0	8066.0	703.0	41114.0	
POL	4812.0	33510.0	33216.0	30527.0	5109.0	32051.0	3328.0	7639.0	994.0	33857.0	35257.0

Number of bulls in reference population for mas

CAN	25622.0					
DEU	7802.0	30340.0				
DFS	4667.0	25928.0	26808.0			
FRA	3597.0	23382.0	23061.0	24940.0		
NLD	3563.0	24255.0	23844.0	22958.0	25684.0	

ITA	19282.0	5950.0	3501.0	2920.0	2869.0	19672.0			
HUN	2104.0	4437.0	3960.0	3705.0	4086.0	1845.0	5180.0		
ESP	5373.0	26806.0	26009.0	23461.0	24251.0	3992.0	4287.0	27738.0	
POL	3970.0	20744.0	20634.0	18993.0	19506.0	2900.0	3900.0	21033.0	22299.0