INTRODUCTION

The latest genomic test international evaluation for dairy production traits took place as scheduled at the Interbull Centre. Data from 29 countries were included in this evaluation.

International genetic evaluations for milk, fat and protein yields of bulls were computed from:
AUS BEL CAN CHE CZE DEU DFS ESP EST FRA GBR HUN IRL ISR ITA JPN KOR LTU LVA NLD NZL POL PRT SVK SVN URY USA ZAF HRV

Holstein breed data were included in this evaluation.

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

fat: BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL, HUN, CZE
mil: BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL, HUN, CZE
pro: BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL, HUN, CZE

CHANGES IN NATIONAL PROCEDURES

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

CAN (HOL) Base change
DFS (HOL) Changes in status of bulls
FRA (HOL) Base change
ITA (HOL) Cut off one year of data and base change
DEU (HOL) Base change
GBR (HOL) Base change
BEL (HOL) Base change
ESP (HOL) Exclusion from national genomic evaluation of candidates and culled bulls older than 2 years old.
Reduction in reliability due to reduction of parent average’s reliability 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 April 2021

Country	Date
CAN	20210401
DEU	20210407
DFS	20210302
FRA	20210407
ITA	20210311
NLD	20210401
GBR	20210309
AUS	20201207
BEL	20201201
ESP	20210319
CZE	20210318
HUN	20210317
POL	20210407

Table 2.

Number of bulls in reference population for mil

CAN	41747.0											
DEU	7814.0	42817.0										
DFS	4695.0	37403.0	38453.0									
FRA	4148.0	34906.0	34401.0	36746.0								
ITA	34306.0	6779.0	3712.0	3267.0	35134.0							
NLD	4214.0	36585.0	36062.0	34434.0	3335.0	38629.0						
GBR	35136.0	8063.0	4906.0	4200.0	33178.0	4463.0	37528.0					
AUS	1326.0	799.0	692.0	727.0	879.0	770.0	1490.0	4409.0				
BEL	752.0	723.0	631.0	709.0	731.0	743.0	686.0	287.0	1754.0			
ESP	5123.0	38205.0	37386.0	34978.0	4188.0	36581.0	5335.0	741.0	696.0	39068.0		
CZE	1530.0	1954.0	1628.0	1656.0	1312.0	1700.0	1465.0	374.0	841.0	1820.0	3344.0	
HUN	1935.0	7655.0	7232.0	7092.0	1810.0	7393.0	1998.0	603.0	498.0	7493.0	1234.0	8240.0
POL	4543.0	32611.0	32486.0	30501.0	3522.0	31889.0	4417.0	662.0	1017.0	32801.0	2386.0	7246.0	34600.0

Number of bulls in reference population for fat

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CAN 41747.0
DEU  7814.0 42817.0
DFS  4695.0 37403.0 38453.0
FRA  4148.0 34906.0 34401.0 36746.0
ITA 34306.0  6779.0  3712.0  3267.0 35134.0
NLD  4214.0 36585.0 36062.0 34434.0  3335.0 38629.0
GBR 35136.0  8063.0  4906.0  4200.0 33178.0  4463.0 37528.0
AUS  1326.0   799.0   692.0   727.0   879.0   770.0  1490.0  4409.0
BEL   752.0   723.0   631.0   709.0   731.0   743.0   686.0   287.0  1754.0
ESP  5123.0 38205.0 37386.0 34978.0  4188.0 36581.0  5335.0   741.0   696.0 39068.0
CZE  1530.0  1954.0  1628.0  1656.0  1312.0  1700.0  1465.0   374.0   841.0  1820.0  3344.0
HUN  1935.0  7655.0  7232.0  7092.0  1810.0  7393.0  1998.0   603.0   498.0  7493.0  1234.0  8240.0
POL  4543.0 32611.0 32486.0 30501.0  3522.0 31889.0  4417.0   662.0  1017.0 32801.0  2386.0  7246.0 34600.0

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Number of bulls in reference population for        pro
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CAN 41747.0
DEU  7814.0 42817.0
DFS  4695.0 37403.0 38453.0
FRA  4148.0 34906.0 34401.0 36746.0
ITA 34306.0  6779.0  3712.0  3267.0 35134.0
NLD  4214.0 36585.0 36062.0 34434.0  3335.0 38629.0
GBR 35136.0  8063.0  4906.0  4200.0 33178.0  4463.0 37528.0
AUS  1326.0   799.0   692.0   727.0   879.0   770.0  1490.0  4409.0
BEL   752.0   723.0   631.0   709.0   731.0   743.0   686.0   287.0  1754.0
ESP  5123.0 38205.0 37386.0 34978.0  4188.0 36581.0  5335.0   741.0   696.0 39068.0
CZE  1530.0  1954.0  1628.0  1656.0  1312.0  1700.0  1465.0   374.0   841.0  1820.0  3344.0
HUN  1935.0  7655.0  7232.0  7092.0  1810.0  7393.0  1998.0   603.0   498.0  7493.0  1234.0  8240.0
POL  4543.0 32611.0 32486.0 30501.0  3522.0 31889.0  4417.0   662.0  1017.0 32801.0  2386.0  7246.0 34600.0
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