INTRODUCTION

The latest genomic international evaluation for dairy production traits took place as scheduled at the Interbull Centre. Data 32 countries were included in this evaluation.

International genetic evaluations for milk, fat and protein yields of bulls from Australia, Austria-Germany, Belgium, Canada, Czech Republic, Denmark-Finland-Sweden, Estonia, France, Hungary, Ireland, Israel, Italy, Japan, Latvia,Lithuania, Netherlands, New Zealand, Norway, Poland, Republic of South Africa, Slovak Republic, Slovenia, Spain, Switzerland, the United Kingdom, the United States of America ,Portugal,Korea,Argentina and Urugay were computed.
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:

DEU (HOL) Base change
CAN (HOL) Base change
ITA (HOL) Base change
GBR (HOL) Base change
FRA (HOL) Base change
NLD (HOL) Base change
POL (HOL) Base change

INTERBULL CHANGES COMPARED TO THE DECEMBER ROUTINE RUN

No changes in Interbull procedures

DATA AND METHOD OF ANALYSIS

Eleven 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 eleven 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 2020

Country	Date
CAN	20200401
DEU	20200407
DFS	20200302
FRA	20200408
ITA	20200309
NLD	20200401
GBR	20200225
AUS	20170704
BEL	20190901
ESP	20200317
CZE	20191118
HUN	20200323
POL	20200102

Table 2.

Number of bulls in reference population for					mil
CAN	40211.0				
DEU	6137.0	40591.0			
DFS	3936.0	36259.0	37189.0		
FRA	4014.0	34456.0	33997.0	36550.0	
ITA	32502.0	4854.0	2989.0	3004.0	33059.0
NLD	4003.0	35944.0	35489.0	34253.0	2935.0 38160.0

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GBR 33636.0  6201.0  3963.0  3998.0 31202.0  4086.0 35560.0
AUS  1321.0   786.0   677.0   723.0   876.0   769.0  1482.0  4409.0
BEL  1792.0  1324.0  1104.0  1287.0  1634.0  1238.0  1367.0   439.0  3251.0
ESP  4323.0 36927.0 36416.0 34554.0  3283.0 36002.0  4353.0   724.0  1252.0 37816.0
CZE  1403.0  1792.0  1506.0  1634.0  1120.0  1649.0  1308.0   374.0  1387.0  1692.0  3178.0
HUN  1749.0  7331.0  6953.0  6939.0  1553.0  7184.0  1767.0   588.0   781.0  7194.0  1178.0  7913.0
POL  4204.0 31832.0 31702.0 30276.0  3137.0 31468.0  3904.0   661.0  1738.0 32086.0  2330.0  7041.0 33895.0

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Number of bulls in reference population for        fat
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CAN 40211.0
DEU  6137.0 40590.0
DFS  3936.0 36258.0 37188.0
FRA  4014.0 34456.0 33997.0 36550.0
ITA 32502.0  4854.0  2989.0  3004.0 33059.0
NLD  4003.0 35944.0 35489.0 34253.0  2935.0 38160.0
GBR 33636.0  6200.0  3962.0  3998.0 31202.0  4086.0 35559.0
AUS  1321.0   786.0   677.0   723.0   876.0   769.0  1482.0  4409.0
BEL  1792.0  1324.0  1104.0  1287.0  1634.0  1238.0  1367.0   439.0  3251.0
ESP  4323.0 36927.0 36416.0 34554.0  3283.0 36002.0  4353.0   724.0  1252.0 37816.0
CZE  1403.0  1792.0  1506.0  1634.0  1120.0  1649.0  1308.0   374.0  1387.0  1692.0  3178.0
HUN  1749.0  7331.0  6953.0  6939.0  1553.0  7184.0  1767.0   588.0   781.0  7194.0  1178.0  7913.0
POL  4204.0 31832.0 31702.0 30276.0  3137.0 31468.0  3904.0   661.0  1738.0 32086.0  2330.0  7041.0 33895.0

-------------------------------------------------------
Number of bulls in reference population for        pro
-------------------------------------------------------
CAN 40211.0
DEU  6137.0 40590.0
DFS  3936.0 36258.0 37188.0
FRA  4014.0 34456.0 33997.0 36550.0
ITA 32502.0  4854.0  2989.0  3004.0 33059.0
NLD  4003.0 35944.0 35489.0 34253.0  2935.0 38160.0
GBR 33636.0  6200.0  3962.0  3998.0 31202.0  4086.0 35559.0
AUS  1321.0   786.0   677.0   723.0   876.0   769.0  1482.0  4409.0
BEL  1792.0  1324.0  1104.0  1287.0  1634.0  1238.0  1367.0   439.0  3251.0
ESP  4323.0 36927.0 36416.0 34554.0  3283.0 36002.0  4353.0   724.0  1252.0 37816.0
CZE  1403.0  1792.0  1506.0  1634.0  1120.0  1649.0  1308.0   374.0  1387.0  1692.0  3178.0
HUN  1749.0  7331.0  6953.0  6939.0  1553.0  7184.0  1767.0   588.0   781.0  7194.0  1178.0  7913.0
POL  4204.0 31832.0 31702.0 30276.0  3137.0 31468.0  3904.0   661.0  1738.0 32086.0  2330.0  7041.0 33895.0
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