INTRODUCTION

The latest genomic routine international evaluation for udder traits took place as scheduled at the Interbull Centre. Data from 26 countries were included in this evaluation.

International genetic evaluations for udder health traits of bulls from Australia, Austria-Germany, Belgium, Canada, Czech Republic, Denmark-Finland-Sweden, Estonia, France, Hungary, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, South Africa, Slovak Republic, Spain, Switzerland, the United Kingdom, the United States of America, Poland, Lithuania, Latvia and Portugal were computed.
Holstein data were included in this evaluation.

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

mas: BEL, CAN, DEU, ESP, FRA, DFS,   , ITA, NLD, POL, HUN
scs: BEL, CAN, DEU, ESP, FRA, DFS, GBR, ITA, NLD, POL, HUN

CHANGES IN NATIONAL PROCEDURES

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

FRA (HOL) Evaluation now performed by a new genetic centre, GENEVAL

BEL (HOL) Changed the pedigree rules for the genomic evaluation, the pedigree is now reduced and limited to birth year of YYYY-15

ITA (HOL) Changes in the conventional evaluation (see MACE doc files)

CAN (HOL) Change the proof expression for SCS to a mean of 100 and a Std. Dev of 5
Moved to an RBV scale

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 December 2018

Country	Date
CAN	20181201
DEU	20181204
DFS	20181106
FRA	20181205
GBR	20181105
NLD	20181201
ITA	20181116
HUN	20181119
BEL	20181201
ESP	20181113
POL	20181031

Table 2.

Number of bulls in reference population for	scs
CAN	37621.0
DEU	4072.0 37766.2
DFS	3226.0 34935.2 36114.2
FRA	3409.0 33301.2 33228.2 35573.2
GBR	31309.0 4069.0 3266.0 3418.0 32577.0
NLD	3320.0 34690.0 34576.0 33253.0 3374.0 36852.0
ITA	31374.0 3553.0 2625.0 2792.0 30078.0 2715.0 32040.0
HUN	1232.0 6502.0 6248.0 6290.0 1211.0 6478.0 1147.0 7014.0
BEL	1594.0 1158.0 983.0 1169.0 1160.0 1126.0 1502.0 566.0 3008.0
ESP	3206.0 35095.2 34947.2 33266.2 3201.0 34616.0 2687.0 6373.0 1094.0 35953.2

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POL  3564.0 30590.0 30811.0 29342.0  3251.0 30416.0  2934.0  6399.0  1612.0 30671.0 32775.0

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Number of bulls in reference population for        mas
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CAN 33880.0
DEU  3976.0 36541.2
DFS  3166.0 33792.2 34915.2
FRA  3341.0 32146.2 32045.2 34174.2
NLD  3247.0 33566.0 33415.0 32097.0 35665.0
ITA 28114.0  3469.0  2599.0  2758.0  2675.0 28386.0
HUN  1209.0  6497.0  6247.0  6286.0  6477.0  1135.0  6991.0
BEL  1589.0  1156.0   982.0  1165.0  1125.0  1498.0   566.0  2998.0
ESP  3157.0 33939.2 33781.2 32090.2 33479.0  2659.0  6372.0  1093.0 34756.2
POL  3514.0 29493.0 29684.0 28213.0 29304.0  2908.0  6398.0  1611.0 29556.0 31643.0
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