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:

ESP (HOL)	Base change
NLD (HOL)	Included a deregression post-processing step to keep the animals with information in the system
ITA (HOL)	First participatoin with mas data
BEL (HOL)	Corrected a small bug in their routines preparing final GEBV to be submitted Increase in the size of the reference population (mainly females)

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 August 2018

Country	Date
CAN	20180801
DEU	20180807
DFS	20180807
FRA	20180808
GBR	20180708
NLD	20180801
ITA	20180706
HUN	20180711
BEL	20180701
ESP	20180620
POL	20180630

Table 2.

Number of bulls in reference population for								scs
CAN	36719.0							
DEU	3484.0	36545.0						
DFS	2795.0	33817.0	35036.0					
FRA	3268.0	32478.0	32337.0	35092.0				
GBR	30466.0	3322.0	2725.0	3170.0	31662.0			
NLD	3011.0	33777.0	33638.0	32408.0	2936.0	35958.0		
ITA	30314.0	2890.0	2214.0	2575.0	29039.0	2388.0	30902.0	
HUN	1104.0	6231.0	5948.0	6077.0	1076.0	6190.0	1013.0	6781.0

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BEL  1459.0  1062.0   861.0  1084.0  1019.0   999.0  1310.0   494.0  2797.0
ESP  3185.0 34343.0 34348.0 33233.0  3119.0 34131.0  2493.0  6206.0  1015.0 35919.0
POL  3338.0 29477.0 29632.0 28747.0  2922.0 29528.0  2643.0  6199.0  1527.0 30381.0 32002.0

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Number of bulls in reference population for        mas
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CAN 33003.0
DEU  3429.0 35346.0
DFS  2759.0 32688.0 33870.0
FRA  3194.0 31335.0 31194.0 33695.0
NLD  2958.0 32654.0 32505.0 31282.0 34788.0
ITA 27094.0  2842.0  2201.0  2551.0  2358.0 27316.0
HUN  1084.0  6230.0  5948.0  6073.0  6190.0  1004.0  6761.0
BEL  1454.0  1061.0   860.0  1080.0   998.0  1306.0   494.0  2787.0
ESP  3116.0 33186.0 33185.0 32008.0 32986.0  2471.0  6205.0  1014.0 34657.0
POL  3301.0 28406.0 28551.0 27640.0 28452.0  2628.0  6199.0  1526.0 29271.0 30892.0
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