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, , , 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:

CAN (HOL) Base change

DFS (HOL) Inclusion of females in reference population

FRA (HOL) Base change

ITA (HOL) Cut off one year of data and base change

NLD (HOL) Introduced the cow reference population in genomics.

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 2018

Country	Date
CAN	20180401
DEU	20180404
DFS	20180306
FRA	20180404
GBR	20180308
NLD	20180401
ITA	20180309
HUN	20180315
BEL	20171201
ESP	20180313
POL	20180228

Table 2.

Number of bulls in reference population for scs

CAN	36204.0									
DEU	3349.0	36281.0								
DFS	2701.0	33444.0	34388.0							
FRA	3156.0	32293.0	31785.0	34723.0						
GBR	29756.0	3127.0	2535.0	2928.0	30859.0					
NLD	2935.0	33784.0	33258.0	32200.0	2779.0	35630.0				
ITA	27853.0	2058.0	1604.0	1887.0	26596.0	1850.0	28171.0			
HUN	1060.0	6193.0	5794.0	6020.0	1010.0	6170.0	837.0	6694.0		
BEL	1441.0	1053.0	914.0	1075.0	966.0	1023.0	1169.0	490.0	2773.0	
ESP	2938.0	34038.0	33685.0	32766.0	2758.0	33866.0	1662.0	6103.0	995.0	35299.0
POL	3196.0	29271.0	29072.0	28365.0	2623.0	29262.0	1971.0	6137.0	1514.0	29856.0
31553.0										

Number of bulls in reference population for mas

CAN	32340.0								
DEU	3285.0	35056.0							
DFS	2663.0	32298.0	33207.0						
FRA	3079.0	31129.0	30625.0	33292.0					
NLD	2880.0	32637.0	32112.0	31055.0	34438.0				
HUN	1041.0	6192.0	5794.0	6014.0	6170.0	6675.0			
BEL	1436.0	1052.0	913.0	1071.0	1022.0	490.0	2763.0		
ESP	2870.0	32859.0	32508.0	31542.0	32701.0	6103.0	994.0	34036.0	
POL	3164.0	28177.0	27970.0	27254.0	28165.0	6137.0	1514.0	28742.0	30438.0