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 submitted GEBVs.

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

CHANGES IN NATIONAL PROCEDURES

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

DFS (HOL) New standardization procedure and introduction of a polygenic effect of 10% in the genomic model.

POL (HOL) New method of estimating GEBV with polygenic effect included
New method of calculating PI and its accuracy and reliability of DGV
Whole EuroGenomic reference population has been used

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.

SCIENTIFIC LITERATURE

The international genetic evaluation procedure is based on international work described in the following scientific publications:

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 2016

Country	Date
CAN	20161201
DEU	20161206
DFS	20161101
FRA	20161208
GBR	20161024
NLD	20161201
ITA	20161108
BEL	20161201
ESP	20161110
POL	20161015

Table 2.

Number of bulls in reference population for scs

CAN	33588.0									
DEU	2267.0	33926.0								
DFS	2007.0	31671.0	32651.0							
FRA	2495.0	30538.0	30323.0	32797.0						
GBR	27405.0	2079.0	1847.0	2273.0	27784.0					
NLD	2452.0	32321.0	32088.0	31038.0	2241.0	34297.0				
ITA	26024.0	1652.0	1328.0	1712.0	25947.0	1701.0	26508.0			
BEL	1293.0	936.0	845.0	986.0	835.0	953.0	727.0	2599.0		
ESP	2180.0	31956.0	31879.0	30942.0	1992.0	32587.0	1446.0	890.0	33066.0	
POL	2442.0	27212.0	27124.0	26452.0	1866.0	27792.0	1355.0	1350.0	27679.0	29349.0

Number of bulls in reference population for mas

CAN	30692.0									
DEU	2247.0	32786.0								
DFS	1965.0	30568.0	31473.0							
FRA	2441.0	29406.0	29153.0	31395.0						
GBR	24942.0	2061.0	1810.0	2225.0	25292.0					
NLD	2398.0	31222.0	30943.0	29873.0	2191.0	33117.0				
ITA	23591.0	1637.0	1318.0	1699.0	23510.0	1683.0	24055.0			
BEL	1287.0	935.0	842.0	980.0	830.0	950.0	724.0	2588.0		
ESP	2134.0	30834.0	30709.0	29751.0	1951.0	31426.0	1434.0	886.0	31870.0	
POL	2413.0	26121.0	26020.0	25330.0	1840.0	26682.0	1343.0	1348.0	26557.0	28226.0