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:

DEU (HOL) Optimisation of the SNP BLUP genomic model and update of genomic reliabilities. Many bulls missing compared to the previous run due to a new editing in the national genomic evaluation.
Base change

CAN (HOL) Using proofs from the new model for SCS
Update of reliability calculations.
Corrected status of about 7500 bulls from 0 to 10

FRA (HOL) -Base change
-corrected proofs status and bull status for some records

DFS (HOL) -corrected proofs status and bull status for some records

NLD (HOL) -corrected proofs status for some records

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 April 2016

Country	Date
CAN	20160401
DEU	20160405
DFS	20160202
FRA	20151204
GBR	20160309
NLD	20160401
ITA	20160308
BEL	20160401
ESP	20160311
POL	20160215

Table 2.

Number of bulls in reference population for	scs								
CAN	29069.0								
DEU	1970.0	33110.0							
DFS	1739.0	31064.0	31737.0						
FRA	2010.0	27939.0	27582.0	29717.0					
GBR	25889.0	1779.0	1578.0	1803.0	26160.0				
NLD	2074.0	28813.0	28348.0	25241.0	1868.0	30210.0			
ITA	24453.0	1280.0	1111.0	1313.0	24239.0	1353.0	24780.0		
BEL	1207.0	889.0	799.0	865.0	771.0	897.0	673.0	2493.0	
ESP	1694.0	30313.0	30115.0	27631.0	1522.0	27831.0	1130.0	804.0	30893.0
POL	139.0	2498.0	2622.0	2567.0	164.0	216.0	137.0	175.0	2631.0	2748.0

```
-----------------------------------------------------
Number of bulls in reference population for        mas
-----------------------------------------------------
CAN 26181.0
DEU  1956.0 31981.0
DFS  1725.0 29956.0 30610.0
FRA  1991.0 26832.0 26482.0 28330.0
GBR 23444.0  1767.0  1566.0  1788.0 23692.0
NLD  2055.0 27728.0 27266.0 24162.0  1851.0 29115.0
ITA 22032.0  1277.0  1108.0  1310.0 21816.0  1346.0 22342.0
BEL  1206.0   889.0   799.0   865.0   770.0   897.0   672.0  2491.0
ESP  1684.0 29216.0 29023.0 26547.0  1514.0 26762.0  1127.0   804.0 29793.0
POL   139.0  2498.0  2622.0  2567.0   164.0   216.0   137.0   175.0  2631.0  2748.0
```