## INTRODUCTION

The latest genomic international evaluation for dairy production traits took place as scheduled at the Interbull Centre. Data 32 countries were
included in this evaluation.
International genetic evaluations for milk, fat and protein yields of bulls from
Australia, Austria-Germany, Belgium, Canada, Czech Republic, Denmark-Finland-Sweden, Estonia,
France, Hungary, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Netherlands,
New Zealand, Norway, Poland, Republic of South Africa, Slovak Republic,
Slovenia, Spain, Switzerland, the United Kingdom, the United States of America, Portugal, Korea and Uruguay were computed.
Holstein breed data were included in this evaluation.
BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL submitted GEBVs.
fat: BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL
mil: BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL
pro: BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL

CHANGES IN NATIONAL PROCEDURES
Changes in the national genetic evaluation of production traits are as follows:
DEU (HOL) Bulls older than 17 months year old and not selected yet have been removed from the national evaluation
ESP (HOL) Elimination of many Eurogenomics bulls from the national evaluation. These bulls had already MACE
proof or have not been selected for AI
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

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 minimizing the need to resort to conversions.

At the same time, all recipients of Interbull results are expected to honor 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 2.


| CAN | 32831.0 |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| DEU | 2094.0 | 33425.0 |  |  |  |  |  |  |  |  |  |
| DFS | 1876.0 | 31297.0 | 32244.0 |  |  |  |  |  |  |  |  |
| FRA | 2318.0 | 29495.0 | 29321.0 | 31597.0 |  |  |  |  |  |  |  |
| ITA | 25457.0 | 1518.0 | 1253.0 | 1588.0 | 25957.0 |  |  |  |  |  |  |
| NLD | 2285.0 | 31906.0 | 31679.0 | 29929.0 | 1584.0 | 33728.0 |  |  |  |  |  |
| GBR | 26714.0 | 1909.0 | 1718.0 | 2099.0 | 25343.0 | 2080.0 | 27070.0 |  |  |  |  |
| AUS | 519.0 | 382.0 | 368.0 | 380.0 | 310.0 | 480.0 | 523.0 | 3369.0 |  |  |  |
| BEL | 1253.0 | 915.0 | 823.0 | 961.0 | 713.0 | 941.0 | 815.0 | 223.0 | 2549.0 |  |  |
| ESP | 1936.0 | 30819.0 | 30788.0 | 29655.0 | 1291.0 | 31373.0 | 1755.0 | 369.0 | 857.0 | 31643.0 |  |
| POL | 145.0 | 2496.0 | 2620.0 | 2573.0 | 142.0 | 2629.0 | 169.0 | 107.0 | 175.0 | 2630.0 | 2746.0 |
| Number of bulls in reference population for fat |  |  |  |  |  |  |  |  |  |  |  |
| CAN 32832.0 |  |  |  |  |  |  |  |  |  |  |  |
| DEU | 2094.0 | 33425.0 |  |  |  |  |  |  |  |  |  |
| DFS | 1876.0 | 31297.0 | 32244.0 |  |  |  |  |  |  |  |  |
| FRA | 2318.0 | 29495.0 | 29321.0 | 31597.0 |  |  |  |  |  |  |  |
| ITA | 25457.0 | 1518.0 | 1253.0 | 1588.0 | 25957.0 |  |  |  |  |  |  |
| NLD | 2285.0 | 31906.0 | 31679.0 | 29929.0 | 1584.0 | 33728.0 |  |  |  |  |  |
| GBR | 26714.0 | 1909.0 | 1718.0 | 2099.0 | 25343.0 | 2080.0 | 27070.0 |  |  |  |  |
| AUS | 519.0 | 382.0 | 368.0 | 380.0 | 310.0 | 480.0 | 523.0 | 3369.0 |  |  |  |
| BEL | 1253.0 | 915.0 | 823.0 | 961.0 | 713.0 | 941.0 | 815.0 | 223.0 | 2549.0 |  |  |
| ESP | 1936.0 | 30819.0 | 30788.0 | 29655.0 | 1291.0 | 31373.0 | 1755.0 | 369.0 | 857.0 | 31643.0 |  |
| POL | 145.0 | 2496.0 | 2620.0 | 2573.0 | 142.0 | 2629.0 | 169.0 | 107.0 | 175.0 | 2630.0 | 2746.0 |
| Number of bulls in reference population for pro |  |  |  |  |  |  |  |  |  |  |  |
| CAN 32831.0 |  |  |  |  |  |  |  |  |  |  |  |
| DEU | 2094.0 | 33425.0 |  |  |  |  |  |  |  |  |  |
| DFS | 1876.0 | 31297.0 | 32244.0 |  |  |  |  |  |  |  |  |
| FRA | 2318.0 | 29495.0 | 29321.0 | 31597.0 |  |  |  |  |  |  |  |
| ITA | 25457.0 | 1518.0 | 1253.0 | 1588.0 | 25957.0 |  |  |  |  |  |  |
| NLD | 2285.0 | 31906.0 | 31679.0 | 29929.0 | 1584.0 | 33728.0 |  |  |  |  |  |
| GBR | 26714.0 | 1909.0 | 1718.0 | 2099.0 | 25343.0 | 2080.0 | 27070.0 |  |  |  |  |
| AUS | 519.0 | 382.0 | 368.0 | 380.0 | 310.0 | 480.0 | 523.0 | 3369.0 |  |  |  |
| BEL | 1253.0 | 915.0 | 823.0 | 961.0 | 713.0 | 941.0 | 815.0 | 223.0 | 2549.0 |  |  |
| ESP | 1936.0 | 30819.0 | 30788.0 | 29655.0 | 1291.0 | 31373.0 | 1755.0 | 369.0 | 857.0 | 31643.0 |  |
| POL | 145.0 | 2496.0 | 2620.0 | 2573.0 | 142.0 | 2629.0 | 169.0 | 107.0 | 175.0 | 2630.0 | 2746.0 |

