

INTRODUCTION

The latest genomic test international evaluation for dairy production traits took place as scheduled at the Interbull Centre. Data from 29 countries were included in this evaluation.

International genetic evaluations for milk, fat and protein yields of bulls were computed from:
AUS BEL CAN CHE CZE DEU DFS ESP EST FRA GBR HUN IRL ISR ITA JPN KOR LTU LVA NLD NZL POL PRT SVK SVN URY USA ZAF HRV

Holstein breed data were included in this evaluation.

BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL, HUN, CZE submitted GEBVs.

fat: BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL, HUN, CZE
mil: BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL, HUN, CZE
pro: BEL, CAN, DEU, ESP, FRA, AUS, DFS, GBR, ITA, NLD, POL, HUN, CZE

CHANGES IN NATIONAL PROCEDURES

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

AUS (HOL) Missing bulls due to the data clean up of the system
Reduction in reliability and EDC due to the removal of historical data
FRA (HOL) Missing bulls due to routine pedigree update
DEU (HOL) Base change.
Changes in status and publication of bulls born in 2021/2022
ITA (HOL) Decrease in reliability due to the changes of the information in the system
ESP (HOL) Base change in line with MACE.
Missing bulls due to the increase of number of daughters
GBR (HOL) Changes due to the difference in the genetic progress between Holstein and Friesian bulls
INTERBULL CHANGES COMPARED TO THE DECEMBER ROUTINE RUN

No changes in Interbull procedures

DATA AND METHOD OF ANALYSIS

Thirteen 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 thirteen 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 test 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 2024

| Country | Date |
|---------|----------|
| CAN | 20240801 |
| DEU | 20240813 |
| DFS | 20240813 |
| FRA | 20240814 |
| ITA | 20240710 |
| NLD | 20240801 |
| GBR | 20240722 |
| AUS | 20201207 |
| BEL | 20201201 |
| ESP | 20240723 |
| CZE | 20240729 |
| HUN | 20240711 |
| POL | 20240531 |

Table 2.

| Number of bulls in reference population for | mil |
|--|-----|
| CAN 45474.0 | |
| DEU 12135.0 48706.0 | |
| DFS 6648.0 40706.0 41756.0 | |
| FRA 4186.0 35025.0 34567.0 36801.0 | |
| ITA 38228.0 11229.0 5875.0 3398.0 39510.0 | |
| NLD 4251.0 36920.0 36371.0 34482.0 3586.0 38777.0 | |
| GBR 38316.0 13156.0 7526.0 4220.0 37479.0 4578.0 41259.0 | |
| AUS 1499.0 949.0 782.0 760.0 1321.0 811.0 1328.0 4584.0 | |
| BEL 729.0 728.0 650.0 710.0 722.0 741.0 686.0 291.0 1718.0 | |
| ESP 7805.0 42072.0 40544.0 35134.0 6852.0 36878.0 8729.0 856.0 705.0 43364.0 | |
| CZE 1951.0 2474.0 1886.0 1695.0 1891.0 1732.0 1862.0 414.0 845.0 2277.0 3839.0 | |
| HUN 2288.0 8277.0 7790.0 7296.0 2269.0 7826.0 2506.0 766.0 549.0 8092.0 1428.0 9109.0 | |
| POL 5009.0 34192.0 33966.0 30531.0 4481.0 32024.0 5443.0 695.0 994.0 34407.0 2554.0 7641.0 35752.0 | |

