

INTRODUCTION

The latest genomic test international evaluation for longevity trait took place as scheduled at the Interbull Centre. Data from 21 populations were included in this evaluation.

International genetic evaluations for direct longevity of bulls were computed from: AUS BEL CAN CHE CZE DEU DFS ESP FRA GBR HUN IRL ISR ITA NLD NZL POL SVN USA ZAF JPN Holstein breed data were included in this evaluation.

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

dlo: CAN, DEU, ESP, FRA, DFS, GBR, ITA, NLD, HUN, POL

CHANGES IN NATIONAL PROCEDURES

Changes in the national genomic evaluation of longevity traits are as follows:

HUN (HOL) Provided new parameters. The software for the estimation of SNP solutions has been updated. New estimation of starting values for estimation of SNPs solutions and to calculate the ratio of residual to genetic variance. The changes triggered an increase in SD of all submitted traits.

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>

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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 2022

Country	Date
CAN	20220801
DEU	20220809
DFS	20220809
ESP	20220711
FRA	20220810
GBR	20220704
ITA	20220712
NLD	20220801
HUN	20211122
POL	20220531

Table 2.

Number of bulls in reference population for	dlo
CAN	42586.0
DEU	9580.0 45024.0
DFS	5450.0 38593.0 39539.0
ESP	6329.0 39725.0 38658.0 40793.0
FRA	4153.0 34930.0 34406.0 35025.0 36711.0
GBR	36160.0 10056.0 5798.0 6756.0 4218.0 38954.0
ITA	33801.0 6923.0 3915.0 4448.0 3272.0 32869.0 34711.0
NLD	4233.0 36802.0 36157.0 36779.0 34424.0 4562.0 3319.0 38719.0
HUN	2262.0 8189.0 7678.0 8052.0 7295.0 2496.0 1935.0 7831.0 9074.0
POL	4779.0 33412.0 33122.0 33734.0 30466.0 5046.0 3320.0 31990.0 7636.0 35128.0