

## INTRODUCTION

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The latest genomic routine 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 trait of bulls from Australia, Belgium, Canada, Switzerland, Germany, Denmark-Finland-Sweden Spain, France, The United Kingdom, Ireland, Israel, Italy, New Zealand, The Netherlands, The United States of America Hungary, Norway, Slovenia and Czech Republic were computed. Holstein breed data were included in this evaluation.

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

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

## CHANGES IN NATIONAL PROCEDURES

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

- DFS (HOL)    New method of calculating reliabilities
- BEL (HOL)    New genomic evaluation for dlo based on a single-step GPLUP modified to combine all available information following a Bayesian approach. MACE breeding values are no more used. The computation of genomic reliability has slightly changed and is now only based on the genetic variance used for the genomic evaluation and the pev obtained from the inverse of the left-hand-side of the ssGBLUP.
- ESP (HOL)    Annual update of the reference population and elimination of high number of duplicate genotypes.

## INTERBULL CHANGES COMPARED TO THE DECEMBER ROUTINE RUN

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No changes in Interbull procedures

## DATA AND METHOD OF ANALYSIS

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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 2015

Country	Date
BEL	20151201
CAN	20151201
DEU	20151201
DFS	20151103
ESP	20151116
FRA	20151204
GBR	20151022
ITA	20151104
NLD	20151201

Table 2.

Number of bulls in reference population for										dlo
BEL	2518.0									
CAN	797.0	25815.0								
DEU	844.0	1478.0	30870.0							
DFS	785.0	1429.0	29067.0	30098.0						
ESP	774.0	1375.0	28271.0	28479.0	29114.0					
FRA	845.0	1629.0	26016.0	26162.0	26126.0	27932.0				
GBR	699.0	24403.0	1325.0	1261.0	1207.0	1432.0	24489.0			
ITA	667.0	23752.0	1111.0	1019.0	978.0	1183.0	23636.0	24037.0		
NLD	870.0	1650.0	26788.0	26804.0	26082.0	23816.0	1460.0	1216.0	28476.0	