Interbull Technical Committee Report

Gert Pedersen Aamand
Chairman ITC

ICAR THE GLOBAL STANDARD FOR LIVESTOCK DATA

Network. Guidelines. Certification.

Interbull Technical Commitee

- ITC objective:
  - Identify and review technical issues that may be essential for providing a high-quality service to countries participating in the international genetic evaluations.
- ITC mandate:
  - Make recommendations on technical questions proposed by the Interbull Steering Committee.
  - Make spontaneous recommendations to the Interbull Steering Committee on methodological issues of such importance that they may affect the service as a whole.

Interbull Technical Commitee

Name	Organisation
Paul VanRaden	USDA, US
Zengting Liu	VIT, Germany
Raphael Mrode	SRUC, UK
Esa Mäntysaari	Luke, Finland
Pete Sullivan	Lactanet, Canada
Gerben de Jong	CRV, Netherlands
Tom Lawlor	Holstein US
Gerrit Kistemaker	Lactanet, Canada
Haifa Benhajali	Interbull Centre, Sweden
Gert Pedersen Aamand, chair	NAV, Denmark, Sweden, Finland

Interbull Technical Commitee

Activities since June 2019:

- ITC working groups zoom meeting
- Email discussion at the forum
- ITC zoom meetings 9 June and 17 June (incl **S**cientific **A**dvisory **C**ommitteee)

Note:

Topics are also presented in R&D section (p21-24) of the Interbull Centre 2019-2020 Activity Report (https://interbull.org/ib/itbcreports))

InterGenomics Holstein: background

- Small Holstein populations have been searching for ways of ensuring cost efficient solutions for genomic selection
- In small Holstein populations chances for commercial-driven implementation of genomic selection are limited.
- After the successful implementation of InterGenomics for BSW the idea of implementing this methodology for small/other HOL populations has arisen.

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InterGenomics Holstein

ITC has given recommendation to SC:

- Validation IgHOL – “small data set”
- Estimation of reliabilities – apply new Genomic reliability method (Igrel) for IgHOL and look at possibilities to use the same method also in BSW InterGenomics.

Post-Processing Windows Correlations

WG: Raphael Mrode (chair), Zengting Liu, Paul VanRaden, Tom Lawlor, Valentina Palucci

- Interbull do routinely post processing of the estimated genetic correlations:
  - Windows reviewed for Mastitis – new window implemented in April 2020 based on ITC recommendation
  - Work ongoing - general review of applied windows

Clinical mastitis evaluation (cma)

- The aim of a new clinical mastitis evaluation is to provide better data (than the current mas evaluation which includes both mas and scs data) for SNP training for genomic evaluation of Clinical Mastitis.
- ITC give inputs about post processing of correlations and rules for inclusion of data in the new clinical mastitis evaluation(work ongoing).

Genomic free EBVs

Recommendations for countries running Single Step methods on how to produce genomic-free EBV to be used in MACE:

Countries who are running a single step evaluation have two options:

A. Run traditional model to get EBV to send to Interbull (using only national information)

or

B. Run single step evaluation (foreign information could be included) and as a next step estimate EBV based on national phenotype data only, corrected for environmental effect as estimated from single step

ITC has a preference for option B as it partly corrects for the genomic pre-selection bias

Genomic free EBVs

Interbull plan to organize a webinar in the autumn of 2020 giving national evaluation units a possibility for discussing the recommendations

Validation

WG: Esa Mäntysaari, Zenging Liu, Paul VanRaden, Raphael Mrode, Pete Sullivan, Valentina Palucci

New validation methods are needed

- WG has made a nice overview over current methods – strength and weaknesses due to genomic preselection (presented in Ohio)
- WG has continued the discussion during the year about new ideas including joint discussions with SAC – more work is needed

Genomic preselection & Future MACE

WG:Pete Sullivan, Esa Mäntysaari, Gerben de Jong, Haifa Benhajali

- Mendelian Sampling of AI sires are no longer normally distributed
- ***MACE should adapt to the "new NOT-normal"***

$$E(MS) > 0$$

$$V(MS) < \tfrac{1}{2}\sigma_g^2$$

- Options for future MACE are considered and different possibilities need to be tested

SNPmace

- ITC has:
  - Reviewed and supported the corrected results after the Ohio 2019 meeting (mistaken was presented)
  - Given recommendations for plan for the ongoing phase of the SNPmace project