



Overview of Validation Performed and Documents Related to Benefit of Validation

Introduction

Assessing that the breeding values estimated by the different National Genetic Evaluation Centers (NGECs) are obtained from statistical sound models able to fit well the data available keeping the bias of the estimate to a minimum, is one of the main activities performed by Interbull Centre also in its role as European Reference Centre for Zootechnics.

Although the bias can be considered as intrinsic in any type of statistical estimation, a set of checks can be put in place to quantify its magnitude. The set of checks can vary depending on the type of data and models at hand. In the animal breeding industry, Interbull has over the years developed several approaches to assess the bias level in the different NGEC's estimates. Such approaches are known with the name of Validation methods. Interbull's validation methods have a twofold purpose:

- 1- To avoid that highly biased data could enter the genetic/genomic international evaluations that could jeopardize the quality of the international estimated breeding values.
- 2- To provide feedback to organizations and/or breeds societies on which statistical model(s) would require closer revision as producing results having a bias level above a tolerated threshold of 2%.

For this reason, Interbull does require organisations and/or breeds societies to provide validation results for all their breeds and traits any time that:

- a) A country joins international evaluations for the first time
- b) The statistical model is new or substantially modified
- c) The data used to feed the statistical model has changed (both in nature or in its size)

If neither of the three above cases would apply, Interbull would require validation results if the last available are older than two years.





Interbull validation is applied to genetic and genomic national evaluations alike.

Below an overview of the number of validation tests performed during the course of the 2025-2027 EURC Work programme is reported.

More information on the benefit of validation can be found at

https://interbull.org/web/static/web/Benefits_Validation_EURC%20Report.pdf

Work performed and achievements

Type of Validation	Overall	EU
Conventional, based on trend tests*	154	79
Conventional, based on Mendelian Sampling Variance* test	176	93
Genomic, based on GEBVtest*	50	44

*Count based on country-breed-trait group combination; ¥ Count based on country-breed-sex-trait group combination

Results and Impact

Benefit of validation:

https://interbull.org/web/static/web/Benefits_Validation_EURC%20Report.pdf

Genomic validation:

https://interbull.org/ib/cop_appendix8

clarification on how to use GEBVtest:

https://interbull.org/ib/gebvtest_software

https://interbull.org/static/EURCreports2026/Clarification_on_GEBVtest_criteria.pdf

