PREP: A New Platform For Sharing Performance Recording And National Genetic Evaluations Information

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Outline

- Why sharing of descriptive information?
- A look at the current Interbull GE Form
- Interbull and EURC
- A look at the new PREP database
  - Benefits and Scope
- What’s Next
After commencing of international evaluations…

Specific “National Genetic Forms” have been derived from an initial survey done in 1985

- One form per trait group
- Later on adjusted also to collect Genomic national information

Descriptive national genetic evaluation information for each and every traits evaluated internationally has been collected and shared on the Interbull webpage with the aim of:

- Facilitating access of information
  - Transparency of methodologies applied
  - Infer on most common methodologies used
  - Provide feedback for countries starting to evaluate, or improving, a given trait

- Provide support on interpreting international results

- Provide opportunity for trait harmonization
A look at the current Interbull GE Forms

- Description of national genetic/genomic evaluations are provided via specific forms (GE/GENO)
- Information are made publicly available via Interbull website
- Updated at least twice/year every time major changes to the model, data editing or trait definition are applied
Limitations of GE/GENO Forms:

- One form per *trait group*
  - Difficult at times to provide same level of detailed information for each individual traits included in the group
  - Questions not reviewed in a long time

- Format of questionnaire dealing only with description of national evaluation for international evaluation
  - Not suitable for including description of phenotype recording
  - Not easy to infer if differences occur between the official national evaluation and national data provided for international evaluation

- Free text
  - Sometimes difficult to identify clear similarities across trait definitions, recording proceedings, methodology applied etc.

- Limited to traits currently evaluated at international level
Since 1996 Official European Reference Laboratory for Zootechnics

From 2018: changes in EU Breeding Regulation, EURL_{lab} -> EURC_{entre}

The 2018 Animal Breeding Regulation addresses, among other things:

- Rules for the recognition of breed societies and breeding operations and for the approval of their breeding programmes.
“Rules for the recognition of breed societies and breeding operations and for the approval of their breeding programmes”

What does it exactly mean for Interbull and Interbull Centre?

- Stricter interaction between EURC and national Competent Authorities (political bodies)
- Providing necessary platform for any breeding organisations or breed societies to:
  - Share publicly their performance recording and genetic evaluation procedures
  - Assess soundness of the models applied and refer back to C.A.

GE Forms and its current platform NOT UP for the job!
Database platform entirely developed and hosted at the Interbull Centre

- Database language: PostgreSQL
- Server side: powered by Python and Web2py
- Client side: developed in JavaScript, jQuery and JSTree

Enables users to upload descriptive information regarding **Performance Recording, National Genetic Evaluation systems and Publication Policies.**

Accessible worldwide to all Cattle Breeding Organisations regardless of their involvement with Interbull activities

β-version released in March
Why PREP? What are its Benefits?

PREP prepares us all for new opportunities

- PREP is widening the scope: sharing information for additional breeds, populations and traits
- PREP will, with time, replace the way National Genetic Information (GE) forms will be displayed:
  - Descriptive information per trait rather than trait-group
  - Reviewed and Improved/Expanded questions
  - Electronic Forms rather than flat files
  - List of pre-defined answers rather than free text
  - Easy comparison of different information available
  - Providing information on traits beyond what is included in the current international evaluations

Improving the content, details and quality of information reported

Facilitating submission and frequency of updated information

Improving harmonization and standardization

Central part of a newly proposed pipeline for identifying next suitable traits to be included in the international evaluations
New electronic forms for:

- Organisation’s information
- Revised Electronic GE forms for:
  - **Production Traits** (milk, fat, protein)
  - **Calving Traits** (calving ease, stillbirth – direct & maternal)
    - Forms populated with latest GE’s information available
  - **Other traits** to be considered for international evaluation
Each electronic form is made up of a series of questions in a tree-structure.

The tree-structure gets created ad-hoc depending on the number of breeds/traits defined by the user.
Special in-built functionalities allows copying of answers between multiple sections

- Possibility to further edit copied answers to adjust them to any specific breed/trait situation
- Possibility to either save partially filled form (for resuming work later on) or submit completed ones
- Inclusion of electronic forms for the remaining currently evaluated traits (udder health, fertility, longevity, workability, conformation, interbeef traits)
- Inclusion of electronic forms for genomic evaluations
- Improving the way information are displayed
- Developing “ready to use” query for getting quick and easy overview of the information
  - At countries level
  - At breed level
  - At methodology level
  - ...

PREP: What is Next
WELCOME TO PREP!!!!

https://prep.interbull.org

THANKS FOR LISTENING!
IT'S TIME FOR QUESTIONS!