International beef evaluation for Carcass traits

Fernando Macedo
Interbull Open Meeting 2023, Lyon, France
• Interbeef at a glance
• Carcass traits
• From R&D to a Service
• Impact on other traits’ evaluations:
  Genetic Groups
• Next steps
Interbeef evaluations

- Adapted to the beef industry
  - Low use of A.I. within herds (10-15%)
  - Low connection across country
- AMACI* model (Phocas et al., 2005)
  - Use of phenotypes
  - Different models for each country
  - Across country co-variances

*Animal Model accounting for Across Country Interactions
Research and development

• Done by participating countries and Interbull Centre
  • Calving – Czech Republic
  • Animal weaning weight – Ireland
  • Carcass – Great Britain & Ireland
  • Female fertility – Germany
• Development of models and pipelines
• Process: Research > Pilot > Test > Routine
A goal since the beginning of the Interbeef WG

- Survey NGEC GBR (SRUC) (May 2014)
Carcass traits particularities

- Carcass weight & carcass quality
- Males, females and steers (EUROP: A, B, C, D, E)
- Trait definition can differ between EU and non-EU countries (different grades)
- Crossbreed animals
- No maternal effect
- Multi-trait models considering also weaning weight
## Recorded Traits - survey 2014

<table>
<thead>
<tr>
<th>Trait</th>
<th>CHE</th>
<th>CZE</th>
<th>DNK</th>
<th>FIN</th>
<th>SWE</th>
<th>FRA</th>
<th>GBR</th>
<th>IRL</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Weight</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>C. Conformation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>C. Fat</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Individual Primal Cuts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Total meat yield</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Tenderness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Age at slaughter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Recommended starting with:

- Carcass weight
- Carcass conformation
- Carcass fat
• Research runs started by Ireland
  • Traits: carcass weight, conformation and fat
  • First data call – September 2018
• Countries: Denmark, Finland, Sweden, Switzerland, Great Britain (GBR) and Ireland (IRL)
• Breeds: Limousin, Charolais and Simmental
Last research run December 2022
Results were considered satisfactory
Test run April 2023
Participants GBR and IRL

### Performances

<table>
<thead>
<tr>
<th>Trait</th>
<th>CHA Total: 1,620,279</th>
<th>LIM Total: 1,619,571</th>
<th>SIM Total: 450,708</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GBR</td>
<td>IRL</td>
<td>GBR</td>
</tr>
<tr>
<td>CWE, CFA, CCO</td>
<td>151,593*</td>
<td>388,500*</td>
<td>153,600*</td>
</tr>
</tbody>
</table>

* per each trait

### Pedigree/EBVs

<table>
<thead>
<tr>
<th></th>
<th>CHA</th>
<th>LIM</th>
<th>SIM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animals</td>
<td>1,232,423</td>
<td>1,276,613</td>
<td>361,419</td>
</tr>
</tbody>
</table>
1st Routine run October 2023

Carcass traits are prime goals trait in Ireland. The Interbeef evaluation for carcass traits will expand the capacity for farmers and the industry to select the best bulls to optimise profit (ICBF)

Inclusion of carcass traits in Interbeef will enhance our national evaluations for these traits and make the Interbeef service more relevant to our breeders (AHDB)
Impact on other traits’ evaluation

- Inclusion of Genetic Groups
  - Discussion started in the Carcass WG
  - Implementation extended also to other evaluated trait groups
Next steps

- Genomic Evaluation
- New countries
- Expand to more breeds
- Age at Slaughter (GenTORE)
- Beef on dairy
Acknowledgements
Kim Matthews and Harriet Bunning (AHDB)
Ross Evans and Thierry Pabiou (ICBF)

Thank you!