

INTERBEEF Technical Group meeting 08th March 2016

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1. Opening

Eric Venot and Andrew Cromie in their capacity as chairmen of the Interbeef Technical and Working Groups welcomed everyone and asked for a round of introductions Participants and apologies (Attached as appendix 1). Special recognition for Thomas Schmidt for organising the meeting in Salzburg.

2. Adoption of Agenda

Eric briefly went through the agenda: country feed backs on calving test run results were added. The agenda which was circulated at the start of the meeting was adopted.

3. Minutes of Meeting 8th June 2015 Krackow, Poland

The minutes from the previous meeting were discussed. Discussion from Christian Stricker around the previous test run with Swiss data and problems in relation to the test ebvs: this problem has been rectified since then (related to unadjusted data sent for test run but national evaluation uses adjusted weaning weight). Switzerland now sends adjusted weaning weights at 200 days to IDEA.

4. Interbeef routine genetic evaluations for weaning weight (direct and maternal) – Eva Hjerpe (ITB) and Eric Venot (FRA)

- Specific issues raised from last meeting;
 - (i) publication rules,
 - (ii) validation reports,
 - (iii) reference contact list,
 - (iv) process for making proofs “official”,
 - (v) Including animal status (e.g., AI sire) in publication file.

Eva gave a general description of last routine Interbeef evaluation and details on specific issues raised in Krakow: see the power point for details.

Discussion on point (v): Eric Venot (EV) what is the best way to do this? Add to the publication file? Christian (CS): Why do we need this? EV: Needed by countries for potential procurement of foreign bulls. Code is confined to 2 digits i.e. 00, 10, 15, 20. Eva (EH) Preference for ITBC for similar coding to dairy. Laurent (LG) Genomic category is important. EV: need discussion on all necessary classifications. Fritz (FR): Should be consistent with the dairy ones for ease of implementation. Andrew (AC): Agree with Fritz. Keep the existing four but with some different cases in beef though i.e. Natural service sires are more predominant in beef. EV: Recommendation is to proceed with existing four categories and engage in discussion on new categories (France, Germany and Ireland will engage on the new categories and put forward recommendations). EV: will need to specify the status in each country to get over situation where a bull is an AI sire in one country (IRL) but not in another country (FRA). This information may be of benefit to importing country (e.g. FRA). ITB will collate all the files.

This needs further discussion within a group with: Interbull Center, Pabiou, Fritz, Griffon, Venot

Discussion on point (ii):

Genetic evaluation summary material & result validation (EV)

Goal: Summary results to be provided by ITBC centre to help participating countries to detect potential problems at an early stage. This will help to reduce the validation period after each run.

Metrics

- Comparison of number of animals in run and run -1.
- General statistics on performance data, means, stdev, min, max
- Correlations for ebvs and reliabilities. Printing of animals losing reliabilities. Animals losing pedigree, data etc. changed ID etc.

EV: Ideally this work would be done at the ITBC centre in order not to repeat it in each participating countries. Hossein (HJ) mentioned he has raised concerns about this before. AC: Experience can be learned from dairy situation. These would be summary statistics that the ITBC centre would provide but there would be no expectation on the ITBC to deal with queries in relation to these statistics. These statistics would be particularly relevant to new countries participating but with potentially limiting capacity to analyse results. HJ: Most of the summary statistics are actually calculated (exception of graphs). Eva will present some slides in the Working Group meeting on this. EV: This will just be a vehicle to reduce the validation work. Decision to amend the agenda and present Eva's slides now. Toine (TR): Are the statistics for all countries available to all countries? All statistics should be available for all countries.

Eva: Roles and Responsibilities presentation related to Interbeef Code of Practice documentation. Presentation went through all the comprehensive statistics that are run for each evaluation. EH: Danger here is that counties will rely solely on the results from the ITBC and not do their own checking. AC: Pre-checking of data in dairy helps to identify problems at an earlier stage i.e. before the evaluation run. Perhaps there are some pre evaluation checks on the data.

AC: Will set up a group to take this further. TR: Aspect of this can in the future be applied to national evaluations. RE: Potential to make some aspects of these statistics available even prior to the evaluation run i.e. aspects related to the phenotypic data.

Group will consist of Fritz, Thierry, Ross, Amandine and someone from the ITBC.

Addition of name to the validation file. Recommendation that if no name is present then just leave blank instead of "unknown". Discussion from ER on IDs in IDEA database. TP: Practise ICAR recommendation to keep the name as is in the country of origin. Problem is the length of the ID is

too long for IDEA database (19 characters long currently). Kirsty (KM): Has to strip out characters if >12 in length but uses a cross reference file. HJ: ITBC will look at the problem and address it. TR: Needs to be addressed at the ITBC centre. EV: Potentially requires amendments to the INTERBEEF code of practice.

Presentation on invalid IDs in the IDEA database. (Amadine Launay)

Recommendation from Amadine to get rid of the invalid patch in interbeef programs in order to make pedigree validation in the IDEA useful. Most of the invalid ids are related to animals submitted by Ireland. TP: Reason for this is that Ireland historically gave a default country of origin of FRA to animals which were not identified in ICBF as being from IRL or GBR. TP: will take action and address these from the IRL side. EV: Need to close the book on these animals as they are old and move on. Also correcting these will allow decommissioning of the invalid patch currently in place in the IDEA database. KM: Will look at this on the GBR side. TR: This problem is not just related to FRA. KM: Problem with Northern Ireland IDs as they are not in the BCMS database in the UK. Need to contact relevant people in Northern Ireland.

Recommendation to share the list of invalid but publishable bulls from Amadine's presentation to sort out those bulls. The numbers are not very large for CHA and LIM but these bulls maybe quite important. Need to interact with Valentina Palucci on this to see what help can be given from the ITBC. EV: Goal for the next routine run that no invalid animals will be in published files.

Point (i): Proposal for Interbeef publication rules for maternal AWW (Laurent Griffon)

Proposal in 605 publication file to have maternal EBV publication from INTERBEEF evaluation

- a) in at least one scale >40% (or 30%) reliability.
- b) a minimum of 15 daughters with at least 1 calf with performance data.
- c) a maternal ebv is only publishable if the bull has a publishable direct ebv

An exercise was carried out with the ITBC to test these proposed Interbeef rules. TP: Need to see the effect of the proposed rules on the publishable bulls in each country. HJ: Concern over the way the publication rules are set up. It might not be stable over time in the advent of genomics. EV: Purpose of the rules is to ensure there is data behind the ebvs and not being driven by the parentage. French publication rules include minimum number of daughters to ensure that reliability value for a published animal doesn't only rely on parentage. AC: Get the results of the exercise out the group for feedback: countries need to provide maternal EBV publication status for each animal. LG and EH will then apply these rules and send back to the group the results.

5. Update regarding relevant test runs/research for LIM and CHA breeds.

1.1. Calving performance – Zdenka Vesela (CZE)

New data from FRA, IRL and CZE for Charolais and from FRA, IRL, GBR and CZE for Limousine in September 2015. Some duplicates were identified for IRE which need to be resolved. EBV run based on existing genetic correlation work. MIX99 used for ebvs, MTDEC5 for reliabilities. EBVs distributed to research partners end February. Problem potentially for CZE and SWE for Limousine where direct and maternal correlation is positive but the initial genetic correlation is negative. Correlation matrix is getting bended to be positive for smaller countries, needs a heavier weighting in the bending process. Problem with the positive genetic-maternal

correlation is more pronounced for the Charolais. Currently running 2x2 bivariate parameter estimation runs for CHE and other countries.

Convergence issues are a problem due to lack of connection across countries. TP: Possibly need a new approach for parameter estimation. EV: Strange correlations between ebvs what is the reason? Zdenka (ZV) not sure but happy with the direct across country correlations but not the maternal correlations at present. HJ: Questions the ability of bivariate analyses to correctly ascertain accurate and biologically sensible correlations between countries. AC: Shares Hossein's concerns and would like to see some alternatives explored. EBVs are based on the estimated and banded correlations. If you had independent EBVs and estimate calving correlations then this might be better. FR: Grouping countries for the purpose of genetic correlations may be an alternative. TP: In the context of weaning weight, combining the Nordic countries into DFS made the genetic parameter estimation easier. LG: need same trait definition for country grouping.

Country feedbacks

- a) France (EV). EBV correlations presented were stratified by category of animals ranging from cows to published sires. Reliabilities are lower due to National evaluation including birth weight as a highly correlated trait. Conclusion: needs birth weight included as a predictor trait before move to publish in France.
- b) Ireland (TP). Based on purebred data. 170k Lim and 230k Cha. 1.6m if all Lim sired animals were available for inclusion in interbeef evaluation. For LIM correlation of 0.6 for 26k animals. Correlation increases to 0.7 for well proven sires. Reliability correlation only 0.21. A lot of bulls with crossbred data in Ireland and not in Interbeef evaluation. Conclusion: Needs crossbred data included to improve relationship between national and Interbeef evaluations.
- c) UK (KM). Happy with correlations for direct (0.81) between national and Interbeef for all UK animals evaluated (~200,000 animals). For highly reliable sires in both evaluations this correlation is 0.85. UK evaluation is a multi-trait model so correlations between reliabilities are not as strong. Conclusions: Initial results look positive.

EV: How to we plan the next steps? France will be moving to a 3 trait model soon with calving ease, birth weight and chest girth. FR: Countries should evaluate traits in a multi-trait environment at a national level but this is not possible at Interbeef level. EC: DFS countries would have a lot of birth weights. ZV: Most countries appear to have some level of birth-weight recording. KM: Combining the Interbeef ebvs with national evaluations becomes complexed particularly for maternal traits. AC: Short term steps such as calving traits evaluated with direct only effects or grouping countries for genetic parameter estimation may be needed to get international evaluations off the ground. HJ: Potential to run less complicated models where you evaluated calving ease on its own, birth weights etc but then use multiple trait MACE to combine these traits before passing these back to the participant countries. AC: Individual countries/research partners cannot be expected to deliver on this type of a project so it would need assistance/guidance from the ITBC.

EV: To summarise: DFS data needs to be sent. EC: data can now be sent in a joint model for DFS. IRL will also send in birth weight for next phase of the calving project.

FR: German data on calving difficulty is sparse at the moment. They need to work on it internally before submission of data to an Interbeef evaluation. Thomas (TS) would like to submit the data to see how the data quality compares with other countries. AC: IRL data quality is not good either and is of the opinion that data should be submitted to ITBC to allow a benchmarking of phenotypic data quality to take place. EV: Proposal that CZE team has a first work on Birth weight and have a conference call on this in June 2016 to discuss this further.

EV: remaining agenda to Wednesday morning with an earlier start at 8 am.

1.2. Female fertility – Friedrich Reinhardt (DEU).

5 participating countries for CHA and 6 for LIM.

Traits are Age 1st calving, Calving interval and number of Calvings. No. of calvings is at 78 months of age.

Parameter estimation done using PEST VCE software.

Edits: Age 1st calving 650-1450 days, 270-1450 for calving interval and a maximum of 5 repeated observations for No. of Calvings at 78 months.

In the context of No. of calvings trait probabilities are derived for cows with complete carrier. These probabilities are derived within breed and within country. Variance components were estimated using a sire model. Some high heritability estimates (>0.6) were found for age 1st calving for CHE, DEU and DFS for LIM. Some checks need to be done.

Next steps: new data call for participating countries.

Question was asked if they should only use complete data for the trait No. of calvings. EV: Some problems in France with herds/cows leaving recorded herds and only have partial information for some cows. EV asked other countries if they already have these traits evaluated to know if they already process this kind of information: Ireland evaluates age 1st calving, calving interval, survival. DFS countries have data but do not evaluate these traits currently. GBR evaluate age 1st calving as a binary trait. They also evaluate calving interval and lifespan. TS questioned the lower limit of 650 days for age 1st calving as being too high. Czech republic do not undertake an evaluation for these traits at present.

1.3. Use of cross-bred data (& fake ancestors) in international evaluations – Thierry Pabiou (IRE).

Thierry presented an alternative approach to handling crossbred data. The breed composition would be submitted in the 602 file for each country. The benefit to this approach is that there would be no extra processing needed at the INTERBULL stage. Recommendation was to test this using the Irish crossbred data and report this research to the next meeting.

6. Meeting summary.

- New columns in file 605 for animal status. This will be consistent with the dairy codes but with some additional categories such as genomic status.
- Invalid animals will be addressed with the goal that no invalid animals will be present in the publishable lists for each country.
- A group will be established to decipher the statistics/reports generated at the ITBC and agree on a set of statistics to provide to each country. This will then be included in the Code of Practise document.
- Animal IDs and Name with unusual characters will need to be addressed in the Code of Practice documentation.
- Calving evaluation update. Feedback from FRA indicates they would like to see birth weight included before publication of the calving ebvs. EV suggested it may be worthwhile to only look at direct birth weight for some countries and avoid looking at maternal effects for the moment. There was also a discussion on other traits. Only Denmark and Ireland submitted still birth data to date. Various other countries (FRA and GBR) are working on this trait. Ireland also evaluates

gestation length. Ross Concern was also expressed at the complexity/sustainability of multi-trait across country evaluations (RE). AC also expressed concern regarding feasibility of inclusion of additional countries when the existing Interbeef evaluations are very complex. RE suggested that perhaps the first phase of including birth weight was to look at the across country correlations for this trait before investigating birth weight and calving difficulty in the same evaluation. EV indicates that different participating countries can have different model complexity levels: for example France with maternal genetic and permanent environment effect included, others countries only with permanent environment and some with only direct genetic effect. This can be tested with BW.

- First reproduction results are encouraging but need to be finalized
- New method to include Crossbred animals in Interbeef will be tested in a test run.

7. Appendix 1 – List of Meeting Participants

First Name	Surname	Country	Organisation	Email address	type
Eric	Venot	France	INRA	eric.venot@jouy.inra.fr	chairman
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Draft 22nd March 2016