13 June 2014

Dear Hereford BREEDPLAN Member,

A number of improvements will be made to the Carcase EBVs that are calculated for Hereford animals within the June 2014 Hereford BREEDPLAN analysis.

The improvements relate to changes to the analysis of abattoir carcase information within the Hereford BREEDPLAN analysis and will result in the calculation of improved Carcase EBVs for animals on which abattoir measurements have been collected and their relatives. The EBVs for all other animals will generally be unaffected by these improvements.

**Background**

In contrast to most traits that are analysed within the Hereford BREEDPLAN analysis, there are a relatively small number of animals for which abattoir carcase measurements have been collected. Furthermore, most of this abattoir information was collected some time ago in research trials within the Beef CRC (pre-2000) and World Hereford Linkage project (2004).

An important role of the Hereford Progeny Test Project is consequently to collect much needed abattoir information on animals within the current Hereford population, with the Progeny Test Project representing the first significant collection of abattoir information on Hereford animals in over 10 years. The abattoir measurements not only enable the performance of the progeny from current Hereford sires to be evaluated, but provide valuable information that can be used to enhance the selection tools that are available to improve the carcase attributes of Hereford animals.

**Improvements to BREEDPLAN**

With the collection of comprehensive abattoir information and meat science measurements on over 350 animals from 27 sires within the first two cohorts within the Hereford Progeny Test Project, the Animal Genetics and Breeding Unit (AGBU) have been able to review the analysis of abattoir information within the Hereford BREEDPLAN analysis.

Resulting from this review, several improvements will be made to the analysis of abattoir information within the BREEDPLAN analysis.

**Adjustment factors** - differences in abattoir records are adjusted for non-genetic differences such as differences in the age of the animal (for carcase weight), and differences in carcase weight (for eye muscle area, fat depth, intramuscular fat). The adjustment factors that are used have been re-estimated to ensure the adjustments are appropriate for the performance information being collected on Hereford animals. This will result in changes for EBVs for some animals, particularly for eye muscle area.

**Review of Abattoir Measurements** – as part of a wider review of the measurements that have been collected within the progeny test programs that are currently conducted by several breed societies under the banner of “Beef Information Nucleus”, a comprehensive protocol for the collection of abattoir measurements within commercial abattoirs for genetic evaluation purposes has been developed. This protocol will now be used to guide the collection of abattoir measurements within the Hereford Progeny Test Project and will ensure the abattoir information collected is of the highest quality possible. In conjunction with the development of the collection protocol, the abattoir measurements
previously collected within the Progeny Test Project were carefully scrutinised and some revisions have subsequently been made to the abattoir measurements that are included in the BREEDPLAN analysis.

**Changes Resulting from Improvements**

The implementation of the improvements to the analysis of abattoir carcase measurements within the June 2014 Hereford BREEDPLAN analysis will result in the calculation of improved Carcase EBVs for animals for which abattoir measurements have been collected and their relatives. While on average the EBVs for animals will not change, some sires will re-rank for particular EBVs.

The EBVs for animals without abattoir performance information or related to animals with abattoir performance will generally be unaffected by these improvements.

**Future Improvements**

The collection of abattoir measurements in future cohorts of the Hereford Progeny Test Project will enable further improvements to be made to the Hereford BREEDPLAN analysis, which will further enhance the Carcase EBVs that are available to improve the carcase attributes of Hereford animals.

In particular, the genetic parameters for the carcase traits of Hereford animals will be re-estimated to ensure that the performance records recorded on Hereford animals are most appropriately analysed within the BREEDPLAN analysis. The genetic parameters include such things as the genetic variation expressed in each trait (e.g. trait heritability), as well as the correlations between abattoir traits and other traits. Importantly, the collection of the abattoir information in future cohorts will provide sufficient data to enable the relationship between abattoir carcase measurements and carcase measurements collected by live animal ultrasound scanning to be re-estimated.

Should you have queries regarding any of the improvements that will be implemented into the BREEDPLAN software at the June 2014 Hereford BREEDPLAN analysis, please do not hesitate to contact Andrew Byrne at SBTS by phone on (02) 6773 3357 (prior to June 20th) or Steve Skinner at BREEDPLAN on (02) 6773 3091.

Kind Regards

Andrew Byrne
Technical Officer