Enhancements to be made in the 2010 Summer Hereford GROUP BREEDPLAN Analysis, November 2009

A number of enhancements will be implemented to the BREEDPLAN software that is used to calculate EBVs for Hereford animals within the 2010 Summer Hereford GROUP BREEDPLAN analysis. These enhancements will all result in the calculation of improved BREEDPLAN EBVs and are part of the normal evolution of the BREEDPLAN software.

1. New analytical software

The increasing size of the Breed Society databases and the computational demands of the GROUP BREEDPLAN evaluation have required the development of more efficient analytical processes. The “solver” program is the statistical software behind the BREEDPLAN analysis that calculates the EBVs. An updated “solver” program has been developed that has quicker processing speed (ie “works faster”) and makes better estimates of the breeding values, particularly for animals with limited performance and pedigree data. The effect of the new program is likely to be greatest when comparing animals across years (ie current vs historic), rather than within year (ie contemporaries) and for traits that are less well recorded (eg mature cow weight) than the more widely recorded traits (eg growth traits).

2. Improved Calving Ease Analysis

The calving ease analysis has been modified to include additional depth in the pedigree information. This is to overcome limitations in pedigree structures that are associated with incomplete recording of calving difficulty scores.

As a result of this modification, Calving Ease EBVs will change significantly for some individual animals. Also, more spread in the Calving Ease EBVs will be evident. Given the importance of Calving Ease EBVs in the Hereford Selection Indexes, this change will also impact on the Selection Index values of some animals.

3. Revised handling of American & Canadian Hereford EPDs

The manner in which the North American EPDs are imported into the Hereford GROUP BREEDPLAN analysis has been modified as a result of changes that have been made recently to the North American Hereford Genetic Evaluation. The changes to the North American evaluation involve a move to reporting carcase EPDs as genetic differences in each trait at a standard carcase weight (rather than as differences at a standard age) and expansion to the analysis to a Pan American evaluation, whereby animals from USA, Canada, Uruguay and Argentina are included and analysed together

The effect of these modifications will be most evident in the EBVs for animals imported from North America that don’t have a large number of performance recorded progeny recorded in Australia and New Zealand.

4. Re-estimated Genetic Parameters & Adjustment Factors

The genetic parameters and adjustment factors utilised within the BREEDPLAN analysis have been re-estimated by the Animal Genetics & Breeding Unit (AGBU). The genetic parameters include the heritability of each trait and the correlations between the different traits. The adjustment factors are the
adjustments that are made to the performance records to remove the non-genetic effects of age and age of dam.

These new genetic parameters and adjustment factors will influence the EBVs that are calculated for all animals. For some traits the effect will be minimal but for other traits the effect may be significant. Accuracies of EBVs will also be affected, due to changes in trait heritabilities and the revised influence of correlated traits.

5. Updated Genetic Base

The genetic base is a historical group of animals that forms the benchmark within the Hereford BREEDPLAN analysis. The genetic base that is currently used within the Hereford GROUP BREEDPLAN analysis defines the base group as all animals born in 1990. The genetic base has been updated to a more recent group of animals and will now be defined as all animals born in 1995. This change will have little or no effect on the EBVs that are reported for animals.

As a result of all of these enhancements, you should anticipate changes in the EBVs for some of your animals at the upcoming 2010 Summer GROUP BREEDPLAN analysis. Importantly, the new EBVs will provide an improved estimate of the breeding value of your animals for each trait.

Should you have further queries regarding any of the enhancements that will be implemented into the BREEDPLAN software, please do not hesitate to contact Andrew Byrne at SBTS by phone on (02) 6773 3357.