



## TechTalk September 2014



### The Importance of Whole Herd Recording

The saying “You only get out of something what you put into it” is particularly true of performance recording for genetic evaluation, in terms of both the volume and quality of data recorded. Some breeders may choose to performance record only their ‘best animals’ which they plan to select as future sires or dams, or with the aim of bringing up the average EBVs of the herd. But only recording your ‘best’ calves won’t necessarily result in ‘better’ EBVs. Breeders should be aware that significant problems can arise from choosing to only performance record a subset of animals from a contemporary group. If performance records are provided for a subset of a calf drop, it provides BREEDPLAN with an inaccurate picture of the average performance of the animals in that contemporary group which can result in EBVs which are biased.

One of the basic mechanisms of the BREEDPLAN analysis is the comparison of animals within contemporary groups, i.e. animals who have had a similar opportunity to perform. In a situation where only a proportion of a contemporary group has been recorded, the performance information for an animal will only be compared with the “selection” that has been recorded. If this “selection” is not an accurate reflection of the entire contemporary group, then BREEDPLAN cannot make faire comparisons and the EBVs produced may be biased.

#### Selective Performance Recording

Take for example a situation where a producer has only submitted performance information for the ‘best animals’ in a contemporary group versus submitting information for all animals in the contemporary group (Table 1).

The problem caused by selective performance recorded is demonstrated if we consider animal A7. In Scenario 1, all ten calves in the contemporary group have a 200 day weight recorded and A7 is 4kg heavier than the average of the group (237kg vs 233kg). This is an accurate reflection of how this animal has performed compared to its peers.

Animal	200 Day Wt. Scenario 1	200 Day Wt. Scenario 2
A1	255	255
A2	238	238
A3	261	261
A4	205	X
A5	187	X
A6	265	265
A7	237	237
A8	195	X
A9	258	258
A10	228	X
<b>Average</b>	<b>233kg</b>	<b>252kg</b>

Table 1. Selective performance recording scenario for 200 Day Weight (kg) where weights for all animals in contemporary group are submitted (Scenario 1) and when only the heaviest animals are recorded (Scenario 2).

In Scenario 2 the weights from the lightest 4 calves have not been recorded with BREEDPLAN and the contemporary group average is now 252kg. This means that A7 is now 15kg lighter than the average of the group (237kg vs 252kg). As BREEDPLAN can only use what information has been recorded, the subsequent EBVs that are calculated from this performance will also be biased. Comparing the two scenarios, A7 has gone from performing better than average to well



below average as a result of selective recording, and this would be evident in the resulting EBVs.

Similarly traits such as Calving Ease and Days to Calving, which rely upon variation within the trait, will be affected by selective recording. For instance, only recording Days to Calving information for those heifers which calve or are added to inventory does not accurately reflect the female fertility of a herd. The heifers (or cows) that do not calve provide as much information to the analysis as those that do.

Selective recording can also influence EBV calculation by reducing the number of animals represented in a contemporary group. Where only a small number of animals are represented in a contemporary group, there are fewer animals to which an individual's performance can be compared, and that performance cannot be used 'effectively' by BREEDPLAN. Selective recording may result in an increased incidence of small contemporary groups, rendering what performance information that is submitted ineffective.

### **Whole Herd Recording**

Wherever possible seedstock herds should adopt a whole herd recording strategy. This involves recording all calves with the relevant breed society (dead or alive) and recording performance for all



animals in the contemporary group with BREEDPLAN. Because BREEDPLAN uses not just individual performance in the calculation of EBVs, but also the performance of all known relatives, it is also recommended that performance be recorded on all available animals i.e. steers, heifers and bulls as opposed to just performance recording bulls.

For more information about common performance recording problems and contemporary group formation visit the Technical section of the BREEDPLAN website for the tipsheet 'Common Performance Recording Problems'. The booklet 'Getting Started with BREEDPLAN' also describes contemporary group formation in more detail.