Performance Recording for Genetic Evaluation
“The Benefits”

The Australian Wagyu Association (AWA) has taken an innovative step to encourage Wagyu breeders to record and submit pedigree and performance data to the AWA and Wagyu BREEDPLAN respectively. This is in the form of subsidies, which is fully explained in the AWA’s Executives Officers article in this publication. The main purpose of this action is to build the AWA’s pedigree and performance database so a trial GROUP BREEDPLAN analysis can be undertaken, with the progression to an annual GROUP BREEDPLAN analysis where the results can be published and used by industry.

Listed below are several commonly asked questions that will assist you to better understand performance recording with BREEDPLAN and help you take advantage of the AWAs offer.

What are the benefits?
The benefits your herd will obtain from performance recording and being included in the Wagyu GROUP BREEDPLAN analysis are:

- **Receive a sophisticated report** for your herd which includes Estimated Breeding Values (EBVs) for your sires, dams, heifer progeny, bull progeny and steer progeny. It also contains genetic trends for your herd benchmarked against the breed average.
- **Effective identification of animals** with the best genetic package for you and your bull buying clients (in the case of bull breeders). It enables you to identify and select against the normal trait antagonisms. For example increase growth and muscling, while maintaining or increasing marbling.
- **Monitor the genetic progress of your herd** across a range of economically important traits. This allows you to identify how your selections are impacting on your herd’s genetic progress for a range of traits.
- **Access to other genetic tools** that assist selection and genetic progress such as BreedObject Selection Indexes, TakeStock and Internet Solutions EBV related functions (e.g. EBV enquiry or sale catalogues with EBVs displayed).

What is BREEDPLAN?
BREEDPLAN is a modern genetic evaluation system for beef cattle. It offers the potential to accelerate genetic progress, tighten up breeding operations, improve productivity and increase prices for cattle sold for breeding and slaughter.

BREEDPLAN uses Best Linear Unbiased Prediction (BLUP) technology to produce Estimated Breeding Values (EBVs) for recorded cattle for a range of traits (e.g. weight gain, fertility).

BREEDPLAN is integrated with the pedigree systems of many cattle breeds. It is the national beef recording scheme in Australia, New Zealand, Thailand and the Philippines. Its usage is increasing in the United States, Canada, United Kingdom, Argentina and Mexico.
**What is an EBV?**
An animal’s breeding value is its genetic merit, half of which will be passed on to its progeny. While we will never know the exact breeding value, for performance traits it is possible to make good estimates. An Estimated Breeding Value (EBV) is the prediction of the genetic merit of an animal for a particular trait.

BREEDPLAN EBVs are calculated from the records of individual herds stored on the database. This includes:-
- the animal’s own performance
- the performance of all known relatives in the herd
- the relationship between performance of different traits
- the performance of all animals in the herd over all years of recording

**Which EBV Traits are computed now?**
The BREEDPLAN system currently provides EBVs for up to nineteen traits. These are available in the general areas of:-
- calving ease
- growth
- fertility
- carcase
- other, such as docility.

The EBVs that are available for your herd will depend upon the data that you and other Wagyu breeders collect.

**What are Within-herd EBVs?**
The calculation of Within-herd EBVs is the only option currently available to AWA members. The genetic base is calculated separately for each herd based on its first 1000 performance records. The performance of related cattle outside the individual herd is ignored. Within-herd EBVs are obviously not comparable across herds.

**What are GROUP EBVs?**
BREEDPLAN is able to separate out genetic from environmental influences. In addition, the performance records of different herds are linked through the use of AI sires and their performance recorded progeny across herds. Sale of bulls and cows from one herd to another builds further genetic links.

The across herd analysis of all performance data on a breed society’s database is called GROUP BREEDPLAN. The EBVs calculated out of an analysis of this data are then comparable across herds, because of the genetic links between herds.

To obtain the benefits of GROUP EBVS (i.e being able to compare the genetic merit of animals across herds) a greater number of Wagyu herds must record and submit pedigree and performance data to the AWA and BREEDPLAN respectively.
What is a genetic trend?
Because environment is separated out from genetics in the BREEDPLAN evaluation, and the data is analysed over a number of years, it is possible to calculate the genetic trend for each trait. This trend can be calculated for an individual herd or the breed as a whole. As a breeder you will be able to see if you are making progress in the traits you're selecting for, and the correlated effect on other economically important traits.

What do I need to record?
Recording pedigree and performance data for genetic evaluation is relatively simple. The minimum requirements are:

- Record birth dates
- Tag/tattoo your calves
- Record sire and dam of each calf
- Weigh calves at least once

That is, the fourth step is the only work additional to keeping your normal breeding records. Of course, if you’re a performance enthusiast you can go a lot further and record the following optional information:-

- Birth weight
- Yearling and 18 month old weights
- Mature weights of dams
- Live animal fat (including intramuscular fat) and muscle scans
- Scrotal circumferences
- Date bull introduced
- Calving difficulty scores

Before you start performance recording for Wagyu BREEDPLAN you should spend some time identifying the traits that are important to you and your clients (in the case of bull breeders). Once you have done this you can obtain information on the related traits you can record for genetic evaluation purposes and fit the recording of these traits into the management of your herd.

Where can I find further information?
The AWA is involved in the Southern Beef Technology Services (SBTS) project. A serviced offered by SBTS to AWA members is performance recording and BREEDPLAN technical support. This support is via an informative website (http://sbts.une.edu.au) or through the SBTS Technical officer for Wagyu, Christian Duff (Mobile: 0418 268 158 or Email: christian@sbts.une.edu.au)

AWA members interested in enrolling in Wagyu BREEDPLAN can contact Michael Beattie on Ph: 02 677 3355 or email: wagyu@breedplan.une.edu.au .

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