

2003/N06



## Producer Research Support

### BREEDPLAN Development and Extension

Australian Wagyu Association Ltd



### The project

With greater demand for Wagyu products in domestic and international markets, breeders need a method of measuring genetic gain and tools to assist them in their selection decisions. EBVs are the key. Given the limited access to Wagyu genetic material internationally, Australia is in an ideal position to develop the Wagyu breed and promote global export markets for Wagyu genetics provided quality objective information is available.

The AWA wished to promote the use of multibreed BREEDPLAN technology to Wagyu breeders, by using the first group BREEDPLAN run to demonstrate the value of the technology in assisting Wagyu breeders identify those bloodlines which will add value to Wagyu carcasses.

In addition the AWA also wanted to establish recording protocols to capture future carcass data unique to the Wagyu breed (eg. high marbling).

The project will be expanded later on to further develop traits specific to the Japanese market.

### Objectives

The purpose of this project was to improve the use and awareness of BREEDPLAN technology among the Wagyu breeders of Australia.

Its specific objectives (to be achieved by 30 June 2005), were to:

1. Conduct four workshops on the use of BREEDPLAN technology for Wagyu producers;
2. Increase the number of members of the Wagyu Association having bulls registered on BREEDPLAN to more than 50%; and
3. Increase the number of AI and locally sired bulls registered on BREEDPLAN to more than 50.

### What was done

The group set out to conduct four composite breeders' field days – one in Victoria, two in New South Wales and one in Queensland.

A total of six field days were held – one each in Western Australia, Queensland and New South Wales, two in Victoria and one during the BIA Conference in Western Australia in June 2004.

The program at these field days typically included an introduction by the property owner, an introduction from the local state based departmental officer, a session on composite and cross breeding, and a session on composites and carcasses followed by the advantages of composites in market compliance, and thoughts on implementing composite breeding.

A session on matching cattle to the environment for adaptability, and a further session on designing cattle for market and management and then cattle on display (bulls, cows and calves) was also included.

At each session breeders were asked to complete a questionnaire.

The Australian Wagyu Association Ltd (AWA) is satisfied that the project has been a very worthwhile exercise for developing Wagyu group BREEDPLAN and educating Australian Wagyu breeders about BREEDPLAN. In particular, it has highlighted a range of issues that uncovered the need for Wagyu-specific research in future.

It is expected that participation in Wagyu BREEDPLAN will continue to increase but based on the data collected at this stage, may be constrained by the fact that Wagyu-specific genetic parameters cannot be calculated.

There is a need to develop industry guidelines for collecting data in feedlot harvesting systems and the AWA is certainly committed to supporting trial work which will be undertaken in view of this vision.

### Contact details

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## Producer Research Support

MLA Producer Research Support offers support funding of up to \$15,000 over three years for groups of producers keen to be active in on-farm research and demonstration trials.

These activities include:

- Producer Initiated Research and Development
- More Beef from Pastures demonstration trials
- Prime Time Wean More Lambs demonstration trials
- Sustainable and productive grazing grants.

Contact Gerald Martin -  
Producer Research Support Coordinator.

Tel 08 8556 2900 or  
producersupport@mla.com.au

## What was done

### BREEDPLAN Workshops

Four BREEDPLAN workshops were conducted in Queensland, New South Wales and Victoria to coincide with events run by the Australian Wagyu Association (AWA) or Meat & Livestock Australia (MLA).

#### Workshop 1 - Toowoomba

This first BREEDPLAN workshop was partly interactive and emphasised basic performance recording principles, traits and their usefulness, importance and relevance of contemporary group structure, concepts of EBV calculations with emphasis on comparisons within contemporaries, use of genetic linkage, data adjustments and genetic parameters.

The workshop was rounded off with an activity on how to utilise EBV information, the use of Internet Solutions and general discussion of Wagyu in an industry context. The workshop notes were customised for Wagyu with special emphasis on live animal ultrasound scanning, abattoir carcass data and influence of feedlot systems and harvesting of animals for slaughter on contemporary group structures and genetic evaluations.

#### Workshops 2 & 3 - Armidale & Hamilton

The second and third BREEDPLAN workshops were run in Armidale, NSW and Hamilton, VIC in June 2004, to deliberately coincide with the MLA-sponsored Beef Genetic Horizons Expos. These half day "BREEDPLAN Basics" workshops were designed to support the Beef Genetic Horizons program by arming participants with information about the fundamentals of BREEDPLAN and how the technology can be implemented in their breeding programs.

Topics covered included an introduction to BREEDPLAN, the BREEDPLAN traits, EBV calculation, the principles of using EBVs incorporated in an interactive bull selection exercise, and discussion on the performance recording process. While the workshop content was applicable to members from all breed designations, there was particular emphasis placed on issues pertinent to Wagyu breeders such as the collection of carcass data and carcass EBVs. Workshop participants each received a copy of the workshop notes and other BREEDPLAN resource material.

#### Workshop 4 - Gold Coast

The fourth BREEDPLAN workshop was held in conjunction with the AWA's annual conference. In addition to covering the principles of BREEDPLAN in a similar fashion to previous workshops, there was a stronger focus on the collection and genetic evaluation of carcass data. To help pull together the practical and the theoretical, Richard Eldershaw and Takao Suzuki from Ranger's Valley Feedlot were invited to speak about data management from a feedlot perspective and how this links into BREEDPLAN. The benefits of, and potential for, ultrasound scanning of Wagyu cattle in the feedlot to predict marbling in carcasses were also discussed. A highlight of the workshop was discussion on the outcomes of the first trial group BREEDPLAN analysis, which demonstrated some interesting data trends and helped to educate participants about aspects of group BREEDPLAN.

### **BREEDPLAN Promotion**

General promotion of BREEDPLAN, member updates on the progress of Wagyu group BREEDPLAN and the publicity surrounding the BREEDPLAN workshops have been used to increase the number of members and animals recorded with BREEDPLAN.

Promotion included:

- articles in the AWA's publication The Australian Wagyu Update, distributed three times per year to AWA members;
- exposure in the BREEDPLAN News publication developed and published by ABRI;
- numerous AWA member mailouts relating to BREEDPLAN in general, the collection of pedigree and performance data and BREEDPLAN workshops; and
- presentations about BREEDPLAN, and Wagyu group BREEDPLAN specifically at the 2nd World Wagyu Symposium in 2003 and the AWA conference in 2004.

### **Financial incentives**

In an attempt to maximise the amount of pedigree and performance data collected for Wagyu group BREEDPLAN, the Agricultural Business Research Institute (ABRI) and AWA co-funded a total data processing subsidy in excess of \$30 000, which enabled members to have their pedigree and performance data loaded on the database at no cost. This initiative was integral to the large increase in performance-recorded animals on the database and a greater number of herds participating in BREEDPLAN.

### **First GROUP BREEDPLAN Analysis**

Due to the differing biology of Wagyu cattle, technical specialists considered the calculation of Wagyu-specific genetic parameters to be an extremely important and essential component for the progression of Wagyu group BREEDPLAN. Unfortunately, resource limitations prevented staff at the Animal Genetics and Breeding Unit (AGBU) from interrogating the dataset and estimating genetic parameters for a Wagyu-specific group BREEDPLAN analysis prior to the conference in November 2004. This inhibited the release of group BREEDPLAN EBVs calculated using Wagyu parameters, as previously anticipated.

The first preliminary group BREEDPLAN analysis was conducted utilising the genetic parameters of another breed. The results of this analysis – trial group BREEDPLAN EBVs – were not released to the public; however Jack Allen did discuss the results of the analysis in non-specific terms in his presentation at the conference.

## What happened?

### BREEDPLAN Workshops

Four successful BREEDPLAN workshops were carried out. There was a slight deviation in the timing, location and content of the workshops from the original project plan. Over 40% of total members of Wagyu Society (or just over 100 breeders) attended one of the four workshops held.

### BREEDPLAN Members

The term 'members' has been specifically regarded as active AWA members who register more than 30 progeny per year (indicating they have a herd of at least 30 cows). Just over 23% increase in members now recording on BREEDPLAN and 57% of breeders with more than 30 progeny registered each year now recording (target was 50%) was recorded.

Only a very small portion of the AWA membership is actively registering their entire calf drop each year. For example, for calves born in 2002 (project start), 66 out of approximately 250 members eligible to register cattle registered a total of 1204 calves. There has been fluctuation in the number of animals registered by individual herds during the project period and the number of BREEDPLAN members because it has been a development phase for pedigree and performance recording in the Wagyu breed. However, the total number of financial BREEDPLAN members has grown from four to eleven over the life of the project.

### Animals Recorded on BREEDPLAN

In the first group BREEDPLAN analysis, 1427 sires were genetically evaluated. This total included both AI and locally sired bulls. Twelve of the eighteen herds included in the analysis were genetically linked by sires common to more than one herd.

The number of performance-recorded animals on the AWA database has continued to grow dramatically as an upshot of this project and the financial incentives offered by the AWA and ABRI.

At this stage, within-herd BREEDPLAN analyses will continue for BREEDPLAN members actively submitting performance data until such time that an across-herd group BREEDPLAN analysis is run on a more regular basis.

### Implications of Project on Industry

Increased awareness and understanding about BREEDPLAN for the Wagyu breeders of Australia has been one of the most important outcomes of the project. It has stimulated interest and enquiry and there has been a resultant increase in the number of members who are performance recording.

Although more difficult to quantify, the project has also aided in developing a pedigree and performance recording culture which is still in its embryonic stages in the Wagyu breed. To continue the education and extension of BREEDPLAN to members, the AWA Council has resolved that they will be a participating breed society in the Southern Technical Extension Service, partly funded by MLA and ABRI and due to commence in January 2006. They believe that this is a timely service to AWA members as more become involved in BREEDPLAN and group BREEDPLAN continues to evolve.



Review of the Wagyu data indicated two distinct production systems – short and long fed. Short fed animals are characteristically fed for less than 150 days on a feed ration that aims for 1 – 1.2kg liveweight gain per day. Long fed animals are generally fed for 300 – 450 days on a feed ration aiming for around 0.6kg liveweight gain per day.

There is a general feeling in the Wagyu industry that Wagyu are better suited to the long fed system. This is supported by the available data as most of the short fed data came from research trials while industry supplied the long fed data.

There is also a need to get a better handle on analysing abattoir carcass data that has been collected on animals harvested from the feedlot.

### **Discussion**

On the whole, the AWA found it positive to offer BREEDPLAN educational opportunities to the Wagyu industry and see a response reflected in increased participation. It was also frustrating to come to terms with the fact that particular aspects of the data collected limited its potential for genetic evaluation and the ability to calculate Wagyu-specific parameters.

### **Next steps**

The industry data collected highlights the problems for genetic evaluations where animals are harvested from feedlots. When this is combined with the unique biology of Wagyu cattle to marble without excess external fat, the AWA recognises the need to set up trials that will provide useful data to enable Wagyu-specific genetic parameters to be developed.

The Wagyu trials will need to focus on the collection of:

- Birth and pedigree information;
- Pre-feedlot performance, including ultrasound scan;
- Feedlot data where possible, including early/mid-term ultrasound scans and weights;
- Pre-harvest weight(s) and possibly fat probe scans, prior to first draft of animals to abattoir;
- Abattoir data within reasonable contemporary groups with a view to organised slaughter over a pre-determined time frame; and
- There may be some opportunity to collect traits specifically targeted in the Japanese industry.

### **MLA also recommends**

#### **EDGEnetwork**

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