The Breeders Bulletin

Summer 2014

Welcome to the Summer edition of the Breeders Bulletin

Christmas holiday opening hours

Please be advised that the Sheep Genetics office will close at lunchtime on the 24th of December and re-open on Monday the 5th of January 2015. The staff at Sheep Genetics would like to wish everyone a safe and happy holiday period.

The final LAMBPLAN analysis for 2014 will close on Wednesday 31st of December at 5pm NSW time, any submissions after this will be included in the 15th of January 2015 analysis.

The MERINOSELECT analysis will be as per normal, with the last analysis of 2014 closing on Monday 21st of December, and the first analysis of 2015 data submission will close on Wednesday 7th January.

Please refer to the enclosed Calendar for all 2015 data submission dates.

LAMBPLAN Development Officer

Sheep Genetics would like to welcome Will Chaffey on board as the LAMBPLAN Development Officer.

Will has recently completed a 4 year double degree of Bachelor of Agriculture and Bachelor of Business at the University of New England. During this time he gained experience in various sheep related businesses including seed stock producers, wool brokering agents, stock and station agents and commercial sheep producers. Prior to starting his university degree Will worked as a jackaroo on a merino stud in Western NSW.

Will is from a mixed enterprise family farm near Tamworth in North West, New South Wales. He attended Farrer High and enjoyed being involved in the schools White Suffolk stud. While studying Will worked at Practical Systems a farm management, software development business, and has a strong understanding of the benefits of livestock data collection and interpretation.

In his spare time Will enjoys water skiing, rugby union, tennis, cricket, travelling, working and training sheep dogs and relaxing with friends and family. Will is very excited to start working with the Sheep Genetics team, and looks forward to meeting everyone in his travels.

Contents

SHEEP GENETICS

Technical Update Dr Rob Banks AGBU

Balancing traits in breeding dual-purpose sheep

The breeding ewe is the production base of the Australian sheep industry. Whether she is a first-cross ewe, a composite, or a Merino, she is expected to rear at least one lamb per year, pass on to that lamb genes for growth and carcase merit and wool production (with that balance depending on the type of ewe and the production system), and do so in an uncertain production environment.

Genetically improving the breeding ewes is the challenge for breeders of the maternal and dual-purpose breeds, and increasingly for Merino breeders as well.

Central to getting the balance right is ensuring that ewes have the energy reserves needed to maintain pregnancy and lactation.

Over the last 1-2 years AGBU scientists along with researchers in the Sheep CRC have investigated an enormous amount of data, from Sheep Genetics, the Information Nucleus flocks, the Maternal Central Progeny Test, and research flocks at Katanning and Trangie, aiming to identify clear messages.
Some of those messages include:

- Good genetics and good management are a win-win. Better management gets more out of the genetic potential of the flock, and better genetics gets more out of whatever management is applied. Management means things like nutrition and feedbase, timing of events, stocking rate, and so on.

- Numerous traits are related genetically to increased reproduction rate, usually with small correlations. For example, adult ewe condition score (which is a combination of genetic fatness and genetic muscling) has a genetic relationship of + 0.15 with NLW, meaning that animals with higher genetic merit for condition score (through genetically more fat and/or muscle), have the genetic ability to rear more lambs.

- Measuring potential new traits such as weight change during the year does not help much – there is only a weak genetic relationship between weight change and NLW.

- The genetic relationships tell us that selecting directly for improved muscle and fat is expected to lead to a small increase in NLW over time, but more importantly, that measuring and selecting directly for increased NLW is <u>much more effective</u> than simply selecting for increased muscle and fat.

- The relationships between fat, muscle, body condition score and NLW seem to change with environmental level, but not in a clearly consistent way. Our data doesn't point strongly to increased genetic body reserves having a larger effect when nutrition is limited. This effect may reflect a limited amount of data collected under really harsh conditions.

The simple overall message so far is – if you want ewes that have good weaning rate and good lambs, record carefully for NLW and the growth and carcase traits, and select for a balanced index, such as the Maternal$ Index or the Merino Dual-purpose index.

The ewes you will breed will have genes for the right energy reserves to support pregnancy and lactation and the right genes for growth, carcase merit and/or wool production to on to their lambs.

Further information is available by emailing info@sheepgenetics.org.au

Data Entry Book

Please be aware that the Sheep Genetics Lambing Data Entry book, will now be available at a cost of $33.00.

This is the first increase in ten years and is due in part to printing costs and the rising costs of postage. The book is triplicate copy and is a great resource for collecting data at lambing, it is available by contacting the office.

Dashboard 2: How to use the new dashboard

Sheep Genetics recently updated the Dashboard with a newer version that offers a more modern interface for exploring your ASBV trends. The new dashboard system allows you to look at the factors that influence the rate of genetic progress in your flock separately. These factors include the average merit or ASBVs of the sires and dams used in the breeding program, the accuracy of their ASBVs and their average age.

With the Dashboard, you can explore the reasons why a particular trait or index is trending in a particular direction.

Accessing the Dashboard

Dashboard is accessed by logging in to the Sheep Genetics search system and clicking on the "Dashboard' link. You will need your user name and password (the user name is your 6 digit flock code, your password is sent to you on the subject line of your results or can be told to you by calling the office). Note that passwords are case sensitive.

Click the Dashboard link once you are logged in

You will be redirected to this screen:
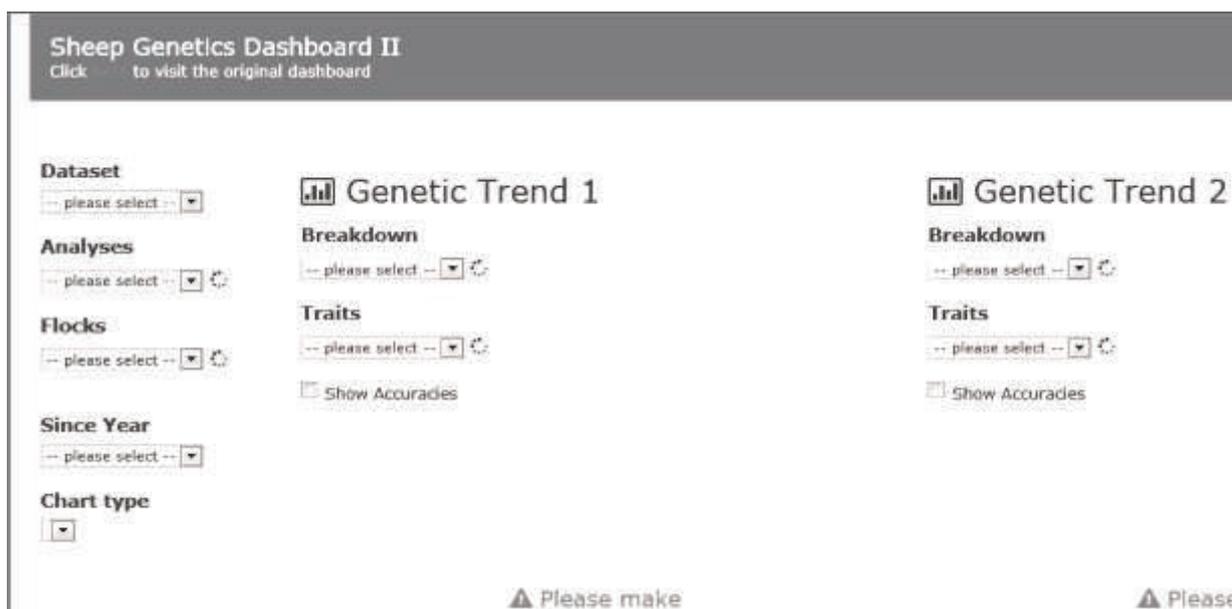
On the left hand side, you need to select the dataset you are interested in (MERINOSELECT, LAMBPLAN,MATERNAL LAMBPLAN, DOHNE or KIDPLAN). Once you have selected the data set, you select the analysis (there is one choice for MERINOSELECT and DOHNE, several choices for other datasets). Once in an analysis, you will be presented with choices of flock (usually just one). Then you can begin exploring the ASBV trends.

Dashboard 2 cont'd

Select a Breakdown

"ALL" means all animals in each drop, MALES and FEMALES breaks down the averages by sex, SIRES and DAMS represent the parents that were used in that drop. In the following example, we are comparing the genetic trends for ALL on the left hand graph vs. the SIRES used on the right hand graph for the index.

Select a trait

Everything we produce an ASBV for including the indexes, is available for exploring – in this case we are viewing the Fibre Production + index for a superfine flock.
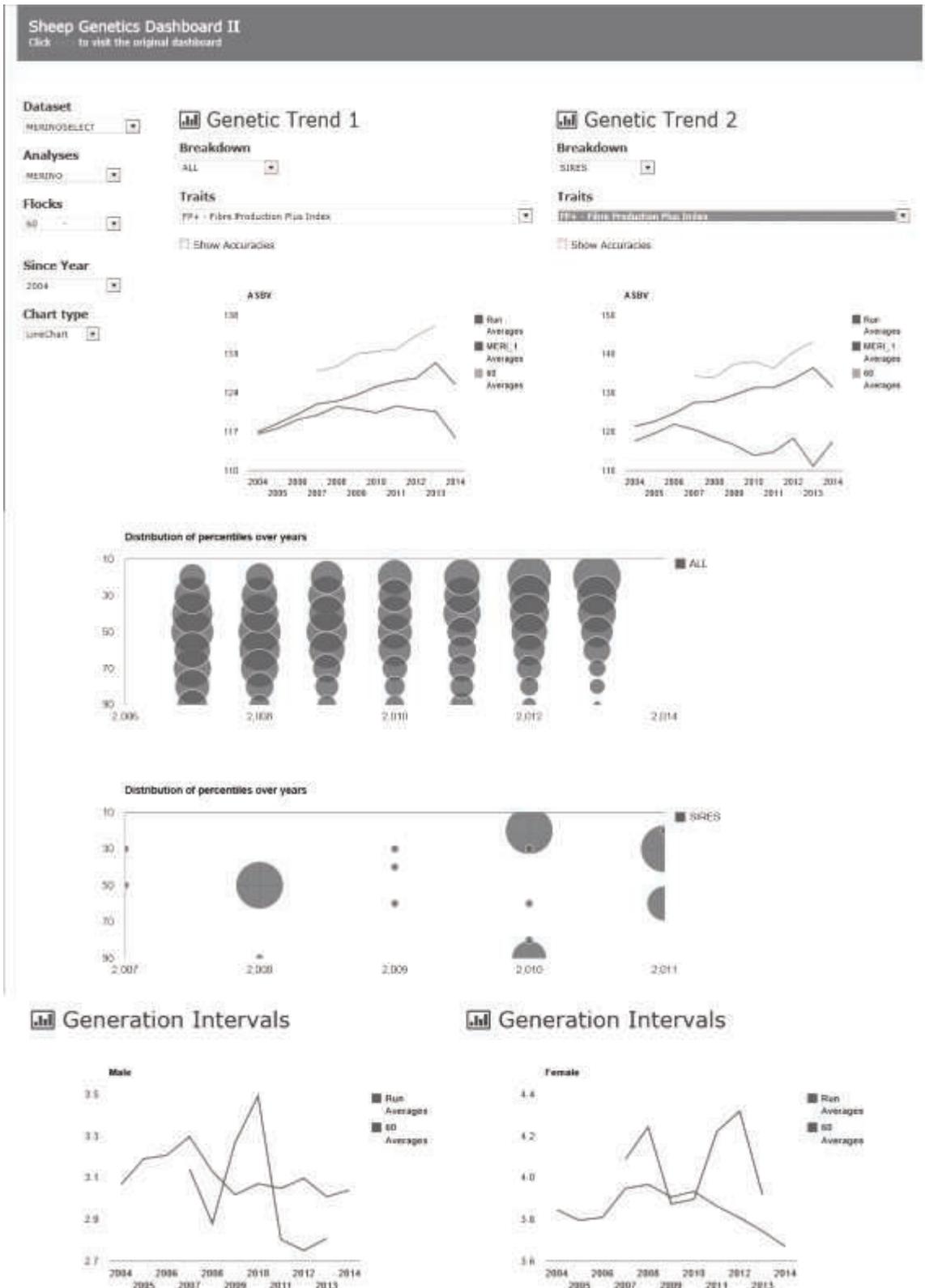
Exploring the individual graphs

The trend graph

This is a basic genetic trend, showing progress over time for your flock in the selected ASBV. There are three lines shown: Your own flock; your peers (either your sheep type in Merinos or the breed code for other analyses). The final line is the overall trend for the analysis in total. In this case we can see the flock average for this index is above the MERINOSELECT average and also above the "MERI_1" type average (superfine in this case). Looking at the graph, we can see trend line for "all" progeny follows a similar pattern to the trend for the chosen sires although it is several index points lower.

Accuracy

By selecting the "show accuracies" check box you can choose to display the accuracy trend for your flock against the type analysis trend. This will allow you to assess how effectively you are collecting information for that trait in comparison to the rest of the breed. It also gives an indication of your potential to make genetic progress as higher accuracy of selection is directly related to rate of gain.

The distribution graph

The distribution graph shows how many animals in each drop fit into each percentile band. The bigger the bubble the more animals are in it (hover over the bubbles to see the animal counts). This distribution graph shows in detail that the big bubble is gradually travelling to the top of the distribution with fewer and fewer animals in the lower percentile bands. However it also shows that there is still a fair spread of performance in this flock.

The Generation Intervals graph

The generation intervals graph maps the age of the sires and dams used in each drop year. A shorter generation interval allows you to bring new genes into the flock sooner and therefore can speed up the rate of gain. The graph is showing that over time, the MERINOSELECT breeders have steadily been pushing the ages of the sires and dams used lower, with the flock in question being more aggressive than the database in total.

At the end of the day, it is important to remember that just obtaining ASBVs is not enough, they need to be used to make joining decisions in order to create improvement in your flock and the Dashboard is a good way to explore your previous decisions in order to make informed decisions in future joinings.

Hold the date:

Leading Breeder 2015 - 24th and 25th March

Its on again, the 2015 Leading Breeder conference will be held in Adelaide SA on the 24th and 25th of March.

Sheep Genetics is hosting a national Leading Breeder forum, aiming to make the latest on sheep genetics and breeding technology available through an annual conference. The 2015 forum will consist of a series of information sessions, as well as helpful tips for making the most of LAMBPLAN and MERINOSELECT.

Topic areas include:
- Latest updates on Sheep Genetics activities and genetic analysis.
- Improving the way information is collected, collated and used
- New genomic technologies and how they can be practically used by ram breeders
- What innovations are occurring in other industries and what they mean for ram breeders

There will be opportunities during the conference to participate in feedback forums to discuss ways of improving the operation and extension of LAMBPLAN and MERINOSELECT and how these programs work with your business.

Data quality—Exclusions

In this edition of the Breeders Bulletin we look at the exclusion report. The exclusion report contains information that describes where errors have occurred and information is removed as data falls outside the statistical ranges.

An exclusion report will contain:

Animal	The 16 digit ID of the animal with the error
Information Type	The trait that has the error
Value	What was actually supplied for that trait
Group information	Statistics on the measured trait within the group
Avg	The group average for that trait
Min	The minimum value recorded in the group for that trait
Max	The maximum value recorded in the group for that trait
Cnt	The number of animals measured in the group
StDev	The group standard deviation for that trait
As %	The deviation from the group average expressed as a percentage.
Excluded on	The reason why the animal identified was excluded

By comparing the value of the trait in error to the statistical group information, you should be able to identify where the problem has occurred, and what is the best approach to fix the problem.

The three major reasons that data is excluded are;

- The record is more than 4 standard deviations from the mean of the group
- The value is too extreme for that trait
- The average value for the group has not met the minimum threshold (for WEC records in particular)

What do you need to do when you have animals listed in an exclusions list?

The first thing you need to do is check that the correct value has been recorded for that animal and trait. Many exclusions are simply typing errors.

If the recorded value is correct it is important to consider if the management group that the animal has been run in has been correctly recorded. This applies both to the paddock that the animals have been run in and also to prior treatments, for example previous shearing dates.

Where any corrections can be made it is important to update your on-farm records with the corrected details and resubmit the information to Sheep Genetics. If you have any questions regarding exclusion reports, or if you require any assistance, please contact the Sheep Genetics office on info@sheepgenetics.org.au or 02 6773 2948.

From the Genomics Projects Office

Christmas Office Closure
With the upcoming Christmas & New Year Holiday season fast approaching we would like to advise you that the Genomic Projects Office will be closed from Friday 19th December until Monday 5th January 2015. Emails and phone messages will be checked sporadically during this time. We apologise for any inconvenience and we would like to wish everyone a happy and safe Christmas & New Year.

DNA Testing
We would also like to advise that US Customs and postal service experience delays over Christmas so we recommend breeders submit cards by early December if possible. Please note that the Christmas delays may add to the normal turnaround times of 6 weeks for parentage/poll & 10 weeks for Genomic (12k) testing.

Resource Flock Sire Nominations
Thank you to all the breeders who nominated sires for the 2015 Resource Flock joining. We are currently in the process of analysing the list and selecting the sires. We will be in contact in the next few weeks regarding semen releases and number of doses needed for the sires selected.

Accredited Scanners

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SHEEP GENETICS

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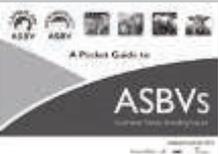
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