

THE
BREEDER'S BULLETIN





Manager's Report

Welcome to the final Breeder's Bulletin of 2022. I would like to take this opportunity to personally thank the Sheep Genetics team for their efforts throughout this year. It was certainly a milestone year, with the implementation of the new database, through to the record-breaking number of flocks and genotypes being submitted into the routine evaluations. You can read more about our achievements for the 2021-22 financial year in our Sheep Genetics Annual Outcomes report.

Despite challenges in the recent years brought about by the pandemic, it has been great to see many of our Sheep Genetics clients having success both in their rate of genetic progress and their businesses. This year has been almost back to normal after nearly 2 years of intermittent lockdowns. Our team has made a concerted effort to engage with more producers and service providers through Sheep Genetics events, industry events and supporting our clients in a range of workshops and field days. On-behalf of our team, thank you for your support and engagement at these events.

2023 is shaping up to be another big year of events and continued improvement for Sheep Genetics. Key highlights and events for 2023 will be:

- Our Leading Breeder Conference in Bendigo on the 15th-16th March. With the last face-to-face event held back in 2019, there has been a lot of new developments in the genetics space. We are looking forward to seeing many of our clients at this must-attend event.
- The release of the 2023 Analysis Enhancements in April/May. The enhancements planned for this period include:
 - Updated Merino indexes, following a period of consultation
 - Updated genetic parameters for MERINOSELECT
 - Improvements to reproduction and other analyses for Terminals
 - The roll out of breeder submission portal in late January (for more information on this please see Website and Database Upgrade article in this edition).

A final thanks goes to the Animal Genetics and Breeding Unit (AGBU) who are not only part of our routine runs but also work on the R&D behind the evaluation. This has been a big year for both our teams, and we are appreciative of their efforts.

I hope that everyone has had a safe and enjoyable festive season and we are looking forward to working with you into 2023.

Kind Regards,

Peta Bradley

Manager – Sheep Genetics

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HIGHLIGHTS

- LEADING BREEDER 15-16TH Mar 2023
- ANALYSIS ENHANCEMENTS Apr/May 2023
- BREEDER SUBMISSION PORTAL Jan 2023

Website and Database Upgrades

Since the launch of the new Sheep Genetics database in May 2022 we have been working closely with our team of developers to continue to make improvements to our system for the best user experience. The work that was done developing the Sheep Genetics website in 2020 has allowed us to enhance this platform and integrate new features into the system, including how breeders are able to access the most up-to-date reports and results for their flock every run.

Throughout 2022 there has been regular updates made to the site whilst also prioritising new developments. In late-January 2023 a new update will be released that will enable breeders and service providers to upload their own data directly to the Sheep Genetics database. See Figure 1.

This will enable users to receive feedback on their files in real time, and action any updates prior to the run date. We will be supporting breeders and service providers to submit their data through the new portal, and will continue to accept email data submissions for a 12 month transition period to ensure that breeders are comfortable using the new system.

Keep an eye out in our monthly update emails for the dates of webinars that will step through how to upload your own data. If you are not receiving these emails, a link to join the mailing list can be found on the front page of our website (sheepgenetics.org.au).

Figure 1. Data upload screen

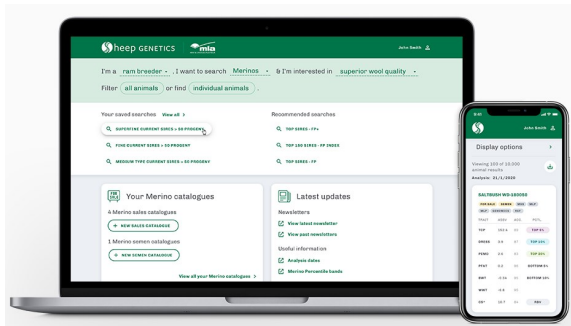
Commercial measures of IMF on Sheep Genetics animals

Sheep Genetics is working with breeders who are consigning SG animals to abattoirs, collecting commercial measures of eating quality. This applies to those who are processing animals that are in an SG evaluation and getting individual animal feedback for intra-muscular fat (from a probe or other device) and yield data (via DEXA).

The intention is to investigate the relationship between these commercial measurements and the research measurements routinely taken in the MLA Resource Flock, to determine if commercial measures can be included in the genetic evaluation.

If you have a consignment of animals that meets these requirements and are interested in being involved, **please contact SG before the animals are consigned** to ensure that all the necessary information is collected.





Accessing Sheep Genetics results

This year Sheep Genetics moved to a new way of reporting ASBVs and flock reports, utilising the Sheep Genetics search site to house this information. Instead of providing several static PDF reports attached to an email, these reports are now housed on a results portal within the search site. This portal allows users to customise reports to display the information most relevant to them and has export functions to print or save the information.

To access these reports, you must have registered an account on the Sheep Genetics website.

To register an account, go to: search.sheepgenetics.org.au/search/dashboard

Click the 'Register' button in the top right of the screens, and complete the form, nominating an email address and password of your choice.

Breeders will then need to contact Sheep Genetics to be linked to their flock on the site.

Once linked to their flock, breeders can nominate and give access to a service provider if they use one. To do this, breeders will log-in to the site, and scroll down to 'Manage SP' within the Flocks tile.

The reports portal includes information on counts of trait records by year and sex, genetic trends, exclusions, reproduction summaries, individual animal ASBVs and the file to download these results into on-farm software. More detailed instructions on navigating these reports can be found at: sheepgenetics.org.au/news/analysis-enhancements/

Travel and events for 2022

With the opening of borders and easing of COVID restrictions, the Sheep Genetics team were back on the road in 2022. Across the year, the team engaged with over 1 000 producers at events hosted or supported by Sheep Genetics.

Travel kicked off in March with the annual Service Provider workshop. The workshop included presentations from Sheep Genetics and Animal Genetics and Breeding Unit (AGBU) covering genomics pipelines, breeding program advice and a working with groups session run by external trainer Ben Reeves. This year the workshop was held in Adelaide, alongside MLA's Livestock Genetics Forum. The Livestock Genetics Forum was targeted at both beef and sheep, seedstock and commercial producers, with 140 in attendance. This Forum included speakers from across the supply chain and research organisations, unpacking the relationship between genetic tools and profitability.

HIGHLIGHTS

- REPORTS NOW AVAILABLE ONLINE
- REGISTER AN ACCOUNT ON THE SEARCH SITE
- CONTACT SHEEP GENETICS TO LINK YOUR ACCOUNT TO YOUR FLOCK
- BREEDERS CAN LINK SERVICE PROVIDERS

Regional Forums were held in Armidale, Hamilton, Bendigo, Wagga, Perth, Esperance and across the ditch in Cromwell and Christchurch, NZ. A focus of these forums was ensuring breeders and service providers understood the significant enhancements to the SG databases and were confident accessing their reports and results on the Sheep Genetics website. Across the series of forums, over 80% of participants implementing change following the workshop.

Sheep Genetics also had a presence at Bendigo Sheep and Wool Show and Sheepvention in Hamilton. This provided the opportunity to meet with breed associations and present to wider audiences on topics such as the introduction of Weaning Rate (WR) to the MERINOSELECT and Maternal evaluations.

Throughout the year, the team also presented at many industry conferences, breeder workshops and open days across Australia. These events included the Merinolink Conference which was attended by over 300 people, multiple sire evaluation field days, as well as producer group workshops and stud open days. These producer groups and open days were a great opportunity for the team to engage directly with both breeders and commercial producers on changes to the evaluation and how to utilise ASBVs in their breeding programs.

The Sheep Genetics team are keen to continue this engagement into 2023. If you would like Sheep Genetics to present at your event, please go to: <https://www.mla.com.au/news-and-events/events-and-workshops/Request-MLA-speaker-for-your-event/>

Following the success of online delivery for the last two years, MateSel training in 2023 was offered both online and in-person. The feedback from these sessions has been fantastic, with new users enthusiastic to utilise the program in their upcoming selection and joining decisions. This year's series of training has resulted in 25 new users accessing the program and 9 existing users who took the opportunity to get a "refresher" in using the tool.

The team look forward to continue this enthusiasm helping breeders to drive genetic progress within the sheep industry in 2023.

Pictured (L to R)

Emma McCrabb, Andrew Michael (Leachim Stud, Snowtown), Fiona McLoughlin, Peta Bradley, Chloe Bunter at Hamilton Sheepvention



HIGHLIGHTS

- ENGAGED WITH OVER 1000 PRODUCERS
- 30 SERVICE PROVIDERS ATTENDED ANNUAL TRAINING
- 140 ATTENDEES AT THE LIVESTOCK GENETICS FORUM
- 5 AUSTRALIAN REGIONAL FORUMS
- 2 INTERNATIONAL REGIONAL FORUMS
- 34 BREEDERS AND SERVICE PROVIDERS UNDERTOOK MATESEL TRAINING



R & D—MLA resource flock

The resource flock project aims to further develop the reference population needed for genomic predictions in the Australian sheep industry, by collecting measurements on hard to measure traits that are not practical on farm.

For the 2022 joining, 150 sires across 16 breeds were represented. Sires were selected based on relationship to sires previously used in the resource flock, genetic diversity and index values. All sires have been genotyped with high density SNP chip (700k) for genomic evaluation.

The resource flock has also been important in validating and testing new carcase technologies such as DEXA (dual-energy x-ray absorptiometry) and different devices to measure intramuscular fat (IMF).

MLA resource flock projects highlights

- 1,376 sires progeny tested since 2014.
- Sires reflect the diversity of the national flock encompassing Maternal, Terminal, Merino and Shedding breeds.
- All resource flock sires are genotyped along with their progeny and the research dams. This is essential to creating an industry genomic reference population.
- Sires are joined to a combination of Merino and first-cross Merino ewes at both sites. There is also a proportion of animals mated to Dorper ewes at the Katanning site.
- Each sire is AI'ed on average to 16 ewes per year across three research sites: Kirby (NSW), Katanning (WA) and Temora (NSW).
- The resource flock is designed to provide a genomic reference for carcase and eating quality traits. Progeny from each sire are recorded for hard-to-measure carcase traits including:
 - carcase fat depth, carcase eye muscle depth, carcase weight, GR fat
 - Intramuscular fat, pH decline, ultimate pH, shear force

R & D—Genetic tools to accelerate productivity

The development of genomics means there is now a variety of tools available to help producers find and select the very best animals. These tools allow you to see 'under the hood' of an animal and accelerate your flock's performance.

Which tools are right for me?

This depends on where you currently sit and what you are trying to improve within your flock. The diagram over page takes you on the journey of identifying where your flock and business are now, and how genetics tools will support you to accelerate your productivity.

Do you have a breeding objective?

Setting a breeding objective is an important step as it helps describe what you're trying to achieve with your flock.

Once you've set a breeding objective, you can identify what tools are required to help get you there.

How do I compare to the rest of industry?

Now that you have a clear breeding objective, how does your flock compare against others for the traits in your objective?

Mob-based benchmarking tools help you understand where your flock sits

This can inform decisions around which rams to purchase to move my flock towards your breeding objective.



How do I buy the right rams?

Now that you know how you compare to the rest of industry, how do you choose the right rams with the right genetics for your business?

Rams have the largest impact on genetic selection as they have more progeny throughout their lifetime.

Australian Sheep Breeding Values (ASBVs) can be used to select the rams that suit your production system and meet your breeding objective.



Genetic tools to accelerate your productivity

	Flock Profile	Australian Sheep Breeding Values (ASBVs)
Used for	Benchmarking your flock – understand where your flock sits and how you can move towards your breeding objective	Selecting sires – choose sires that best suit your production system and breeding objective
Level of comparison	Average flock	Individual animal
Sheep/goat breed	Merino	All sheep and goat breeds
Level of precision for selection	+	+++
Example traits	<ul style="list-style-type: none"> ✓ Growth ✓ Wool ✓ Wrinkle ✓ Worm egg count 	<ul style="list-style-type: none"> ✓ Growth ✓ Carcase and eating quality ✓ Wool ✓ Reproduction
Where do I get more information?	sheepgenetics.org.au/resources/genomics	search.sheepgenetics.org.au



Data quality tips and tricks

Now is a great opportunity to have a look at the data submitted for genetic evaluation, and the results that are being supplied back. Below is some data quality tips you may consider within your submissions:

- **DNA parentage:** If you are allocating pedigree through DNA Parentage, please ensure that you update the parentage results in your software and resubmit that drop to Sheep Genetics for these pedigree updates to be included in the analysis.
- **Pedigree type:** Are you using DNA to assign pedigree and have twins by different sires? If so, let the analysis know that this pedigree is correct through the PEDIGREETYPE field within your software.
- **Adding Scanner ID to fat and muscle scans:** As of the 1st of January 2023, Sheep Genetics will no longer be accepting files that do not have an Accredited Scanner ID attached to the fat and muscle scans in the software. It is a requirement for an accredited scanner to be used to measure these traits. A list of accredited scanners and their contact details are available on the website. Please contact your scanner for their ID number.
- **Traits of interest:** If you are interested in a trait and want ASBVs for your animals, the best practise is to take measurements and record that trait as directly as possible, on as many animals as you can. Measuring and selecting on the trait directly is the best way of making genetic gain for that trait.
- **Increased recording:** Selectively recording portions of your flock reduces the variation and may be disadvantaging your better performing animals. By only recording one sex for a trait, or the top portion, we are reducing the amount of information to the analysis and the ability to calculate the ASBV of the animals in your flock.
- **Management groups:** Are your management groups describing what is occurring on farm, including which animals have been run together in the same environment? Have you captured aspects such as preferentially feeding twin-bearing ewes? A good way to check if your management groups are being used correctly is through the Data Quality report where contemporary groups for major traits over the last 5 years drops are listed.

HIGHLIGHTS

- AS OF 1 JANUARY 2023, ALL EMD & FAT DATA MUST BE SUBMITTED WITH SCANNER ID
- FILES SUBMITTED WITHOUT A SCANNER ID WILL NOT BE INCLUDED IN THE ANALYSIS
- ACCREDITED SCANNERS CAN BE FOUND ON OUR WEBSITE
sheepgenetics.org.au/service-providers/



Why am I not getting ASBVs for my animals??

In order to get reportable ASBVs for an individual animal there are a series of thresholds and information required. Below is a quick and easy checklist to make sure you have the required information, and may highlight some areas for improvement to ensure that you are getting the most out of the data that you are submitting:

- Does the animal exist? Has it been submitted to Sheep Genetics with a valid 16-digit-id?
- Does the animal have pedigree available to the analysis? Is the pedigree displayed the pedigree you submitted? How many years of pedigree is available?
- Does the animal have measurements for the trait of interest within the last 5 years?
- Does the sire have progeny recorded for the trait of interest (if the animal does not have its own measurements)?
- Is there linkage within your flock? Have you used outside sires or had someone else used your sires and recorded the progeny?

Other useful aspects of data quality to keep in mind are:

- Does the animal have an accurate birth type and rear type?
- Have you included all relevant dates? Do these dates make sense, for example is the date of measurement after the date of birth?

Marnie Hodge—LAMBPLAN Development Officer

We would like to introduce Marnie Hodge, our new LAMBPLAN Development Officer who commenced with Sheep Genetics in October 2022.

Marnie is currently completing a post-graduate degree at CSU looking at evaluating the factors that contribute to reproductive success of rams used in artificial breeding. Part of her studies includes evaluating genetic parameters and estimating heritability of ram ejaculate quality traits.

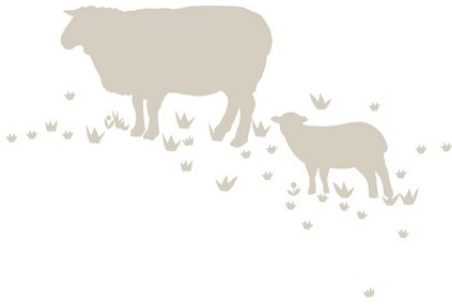
Marnie has also worked at Apiam Genetics Services in Dubbo where she was working as an AI Centre Technician, responsible for collection of semen, coordinating dispatches, and artificial breeding programs for seedstock producers – meaning she has worked with some Sheep Genetics clients already!

Marnie started working 3 days a week and will transition to full time work in 2023. She is looking forward to working with MLA and our Sheep Genetics clients.

TIP

- VALIDATING YOUR DATA IN SOFTWARE WILL PICK UP MANY DATA ENTRY ERRORS BEFORE SUBMISSION TO THE ANALYSIS





Annual survey overview

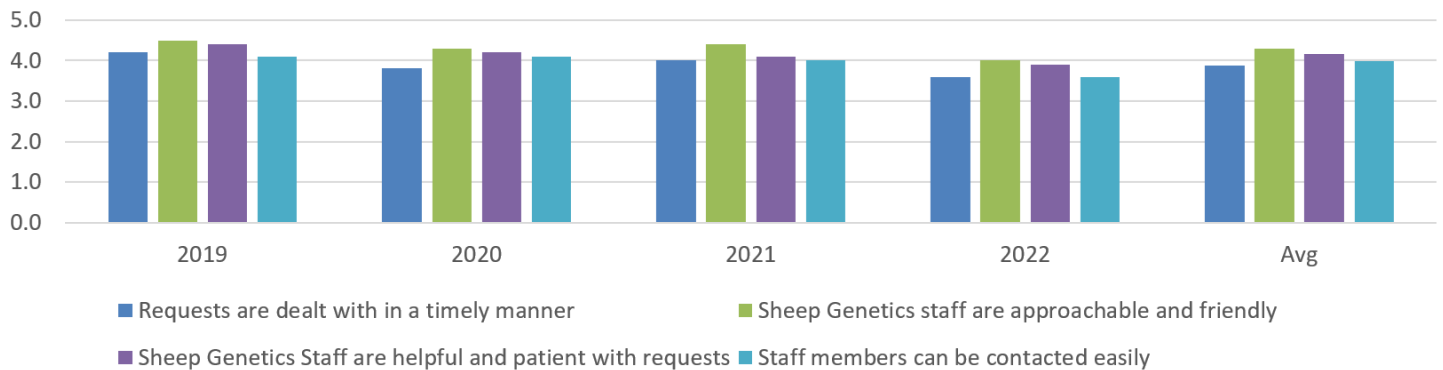
The Sheep Genetics annual survey was distributed by email in October to all LAMBPLAN, MERINOSELECT, DOHNE and KIDPLAN subscribers.

There were 109 responses, which is a similar number to previous years. One area that we focus on is the feedback around level of customer service. These responses were captured as a score out of 5. In Figure 1, you can see that the 2022 averages have dropped slightly, compared to previous years, and the longer term average. A couple of factors have caused this slight change:

- No LAMBPLAN development officer for nearly 6 months, so tasks were shared across other staff
- The new database was rolled out, which was the biggest change in the last 15 years, which resulted in a large volume of calls and requests for assistance, leading to longer response times.
- Member numbers have grown significantly over the last couple of years

The Sheep Genetics team have gladly welcomed Marnie on board, and are currently advertising for another Development Officer to meet the increased workload.

Figure 1. Customer service levels



A pleasing trend was that ASBVs continue to be considered a valuable tool for selection, marketing, joining and have allowed studs to achieve a higher rate of genetic gain, as can be seen in Figure 2.

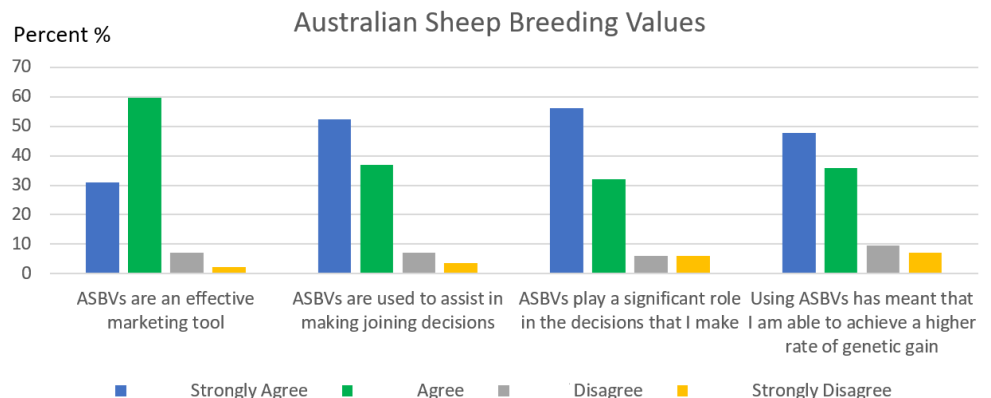
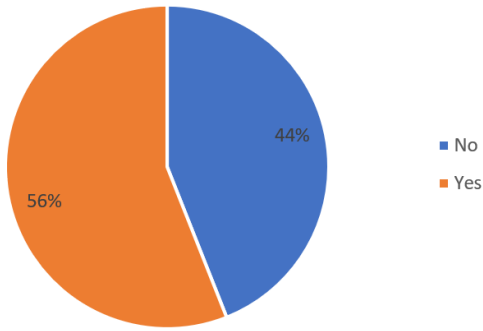


Figure 2. ASBVs feedback

In May the database redevelopment went live, which offered a new way for breeders to obtain their flock reports, as well as the new data quality information. From the survey you can see that just over half of clients found the portal easy to use (Figure 3.), and that of those requiring help, 94% called the Sheep Genetics team or their service provider (Figure 4.).

Did you find the results portal easy to use?



If you required help to access the new Results Portal, how did you find that help?

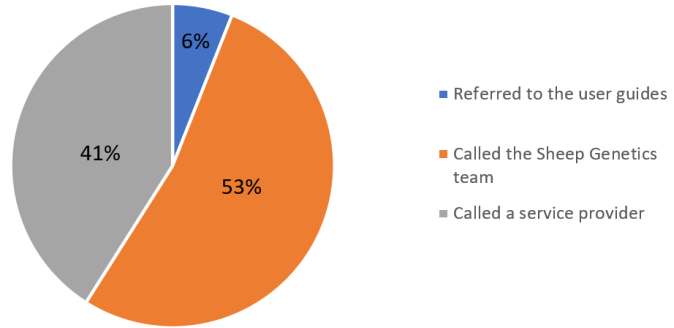


Figure 3. Using the results portal

Figure 4. Getting help for the results portal

Another new feature introduced was the ability for Breeders to access their own Data Quality Score (DQS) reports. These reports look at a range of metrics and combine these to give your flock a score, as well as providing information on where your flock sits relative to the analysis, and recommendations on opportunities to improve.

Data Quality Score: 79.9



4 Stars

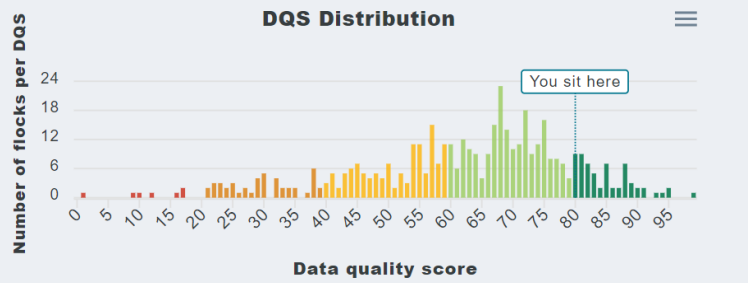


Figure 5. Data Quality Score

When asked if people thought the report was useful and if they would implement any changes based on the recommendations see examples in Figure 6. There were a range of responses from “More conscious of timeliness and importance of accurate pedigree “ and “yes, more repro data” which show that small changes can improve the breeding values for your flock.

People were also interested to see that measurements they were submitting weren't being included in the database when they thought they were.

We would recommend that if you haven't had a chance to look at your DQS report, that you take the time to check it out.

To improve your data quality

- Record more animals for reproduction traits
- Double check accuracy of birth type
- Submit carcass trait data earlier

Figure 6. Example recommendations from DQS report



SHEEP GENETICS MANAGER - Peta Bradley



SHEEP GENETICS

Building W41a
The Short Run
UNE ARMIDALE 2351
P: 02 8055 1818
E: info@sheepgenetics.org.au
www.sheepgenetics.org.au

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