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Submission to

Australian Wool Innovation Limited

Genetic Benchmarking; Potential for further commercialisation of AWI funded or part funded projects post June 2015

Prepared by

MerinoLink Limited

March 2014
MerinoLink Limited is committed to supporting and promoting genetic benchmarking and is strongly in favour of Option 1 in the AWI Industry Consultation Document dated November 2013.

Executive Summary

MerinoLink Limited is a not for profit organisation that aims to facilitate sheep grower’s, both commercial and ram breeders, and service providers link with information, knowledge and research. MerinoLink has over 100 members running over 1.2 million sheep across NSW, SA, Victoria and Western Australia.

Genetics are continually evolving. MerinoLink members believe the current split of funding that sees breeders paying for private good and Meat and Livestock Australia (MLA) and Australian Wool Innovation (AWI) paying for public good, whilst jointly managing Sheep Genetics is reasonable. The return on investment for both MLA and AWI is captured in improved genetics of commercial (levy payers) breeders.

Maintaining AWI’s involvement and financial commitment to Sheep Genetics will continue to assist ram and commercial breeders and service providers have input into the future developments of Sheep Genetics.

MerinoLink would like to see AWI continue to invest in genetic research and development via their investment in Sheep Genetics. We believe that at the end of the day commercial sheep breeders have the most to benefit from this investment by continual genetic improvement and ultimately profitability. All ram breeders have the opportunity to utilise the technology and information provided by Sheep Genetics. Mechanisms should be investigated to scope how non Sheep Genetic members can benefit from the developing genomic technology.

MerinoLink support the continuation of the four listed “benchmarking” programs including Sheep Genetics (MERINOSELECT); Merino Bloodline Performance; Australian Merino Sire Evaluation Association and Production Classes.

Who MerinoLink represent in making this submission

MerinoLink was officially launched in February 2013. At the 1st March 2014 our membership base comprises 54% commercial breeders; 27% service providers and 23% ram breeders; running 1.2 million sheep and servicing over 17,000 clients. MerinoLink is working towards the following objectives:-

- To ensure all data and information disseminated by MerinoLink has integrity and a commercial focus.
- To promote the profitability of Merino sheep.
- To be open to anyone joining, embracing a wide range of ideas and perspectives.
- To provide education and networking opportunities to breeders and service providers
- To provide mentoring to young people wanting a career in agriculture, in particular the sheep and wool industry.
- To liaise and work with Sheep CRC, Sheep Genetics, Australian Wool Innovation and Meat and Livestock Australia about issues and research questions relating the members and the industry as a whole.
- To promote the use of ASBV’s, Central Test Sire Evaluation, Merino Challenge and other trials that provide benchmarking information.
- To identify and initiate research and development.

MerinoLink has recently set up a commercial sire evaluation site and is conducting a genomic validation project partly funded by AWI.
2. Current benchmarking funding

MerinoLink Limited support AWI’s continued funding of all four programs outlined in the paper.

Production Class funding is seen as low investment project. Encouragement of the ram breeders who access this funding to enter rams in sire evaluation would continue to provide a stronger link between the two programs and ultimately Sheep Genetics.

Merino Bloodline Performance is an extremely useful tool to compare the combined outcomes of wether and ewe trials run across Australia.

The extended benefits of this work to better inform and enhance MERINOSELECT was evident in the work recently completed by Daniel Brown et al (2013) showing moderate to high correlations between traits reported in Merino Bloodline Performance and MERINOSELECT. Index and dollar value differences were partly explained by the different production systems used in the calculations. Without AWIs investment in Merino Bloodline Performance and MERINOSELECT the R&D carried out to investigate the difference and similarities would not have been conducted, this has proved to be a valuable outcome from having AWIs financial involvement.

Wether and ewe trials provide commercial breeders an opportunity to benchmark their flock and breeding program against industry peers. The genetic improvement expressed has a generation lag compared to the ram source, however the benchmarking tool helps entrants identify strengths and weaknesses that can then be capitalised on and or addressed. MerinoLink support AWI’s continued support in this area.

MerinoLink support the continued funding of Australian Merino Sire Evaluation Association (AMSEA). The combined benefits to the industry for ram breeders, who pay the majority of the site costs (90%), to improve genetic linkage, benchmark in different environments and the education benefits to commercial breeders about the impact a ram or team of rams can have over one generation is significant. AWIs financial involvement has led to historic sires (older than 20 years) being mated at a number of sites to provide further validation and confidence in genetic linkage.

AMSEA and Sire Evaluation sites provide an independent audit of a rams genetic merit. Sire Evaluation site reports are highly sought after providing both visual and objective assessments of ram progeny without any additional outside influences. MerinoLink believe AWI should continue their financial support in this area.

3. Responses to Genetic Arguments For and Against

MerinoLink support, in principle, the case outlined in AMSEAs submission – pages 5 to 8.

4. Items of specific interest for consultation comment

a) Feedback on comments or assumptions contained in the discussion paper above.

In support of Option 1, Sheep Genetics is relatively new bringing together a number of databases and processes into one location and product.

With the combined genetic extension work of the Sheep CRC (RamSelect Workshops), MLA and AWI Making More From Sheep (Bred Well Fed Well Workshops) and various field days at wether trials and sire evaluation sites commercial breeders are starting to question ram breeders more readily about information that they
require to purchase rams. The evolving interest from commercial breeders for this information will help drive the increased up take of Sheep Genetics products, however continual improvement and the need for further R&D is required. To maintain a balanced wool meat focus it is critical for AWI to continue its financial involvement.

The concept “that you just put data into Sheep Genetics and automatically get results” is false and misleading. Depending on the starting point it can take between 2 and 5 years to establish enough genetic linkage, management group structures and data recording/management systems.

b) Definitions - Simplification of the definitions will be important to improved understanding

c) Impact of charging $2.10 per animal compared to a cost of $5 or $10 on:

- The total cost of production per ram sold
- The number of animals currently tested per ram breeder and the total number of Terminal, Maternal, Merino and Dohne animals assessed;
- The impact on genetic gain or ram breeder viability from rising per animal charges by Sheep Genetics; would breeders contain total measurement costs by measuring fewer animals ie not testing their lowest genetic tiered animals;
- The merit in providing across flock breeding values on low tiered genetic merit animals, compared to providing within flock variations to the flock mean

If Sheep Genetics becomes too expensive it will be utilised on the “ability to pay” and will lead to a reduction in the technology uptake. For sheep breeders (both ram and commercial) to benefit from the genetic evaluation system (Estimated Breeding Values) provided by Sheep Genetics it estimates the relative value of the genetic make-up of the animal in a population. The more of the population we have to compare against the more robust and accurate the estimation (ASBV). Ultimately we need to encourage more animals to be submitted to the Sheep Genetics database not less.

Currently the greatest costs to ram breeders involved in the breeding value technology includes keeping and measuring the inferior animals that are a key component (as described above) to enhancing the accuracy of the technology. There are already considerable considerations and costs for ram breeders to weigh up when entering data into Sheep Genetics.

Consultation with MerinoLink ram breeder members, they are happy to pay for their private benefits, looking at the current pricing structure, as they currently do now and that AWI and MLA pay for the R&D component and 50% of the extension component. The 50% to the extension component will be important to assist deliver R&D outcomes into the future.

d) The extent to which, AWI and MLA funding of genetic benchmarking and the extension commitment involved in promoting genetic benchmarking by Federal and State Governments, Research organisations and Educational institutions, influence positively or negatively the current Merino AI and sale ram market now and into the future.

MerinoLink believes the influence of genetic benchmarking goes beyond the scope of AI and sale ram markets. The influence goes to genetic improvements across the industry in particular to commercial sheep breeders. The flow on effect of the genetic R&D and increase in the number of breeders taking up the technology will be to increased service providers (private) to the industry and increased enrolments at
education institutes. We are already seeing the benefits with scholarship programs encouraging young people to the sheep industry (Peter Westblade Scholarship) and increased number of post graduate students researching and studying sheep industry related topics and projects.

e) What are the benefits of the different benchmarking systems for commercial flocks?

Commercial breeders are the main beneficiaries of the genetic benchmarking systems, either via their direct involvement or indirectly as their ram source improve. Commercial breeders benefit from MERINOSELECT as a source of information on commercial rams based on high performance estimated breeding values, both across flock and within flock.

Commercial breeders also benefit from wether and ewe trials as they are actively benchmarking their breeding programs against industry peers. The number of commercial flocks evaluated in wether trials in NSW over the past 10 years is close to 500. Commercial breeders are sending their wethers from WA, Tasmania, SA and Victoria to participate in the benchmarking opportunities run in NSW.

Commercial breeders see firsthand progeny from industry leading sires at sire evaluation sites. Site reports are highly sought after for their visual trait assessments by both ram and commercial breeders. Both wether trials and sire evaluation sites provide hands on approach to genetic evaluation.

f) What are the financial incentives for merino stud breeders to adopt one or a combination of the different benchmarking methods?

An incentive has been the push or request from commercial clients wanting more information to compare and evaluate their ram source and the rams they are purchasing to fine tune selections.

One of the key financial incentives for ram breeders is to identify areas to improve production rates of different traits and the flow on effect for clients resulting in clients seeing value for money spent on ram purchases.

g) What rates of genetic gain are achieved in stud and commercial flocks by those who have and have not adopted genetic benchmarking?

There is a lot of information showing the amount of genetic gain within the industry using the existing genetic benchmarking tools available, such as Merino Superior Sires, Merino Wether Trials (Merino Challenge) and Sheep Genetics. AMSEA have quoted the genetic gain made over 20 years of sires that have been entered into Merino Sire Evaluations.

Wether trials continually show the variation that exists in the industry. There is often a doubling from the bottom performing teams to the top performing teams, depending on price periods used to value the results.

It is difficult to attribute any one tool to genetic gain as it is often a number in combination. MerinoLink is unable to comment on the rate of genetic gain in flocks that have not adopted or participated in genetic benchmarking programs as there is no way to make this evaluation.
h) Is Option 4 or something similar inevitable and the issue is about how long the transition phase would be and how well the transition phase is planned and implemented?

MerinoLink does not believe Option 4 is necessarily inevitable. Whilst the option has some merit and may possibly provide an avenue into the future at some time, MerinoLink does not believe that it is relevant at this time nor in the next 5 years as ASBV technology and genomics continues to evolve and adapt under the AWI and MLA ownership and governance model. It is felt that planning for it at this stage is considered a waste of limited resources.

i) If your preferred option is Option 1 or 2, what would you like to see improved, maintained or dropped?

MerinoLink’s preferred option is Option 1 and would like to see the following improved, maintained or dropped.

**Improved** – Breeder influence over the management and operation of Sheep Genetics. The relationship between the Sheep Genetics executive and management, technical committee and advisory committee, needs to be improved. Breeders need to be more involved in setting the priorities of R&D expenditure and the promotion of the technology as they are the main beneficiaries of the outcomes to industry. The promotion of Sheep Genetics needs to be more balanced and encompass all breeders and philosophies.

MerinoLink believes that service providers are underutilised in the area of breeding value technology adoption and that they offer a professional and cost effective way to increase adoption and extension. MerinoLink would like to see the manner in which Sheep Genetics works with, utilises and rewards service providers improved. **Sheep Genetics needs to ensure it does not interfere with the relationship between breeders and service provider and actively supports.**

**Maintained** – MerinoLink feels the ownership of the ASBV technology by AWI and MLA is not negotiable. The database is an essential resource of information vital to the sheep industry for continued research and development.

Support for show ring performance classes should be maintained as to encourage new entrants into MERINOSELECT and Sire Evaluation. Support for Merino Sire Evaluation and wether trials also needs to be maintained for the same reasons.

**Dropped** – MerinoLink does not consider anything that is currently owned, funded or managed should be dropped. AWI and MLA’s commitment to genetic benchmarking is reasonably small ($250,000/year) compared to their overall on-farm and off-farm budgets and to drop anything would be reducing what already is a very small parcel of expenditure even further and could jeopardise an important resource to industry.

**New** – MerinoLink would like to see a project that can scope out the possibilities of utilising wether trials as part of the R&D process within MERINOSELECT.

j) Should R&D in Sheep Genetics be paid for by current users or all levy payers?

MerinoLink believes that research and development should be paid for by all levy payers, as the whole of industry can benefit from new technology, innovation and genetic gain.
**k) Has the technical and economic case for breeding values adequately articulated and communicated? What should be improved, maintained or ceased?**

MerinoLink believes the technical and economic case for breeding values have not been adequately communicated, hence the confusion by some breeders. Sheep Genetics as an organisation has been focused on technical issues rather than marketing issues. This is a reflection of the evolution that Sheep Genetics has been experiencing since its inception. There needs to be a shift to a marketing level that is committed to selling the technical and economic case for breeding values. This focus could also engage other genetic service providers to assist at this level.

There is a need to engage more with clients and service providers (in combination) and actively seek feedback from clients who may be frustrated by the “system”.

Utilise Sire Evaluation and wether trial sites more to demonstrate the technology and the benefits of the technology. Continued support from AWI for the Bred Well Fed Well workshop model would be beneficial.

**l) Are ram breeders financially rewarded for genetic gain? Are animals or semen of high genetic merit receiving fair reward for their breeder?**

Overall MerinoLink feels that commercial breeders ultimately receives the reward and benefits for the genetic gain made by ram breeders and is hard to quantify. Some ram breeders benefit financially with higher auction prices and increased semen sales, however this does not occur all the time.

Both commercial breeders and ram breeders can benefit from positive results in wether trial benchmarking. Commercial woolgrowers ultimately receive the reward for the genetic gain made by the ram breeder.

**m) Would service to breeders be materially improved under option 4 or something similar compared to option 1 and 2? What would need to be in place for the service to be materially improved?**

MerinoLink believes not. Under MerinoLink’s preferred option, Option 1, there is no limitation in place that prevents service to breeders being improved. Customer service delivery is a result of the culture within an organisation and governance and not the structure.

**n) Is there an alternative business model or interim model that better combines the advantages and minimises the limitations of the business models listed in this document?**

At this time, and into the foreseeable future, MerinoLink cannot envisage an alternative model that will provide better outcomes than the model that is presently in place under a user pays system with levies funding the research and development and 50% of the extension.

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