
PRESIDENT'S REPORT

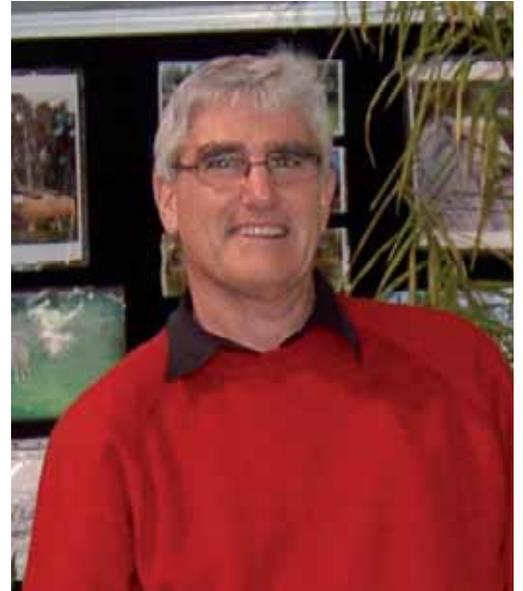
MURRAY LONG

After a tough start to the year both from the lack of rainfall and sheep prices, this newsletter comes at a time when both have improved significantly. Most members would have received good rainfall over the past few months and have some degree of crop or pasture growth going into Winter and hopefully continuing into the Spring.

The rise in prices for both lamb and sheep is a welcome change after a period of relatively lower prices. The first quarter of the year saw record levels of sheep slaughtered over a sustained period and with continued high levels of lamb numbers through the yards, we are seemingly moving to situation of short supply resulting in higher prices. According to recent statistics from ABARES, our sheep flock has decreased over recent times, a turnaround from the flock rebuild we experienced following many years of drought. They also predict a continued fall in flock numbers in the coming 12 months resulting in lower lamb numbers and subsequently higher prices for both lamb and sheep. Let's hope the season does its part and provides good conditions to allow our clients to take advantage of better returns.

For most of our members, the last season was a tougher ram selling exercise than we had become accustomed to. For many it has led to re-evaluation of either ewe numbers, flock performance or both. Many members would have realized the market is becoming "fussy" as to the type of lambs they prefer and there has been plenty reported in the rural news about some of these preferences. Whether we choose to believe the reports or not, it is our responsibility to our clients to provide the type of lamb that their processors want. This does not mean changing breeds, but selecting the right genetics to suit our clients' needs, and definitely not providing them with a mix of genetics that is contrary to their breeding or management objectives. As a breed, we have available the best performance based gene pool in the lamb industry; it is up to individual members to ensure that they are using the right genetics for their clients business otherwise, not only will you as a ram supplier lose market share, but the reputation of the breed will also suffer.

The August newsletter provides promotion for many breeders leading into the major shows and sales such as Bendigo, Hamilton and Adelaide and many of our members will be busy preparing sheep for both show and sale and I thank them for their time and effort and wish them well in the promotion of their sheep/stud and subsequently of the White Suffolk Breed. Last year saw the White Suffolk breed perform exceptionally well and I encourage all members to support these opportunities to look over the sheep at major shows and more importantly, catch up with fellow breeders and see for yourself just where our breed is going in relation to others in the industry. If you have never been to a major show, make this year your first; there will be some outstanding genetics on display.



CONTINUED PAGE 7

FROM THE SECRETARY

ROB MARTIN (ACTING SECRETARY)

As most of you would be aware Nikki is away on maternity leave until the 13th January 2014. As a result I have taken over the role as your Secretary until January with assistance from Fiona Baker who is handling Finance.

I must admit stepping into a role for a short period of time and picking up the threads again can have some issues, however it's been enjoyable having contact with members that I haven't seen or heard from for a few years, it's a bit like old times.

Nik left me a brilliant White Suffolk operations manual to work with that walks me through every activity and operation the AWSA is dealing with at the moment.

I am not in a position to draft a substantial report in the "From the Secretary" section of the Newsletter as I have only been dealing with White Suffolk business for a few weeks. The forwarding of Hypotrichosis kits to members has been quite active and planning is just starting to take place for the end of July Council meeting, in addition to these we are dealing with general requests.

On behalf of the Association and the Secretariat I must thank Sue Piggott and BizBoost for taking over some of Niks activities while she is away. Thanks Sue.

In conclusion I wish all members every success in the coming Show and sale season.

Regards Rob Martin.

STOP PRESS!

Dan and I are so thrilled to announce that we welcomed little Harry John Ward to the world on 5th July, weighing 6lb 8oz. We can't believe he is here already and are loving parenthood (so far!) and all the cuddles.

A huge thank you to the Association and all members for the lovely bunch of flowers and messages we have received.

We are all doing great, and can't wait to show him off to you all soon!

Nikki, Dan and Harry Ward xx



NEW MEMBERS SINCE APRIL 2013

Welcome to the following new members of the AWSA:

Flock	Name	Address	Prefix	
822	Ditchburn, N	797 Springhurst Rd, Kukerin	WA	6352 Golden Hill
823	Hawker, MJH	Brobenah Hall Rd, Leeton	NSW	2705 Warrick Park
824	Murray Bridge HSch	PO Box 1584, Murray Bridge	SA	5253 Roper Road Farm
825	Hawthorne, C & J	Red Bend Catholic College, College Rd, Forbes	NSW	5871 Red Bend
828	Hurst, L	PMB 19, Robe	SA	5276 Lake Hawdon

2014 AWSA NATIONAL CONFERENCE

STEVE MILNE

The 2014 National Conference will be held in at the Hamilton Exhibition and Conference Centre from Sunday the 16th to Wednesday the 19th of February.

As part of the conference there are plans to run a "Pen of 3" competition for ram lambs with a commercial industry focus. A number of discussion topics have been suggested including genomics, eating quality, electronic ID and recording software options, worm resistance and resilience, mastitis, and sheep nutrition. If there are any other topics that AWSA members would like covered then please contact myself or another Conference committee member.

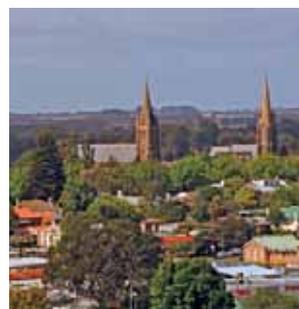
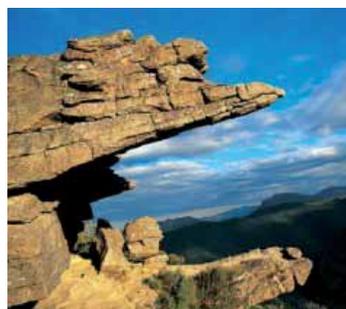
CONFERENCE COMMITTEE

Steve Milne, Debbie Milne, Ian Porter, Denise Porter, Dean Cameron, Lachie McCrae, Craig Mitchell and Alisha Adams.

In addition to the conference I would like to make you aware that the Hamilton P&A will be hosting a MLA Meat Profit Day on Wednesday the 19th of February. The theme is "2025 – Ready or Not". You might consider extending your stay in Hamilton to attend.

Look forward to seeing you in Hamilton next February.

Hamilton, Victoria



PRESIDENT'S REPORT CONTINUED

The Sheep CRC is in the final year of the original research program but has submitted an extension application which will be decided upon toward the end of the year. As a major participant of the research program over the past 6 years, we as an Association, have thrown our support behind the application for an extension and have offered to be an official participant in any extension activity should the application be successful. This will provide some significant benefits to the Association and members and give us the opportunity to have input into the program through official representation.

So roll on ram selling season and showtime! I wish every member all the best for the upcoming season and may we continue to provide the industry with the right genetics to ensure that our clients, and just and importantly, the lamb industry continues to prosper. The next stage of implementation of genomics into breeding programs will potentially put the White Suffolk breed in a even better position but we cannot afford to sit and wait for it to happen, we need to be proactive in implementing the findings to date and the committee are well down the track to achieving this.

All the best, hope to catch up with as many members as possible at the shows!
Murray Long

PROMOTION AND MARKETING UPDATE

ANDREW FRICK - CHAIR PROMOTION & MARKETING COMMITTEE

eNEWSLETTER

One of the initiatives of the White Suffolk Board this year has been to trial 5 issues of an E-newsletter during the Spring Ram selling season and any members with Email will already have received 2 issues when they receive this Newsletter. The main purpose of setting up the E-news was to bring greater exposure of the White Suffolk "brand" to Commercial lamb producers, Agents, people involved in the Lamb Industry and maybe even our end point Customers. This will take time to develop and using Email is a very fast and cost effective means of transferring information and reaching a target "audience". So our plan is to build on our existing Email database and add people who would be interested in receiving a copy of White Suffolk E-news each Month.

The content of the E-news is being handled by Geoff Phillips who has extensive experience within a number of major cattle breeds, and will bring an interesting and maybe edgy angle to relevant and current items of interest. He is always keen to hear from anyone with a "story", and articles about Commercial clients that use White Suffolk's are a valuable promotion tool. Geoff has a reply email tag in the E-news so please contact him if you have anything suitable. The actual collation and sending of the E-news is being handled by Sue Piggott and her staff at Biz boost as well as collating the Email addresses. So we urge members to feel free to send the E-news on to your clients or encourage them to sign up for a copy. (There is an unsubscribe button as per legislation.)



SUBSCRIBE TO OUR eNEWSLETTER - follow the link on www.whitesuffolk.com.au

PRINT MEDIA

Advertising in the print media will be similar to last year, with feedback from members indicating a desire to provide more focus on the agronomic advantages of the White Suffolk in our print copy. There is also important findings coming from the CRC trials on eating Quality that show White Suffolk's have very good eating quality traits and we plan to exploit this in our promotion this year.

WIN A RAM COMPETITION

At the time of writing the Committee is putting together the rules to run the "win—a-ram" Competition again this year. The proposal is for one Prize of \$1000 (to purchase a White Suffolk ram from a financial member of the AWSA) for the whole of Australia this ram selling season. Entry would be via our website only and all entrants would receive a free copy of the E-news letter. The win a ram comp and the E-news are designed to increase traffic to our Website, with the plan to get additional recognition of our other current forms of promotion and marketing.

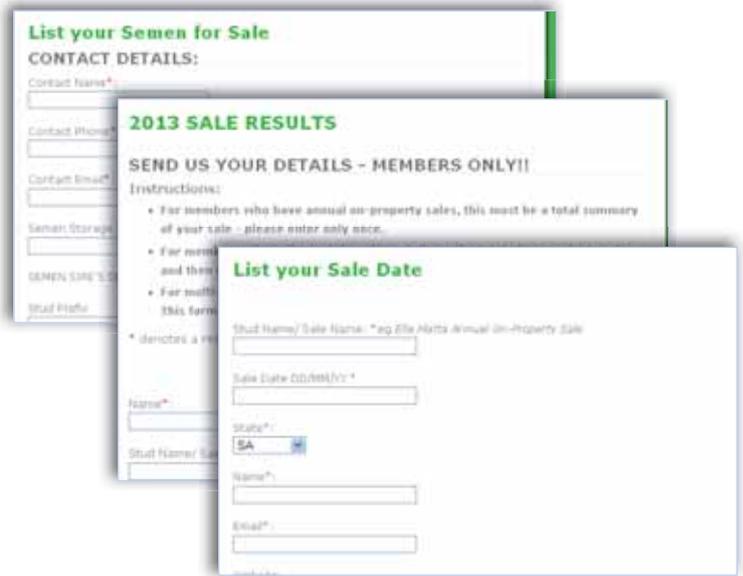
The subcommittee responsible for Marketing and Promotion have been evaluating some other important proposals re-marketing the White Suffolk Brand. There are some that are being discussed and can't be publicly acknowledged yet, but one that comes up regularly is Branded Product. This has been a very important avenue of promotion for the Board to pursue, and while there is nothing tangible to report as at time of writing, there has been considerable groundwork done on the viability and possibility of this happening. I hope to have more to report on this in the near future.

PROMOTING YOUR STUD ON THE AWSA WEBSITE

SUE PIGGOTT - BIZBOOST - WEBMASTER

We have developed some new ways that you can promote your ram, ewe and semen sales on the AWSA website

Only Members have access to these online forms in the MEMBERS RESOURCES area of our website. Use the forms to enter your details and the information will be automatically displayed for the general public to view on our website.



Member Resources

Click on the Member Resources button in the menu and use the same username and

password that you use to access WebManager to enter this area.



NEW

NEWS AND EVENTS ON WEBSITE

You can:

- List your on-property SALE DATE or multi vendor sales and link to more information
- Log in again after the sale to post RESULTS on our website
- List SEMEN FOR SALE, with photos, description, links to asbv's, price and contact person.links to asbv's
- Add a STUD PAGE advert
- Request that your website be listed on the Links and Resources page

PLEASE CONTACT:

Sue Piggott at Bizboost if you need help with these online forms.

e: info@bizboost.com.au
ph: (08) 85724470

The articles that were included in our latest eNewsletter are also on the website under Latest News. So you will always be able to browse these.

Our White Suffolk Events Calendar will include major events and all the sales that our members list using the online forms.

And if you did not receive your eNewsletter in your inbox, use the online form to join the Mailing list. This will also be available for the general public and your commercial ram buyers - so send them the link!



RESEARCH & DEVELOPMENT REPORT

MURRAY LONG - R&D COMMITTEE CHAIR

The final stages of the sheep CRC program are coming to an end and many members will have taken to opportunity to use the DNA testing offered by way of the Pilot programs that have been available over the past 2 years.

This part of the program has now been virtually commercialized with a 12 K chip available for DNA testing at a cost of \$50, which replaces the 50K chip that was used for the Pilot programs. The 50K chip will still be available providing slightly higher accuracies and used predominately for evaluation of prominent sires. The parentage test is also at the commercialisation stage and has been used by many members recently as part of Pilot program 3 as a low cost means of determining parentage.

Up until now, there has been some fine print that states that RBV's are not to be reported and are for your own within stud evaluation. For this ram selling season, that condition has been lifted and you can advertise RBV's provided they are listed as just that, RBV's. The move from these Research Breeding Values to an ASBV will take place over the next 12 months once they have been integrated into the Lambplan database and then we will have an ASBV for meat eating quality and the possibility of more to come. There is already a lot of work being done to develop MSA grading relating to MEQ traits and as a breed, we are well aware of what that means to the White Suffolk breed.



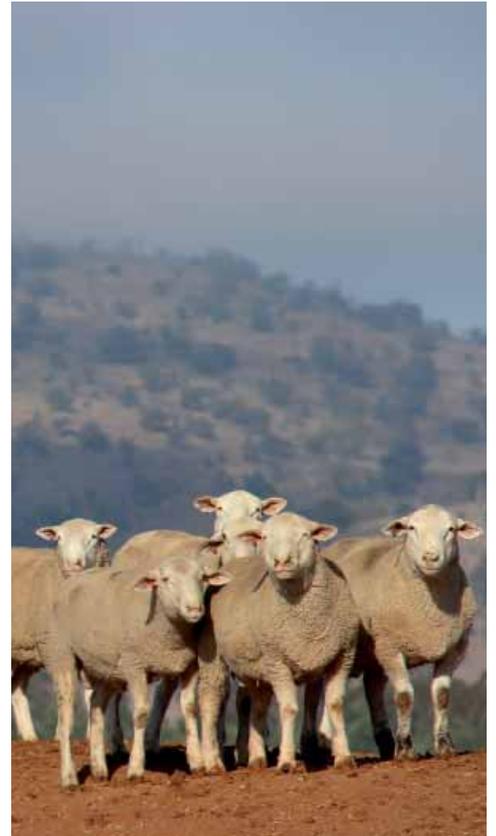
The AWSA committee was one of the first groups to commit to assisting the Sheep CRC Research program over 6 years ago. Through our members and various representations on committees, we have had significant input into the findings of the Sheep CRC over the past 6 years. Although not officially one of the participants, we as an Association were given the opportunity to be involved in planning meetings and development activities and as a consequence of this, we recently gave our support to the Sheep CRC extension application and signed up as an official participant which provides us with some advantages should the extension application be successful. We will find out later in the year whether this extension application is successful but is looking promising at this stage. Meat eating quality is an integral part of the extension bid and we will definitely have a role to play in that area.

The SuperWhite group was approached late last year to be part of a Large Scale genotyping program and have been busy DNA testing a significant group of 2012 drop young sires that will form part of their evaluation for selection. Another eight groups from various other breeds and programs are also involved in this ambitious project with the purpose of this project to evaluate just how genomics fits into a breeding program and the benefits that can be obtained both financially and genetically. The results of this program will be of great benefit to all who choose to utilise the technology and provide some guidelines as the best and most efficient use of genomics.

The next phase of commercialisation of Genomics to the whole industry and the continual question as to how to maintain a reference flock to keep the data relevant, is a difficult one. The cost of the research program and the sheer cost to maintain the INF (reference flock) into which many members have contributed genetics, has been significant. To continue to use DNA analysis, we need to continually refresh the reference flock and it may be up to breed societies or members within those breed societies to provide this facility. The issue of MEQ will require some additional cost to evaluate but the correlation of phenotypic measurements to DNA markers could be achieved at the stud level so be aware that the use of genomics requires some ongoing referencing and the whole industry will need to be continually involved.

For those members who are well aware of just what has been happening within the sheep CRC and have been involved, thank you for your support of the current research program and as a breed we hold a very high reputation within CRC and the board are well aware of the significant input from many AWSA members both at the genetics level and through committee contribution. For those members who may not be well attuned to just what CRC has been doing, it may be worth a visit to the website to update your knowledge with the information that is found within the site. (www.sheepcrc.org.au) There are many programs such as Ram Select, parasite management guidelines, precision sheep management and post graduate courses that are available as a result of the CRC; it is not all about DNA.

Keep watch for future developments from the CRC; the findings will continue long after the research program officially finishes. If the extension application is successful, we continue the research and the search for new initiatives to support our industry continues.



PROMOTION OF YOUR GENETICS

ADAPTED FROM "BREEDING STUD SHEEP", 2008 LANDLINKS PRESS

So we are into that time of the year when your rams are looking good, all the cost to breed and prepare them has been spent and now you have to promote the genetics you have to the industry. Without an effective Promotion and Marketing strategy, all your hard work and cost could go unrewarded. At this stage you should have already devised a marketing strategy that suits your target market and have some firm ideas of how best to promote your genetics. It may be through showing, rural press advertising, regional field days or open stud days. One fact is certain; it is not up to the breed society to do your marketing for you. The Association will assist you by advertising the breed; it is up to individual members to promote the individual aspects of their genetics to prospective clients. Without your input into a generic Promotion and Marketing campaign, you will gain very little if any advantage.

First point; **Marketing is not selling.** Marketing is the promotion of your genetics and the service you offer. Identify potential clients and what you can offer them, market the benefits you offer them, not the features. Benefits equate to dollars in their pockets, features do not. If you can promote a specific benefit that your genetics offer which will result in a higher profit for your clients, you are 3 parts of the way to achieving a sale.

Timing- clients rarely make a decision on the source of their rams the day before they put the crate on the ute. Plan the scheduling of your promotion regardless of what form it takes; an ad in the newspaper today is unlikely to result in a sale tomorrow. You need to be in the mix of potential sources early through a variety of promotional activities well before your rams are ready for sale. This requires the development of a promotion and marketing program that extends way beyond a few months or even a year as a well designed long term promotion strategy will keep your genetics at "Top of Mind" status with a wide range of potential clients.

Identify your competitive advantage, your specific benefit if you like, and concentrate on those benefits that translate into additional profit either

through better quality product that suits the market or easier management issues.

Finally at the end of each year, **assess the success of your Promotion and Marketing plan** and if necessary make some changes. Don't sit back and watch the ups and downs dictate how you are going to run your business. You either change your breeding objectives or change the manner in which you market them, or both. Be honest with yourself; are you missing out because of the genetics you are providing or is it the manner in which you promote them. This decision rests solely within your control but remember "Perception is Reality" so it matters little how high you rate your genetics; if the industry don't see them as being relevant, you need to change your breeding objectives to meet the demands and requirements of prospective clients, then promote accordingly.

HOW TO PROMOTE?

There are plenty of means to highlight your genetics, some are costly with very little apparent effect, and



some are cheap and easy with great effect. There is no doubt the most effective form of advertising is 'Word of Mouth' and this is achieved through sustained supply of a reliable product that meets all expectations. Advertising in rural press has varying degrees of impact but generally as a sole form of promotion, it is great for the publishing companies, not so great for the advertiser. It needs to be integrated with other, more public forms of promotion. An ad in the newspaper without a catchy title or a photo will virtually go unnoticed. Colour may be more expensive but will generally attract more readers. To help decide what you may include in your newsprint ad, quickly scan through a newspaper and see which adverts catch your eye. Then go through the same paper and carefully look at every ad and evaluate which ones you don't remember seeing previously. Chances are there will only be a few you actually noticed, they are the templates for any ad you develop. Use local newspapers if your potential clients are located within a specific area. Unless you have a great reputation due to word of mouth or a specific advantage in one area of genetics, a majority of clients will be drawn from your immediate region. Advertising is also often cheaper in local newspapers. The hosting of open days or involvement in high profile field days is an ideal way to meet potential clients at a more personal level and provides more confidence in prospective clients to use your genetics. Utilise local or regional clubs or societies to promote your stud through sponsorship, they appreciate your input and it helps all involved. There are many and varied ways to promote your business, it is up to your imagination.

Websites are the obvious high level promotion tool but you need to actually get producers to visit the site. All advertising needs to have your web address



clearly identifiable, not so they can remember it but so they are made aware that you actually have a web site and they are able to "Google" it to find out more about your stud and what you have to offer them. The actual maintenance of your site and the content will also have an impact on your effectiveness but there are plenty of experts out there to advise in that area.

Finally, as a seedstock producer, you have a responsibility to promote and market your stud in a manner that not only identifies you as honest and trustworthy, but does not bring the breed or other producers into question. These fall into 4 main categories.:

- **HONESTY AND FAIRNESS**
don't make false claims or provide false data on either your sheep or their genetic capabilities. Refrain from criticism of fellow breeders at any level and concentrate on what your sheep can honestly provide to their business. This point alone will ensure your high reputation in the industry.
- **AFTER SALES SERVICE**
look after your clients and maintain contact. It is easier to hold onto clients than find new ones. Remember the customer is always right (most of the time anyway!)
- **PROVIDE RECORDS WHERE AVAILABLE**
and performance data. Match the genetics to exactly meet what your client is asking for and assist them in understanding data or making their decision where required.
- **QUALITY ASSURANCE**
the one area that will quickly result in a high turnover of clients if not addressed and can harm your reputation indefinitely as a seedstock producer. "If in doubt—throw it out" and ensure disease and parasite free stock.



RamSelect WORKSHOPS HELP BUYERS PICK THE RIGHT RAM

ANNE COLLINS, RURAL SOLUTIONS SA

Phil Clothier, Woolumbbool, Lucindale has hosted many workshops over the years aimed at educating ram buyers on the merits of buying the best ram for their flock, rather than the biggest and most beautiful on offer. He is now also helping to educate the wider community; with a good proportion of the audience at a recent RamSelect workshop he hosted comprising school students and livestock agents.

Phil continues to host the workshops because he believes there is a gap in the knowledge among sheep producers and service providers about ASBVs and how they could be used.

He says that around 50 percent of his clients now use ASBVs to assist in their decision making when buying rams. This means that his customers are a lot more likely to be satisfied with the progeny those rams produce, because they are more closely aligned to the buyer's own breeding objectives.

Phil compares ram selection to variety selection in a cropping scenario. "A farmer would not sow a variety that has been shown in trials to be an average performer; they would sow the best performing variety for their situation.



Phil Clothier, Woolumbbool Stud, Lucindale, recently hosted a RamSelect workshop which was delivered by Steve and Debbie Milne of Richmond Hill Agribusiness, Branhholme, Vic.

Selecting a ram is similar; why would you buy a ram that has been shown to be an average performer, just because it looks good on the day, if you can afford to buy one that has measurements that indicate it will perform above average in your situation."

The RamSelect workshop, developed by the Sheep Genetics and the Sheep CRC, aims to increase ram buyer confidence in selecting the best value rams for their breeding objective.

In the lead up to the 2013 ram selling season, RamSelect coordinator in South Australia, Anne Collins, is encouraging other studs to host workshops for their clients. She said "The choice of rams impacts on flock performance for many years, and it is important that commercial breeders are confident in using measured performance information and combining that with their visual assessment."



If you would like more information or are interested in running a workshop for your clients, contact either

Lu Hogan at the Sheep CRC
on 0427 687 432

or in South Australia, contact
Anne Collins, Rural Solutions SA
on 0427 486 115

ARTICLE COURTESY MLA "FEEDBACK" MAGAZINE - JUNE 2013



Worm-resistant flocks a win for producers

Selecting rams with a negative yearling worm egg count (YWEC) of -60 or more can transform an entire flock's natural worm resistance within seven years, cutting control costs and boosting production.

If you could find a ram with naturally high worm resistance that also produced offspring with high muscling and a good dressing-out percentage, it would make sense to take him home.

According to MLA Program Manager Dr Alex Ball, the worm-resistance Australian Sheep Breeding Value (ASBV), often expressed as yearling worm egg count (YWEC), can have a significant economic impact, particularly given its positive correlation with important carcase traits.

Alex said ASBVs provide highly accurate projections for how many sires' progeny will perform for a range of traits. This makes it relatively easy to address flock shortcomings and achieve production gains.

He said worm-resistant genetics, when incorporated with an integrated parasite control program, could add \$12.50/ewe/

year of benefit to an enterprise based in the New England region of NSW, an area known for its worm burden issues.

"On average, in the New England, a ram with a good negative YWEC, say more than -60, will only cost \$200 to \$250 more than a ram with no or positive YWEC," Alex said. "It is not a lot of extra outlay for the potential benefits."

"Sheep with strong negative YWECs tend to be more robust, more productive and have good weaner survival rates."

Lifetime benefits

Geneticist Dr Johan Greeff, a researcher with the WA Department of Agriculture's experimental flock, said there were clear economic benefits in breeding resistant sheep.

"Ewes from resistant flocks cause less pasture contamination,

therefore their lambs are less challenged and grow better," he said. "At weaning, resistant animals are 4-5kg heavier than sheep not selected for resistance and that advantage continues for the rest of their life."

"Those resistant weaners will not only grow faster and larger but will also cut more wool. Their fibre diameter tends to be a bit stronger but the increase in wool production offsets that."

"We have found that, up to hogget age, there is a \$6/head or better advantage in having resistant sheep compared to non-resistant animals," he said.

According to Johan, there are many variables in calculating the payback period for producers who invest those extra dollars in rams with good negative YWECs. These include the resistance difference between the rams being introduced and the rest of the flock. However, the improvement starts immediately.

"Producers will get some benefit from the first drop of lambs and, within six or seven years, all the ewes in a flock can be sired by resistant rams," he said.

Both Johan and Alex warned that genetics was no silver bullet, but could be an important part of an overall worm-control strategy that includes pasture management and an effective drenching program.

Look to the F'ewe'ture

The BESTWOOL/BESTLAMB Annual Conference 'F'ewe'ture Sheep Farming is happening on 26 June 2013 in Bendigo.

Conference topics include joining ewe lambs, positioning sheepmeat for the future consumer, social media, pasture production, ewe nutrition, labour efficiency, managing ewe lactation to drive lamb growth rates, using cereals to fill feed gaps and improving farm infrastructure and safety.

The guest speaker at the event, and at the conference dinner on 25 June, will be New Zealand sheep producer Doug Avery.

MLA is a major sponsor of the conference.

Register at: www.dpi.vic.gov.au/agriculture/beef-and-sheep/sheep/bestwoolbestlamb

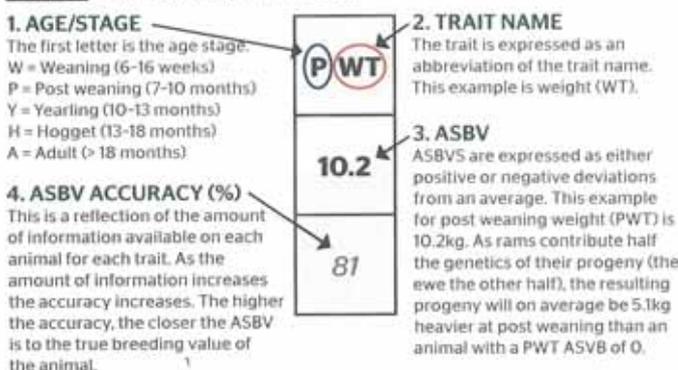
\$12.50
/ewe/year

gain from using worm-resistant genetics and integrated parasite control in NSW's New England region

\$350
million

cost to the sheep industry in deaths, lost production, prevention and treatment due to worms

Figure 1 How to interpret an ASBV



Source: www.sheepgenetics.org.au/Getting-started/ASBVs-and-Indexes

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Dr Alex Ball // T: 02 6773 2493
E: aball@mla.com.au

Dr Johan Greeff
E: johan.greeff@agric.wa.gov.au

For more information on how to use ASBVs to select for worm resistance and other desirable traits visit www.sheepgenetics.org.au

For more information on worm control visit www.wormboss.com.au and www.makingmorefromsheep.com.au/healthy-contented-sheep/tool_11.8.htm

MEAT STANDARDS AUSTRALIA (MSA) SHEEPMEAT

EXTRACTS FROM MLA- MSA SHEEP BROCHURE

Eating quality is of paramount importance to red meat consumers. Meat Standards Australia (MSA) is designed to take the guess work out of buying and cooking Australian lamb and sheepmeat.



All sheepmeat underpinned by the MSA program has met strict criteria to ensure it meets consumer expectations for eating quality attributes of tenderness, juiciness and flavour and is labelled according to recommended cooking method. All participants in the program are licensed to use the trademark, and certify products via an approved Quality Management System in accordance with MSA Standards Manual.

An important element contributing to eating quality is on-farm management of sheep.

BREED

Merino and merino crosses require more careful management to reduce effects associated with stress.

SHEEP AGE

Sheepmeat category is determined by dentition of the animal. Lamb is the premium product.

FINISHING

Sheep that are 1st and 2nd cross merino require a minimum weight gain of 100 grams/day for 2 weeks prior to consignment. Animals with greater than 50% Merino content require at least 150 grams/day for 2 weeks prior to consignment.

SHEEP CARCASE SPECIFICATIONS

Minimum weight requirements are > 16kg hot standard carcass weight for sucker lambs and >18kg HSCW for all weaned lambs, hoggets and mutton. All carcasses must have a min fat score 2.



PRE-SLAUGHTER HANDLING

Sheep and lambs must be handled in a way that stress is minimal to optimise eating quality.

- Minimum 2 weeks off shears.
- Total time off feed must not be greater than 48 hours before slaughter.
- Animals are to have access to water at all times while not in transit.
- A minimum of 2 weeks at consignment property before dispatch.
- Maximum time in transit of 24 hours.
- MSA sheep are accepted via direct consignment and saleyard selling pathways provided all MSA standards are met.

PROCESSING

LAIRAGE

The time in lairage must be monitored to ensure total time off feed does not exceed 48 hours. Total time off water must be less than 24 hours.

ULTIMATE PH

The rate of carcass pH and temperature decline is measured, taking into account electrical inputs and chilling rate. The temperature at which the carcass enters rigor (pH6) is critical when determining and optimising eating quality.

CARCASS HANGING

The carcass can be suspended using the traditional Achilles hang method or tenderstretch (improves the eating quality of the hindquarter cuts).

AGING

Eating quality can improve with aging, all MSA sheepmeat has a minimum aging period of 5 days before it is sold to the customer.

QA SYSTEM

Processors must have Quality Assurance systems in place to meet MSA standards and must be AUS-MEAT accredited.

IDENTIFICATION

MSA eligible carcasses must maintain their identification throughout processing.

TRAINING

Training programs have been developed for all participants in the MSA supply chain.

PRODUCER WORKSHOPS

include how to become an MSA registered producer, MSA program background, producer recommendations and how to implement change on-farm to meet consumer expectations.

SALEYARDS AND AGENTS

provide MSA program overview and information regarding management of saleyard sheep to meet MSA licence requirements.

PROCESSOR TRAINING

consists of technical modules for on-site staff covering MSA standards and requirements.



For more information

<http://www.mla.com.au/Marketing-beef-and-lamb/Meat-Standards-Australia/MSA-sheepmeat>.

COOKING TIPS FOR QUALITY EATING

EXTRACTS FROM MLA- MSA SHEEP BROCHURE



Cooking methods are some of the most important factors in consumer satisfaction and eating quality.

casserole

- Meat should be cut into 20mm cubes.
- Brush meat with oil instead of adding oil to dish.
- Brown meat in small batches (about 200g at a time) to seal in the juices. Set aside.
- Reduce heat and add onions, garlic and spices and sauté until transparent.
- Add flavourings, firm vegetables and liquid.
- Bring all ingredients to the boil and then reduce heat to low. Cover and simmer for approximately 2 hours or transfer to oven dish and cook in low oven (160°C) for 2 hours.
- Add soft vegetables in the last 20 minutes of cooking.

 **panfry / grill**

- Minimum recommended thickness 15mm.
- Brush meat with oil instead of adding oil to pan.
- Ensure that cooking surface is hot. The meat should sizzle on contact.
- Place meat on surface and let cook until moisture appears, then turn (once only).
- Cook to desired degree of doneness.
- Place in a warm place, or cover with foil and rest for 3-5 minutes.

 **roast**

- Preheat oven to recommended temperature - see table below.
- Place roast on a rack in a roasting tray.
- Follow suggested cooking times – see table below.
- Periodically check internal temperature using a meat thermometer.
- Remove from oven and cover with foil when cooked.
- Rest in warm place before carving against the grain.

SUGGESTED COOKING TIMES / 500G	Oven temp	Rare	Medium	Well done
Internal meat temperature		60°C	65-70°C	75°C

SHEEPMEAT CUTS

Loin (boned and rolled), Leg or shoulder (bone in or easy carve)	180°C	20-25 min	25-30 min	30-35 min
Mini roast, rump, shortloin	220°C	15-20 min	20-25 min	25-30 min
Rack	200°C	20-25 min	30-35 min	40-45 min

 **stir fry**

- If buying steaks cut into strips of meat to 75mm x 10mm x 10mm.
- Brush meat with oil instead of adding oil to wok.
- Ensure that cooking surface is hot. The meat should sizzle on contact.
- Brown meat in small batches (about 200g at a time) to keep the pan hot and prevent the meat from stewing.
- Remove from pan. Add aromatics (garlic, chilli and/or spices).
- Add vegetables and sauces, return meat and stir through.
- Heat through and be sure not to bring to the boil.
- Serve immediately.

DUBBO SHOW RESULTS 2013



CHAMPION RAM - ASHBANK



RESERVE CHAMPION RAM - TATTYKEEL

JUDGE: ROS FUNKE

EXHIBITORS INCLUDED:

Mudgee High School "MUDGE HIGH" Mudgee
 Josh Milton "MILTON PARK" Hendon QLD
 Daryl Honeysett "HONEY OAKS" Gulgong
 Pater Matus "TARA" Rockley
 Alan & Jennifer Ireland "BYGO" Tullibigeal
 A,R & I Sharook "LACHLAN VALLEY" Forbes
 Jason Barker "TIMOR" Parkes
 W & L Fyfe "CARINGA" Lake Cargelligo
 Scott Cameron "SUPREME" Wellington
 Bruce Stanford "MERTON" Mudgee
 Daryl & Eric Dixon "ASHBANK" Dubbo
 Victoria Patterson "KINELLAR" Gooloogon
 John Jamieson "WATTLE PARK" Finley
 Dugald McIndoe "SMITHSTON" Glencoe
 Amando & Mark Dissegna "WARBURN" Griffith
 Ian Gilmore "TATTYKEEL" Oberon
 Brayden & Lachlan Gilmore "PREMIER" Oberon
 Scott & Elaine Woodley "KURRAVIEW" Wongarbron
 St Paul's College "ST PAULS" Walla Walla
 Farrer Ag High School "FARRER" Tamworth
 Yanco Ag High School "McCAUGHEY" Yanco

NOVICE RAM

under 14 months, no more than 2 teeth shorn

1. "McCAUGHEY" Yanco Ag High School
2. "MUDGE HIGH" Mudgee High School

**OPEN RAM under 14 months, no more than 2 teeth shorn.
 15 entries**

1. "ASHBANK" Daryl & Eric Dixon
2. "WARBURN" Amando & Mark Dissegna
3. "BYGO" Alan & Jennifer Ireland
4. "PREMIER" Brayden & Lachlan Gilmore
5. "KURRAVIEW" Scott & Elaine Woodley
6. "KURRAVIEW" Scott & Elaine Woodley

**NOVICE RAM showing milk teeth only, shorn. Born 1st June -
 31st July, 2012 12 entries**

1. "SUPREME" Scott Cameron
2. "ST PAULS" St Pauls College
3. "CARINGA" W & L Fyfe

**OPEN RAM showing milk teeth only, shorn. Born 1st June - 31st
 July, 2012 12 entries**

1. "PREMIER" Brayden & Lachlan Gilmore
2. "ASHBANK" Daryl & Eric Dixon
3. "TATTYKEEL" Ian Gilmore
4. "KURRAVIEW" Scott & Elaine Woodley
5. "KURRAVIEW" Scott & Elaine Woodley
6. "WARBURN" Amando & Mark Dissegna



RESERVE CHAMPION EWE - BYGO
CHAMPION EWE - ASHBANK

NOVICE RAM showing milk teeth only, shorn. Born after 1st August, 2012 9 entries

1. "TARA" Peter Matus
2. "TARA" Peter Matus
3. "SUPREME" Scott Cameron

OPEN RAM showing milk teeth only, shorn. Born after 1st August, 2012 13 entries

1. "TATTYKEEL" Ian Gilmore
2. "TATTYKEEL" Ian Gilmore
3. "KURRAVIEW" Scott & Elaine Woodley
4. "BYGO" Alan & Jennifer Ireland
5. "TARA" Peter Matus
6. "SMITHSTON" Dugald McIndoe

NOVICE RAM Born after 1st April 2012, no more than 2 teeth, woolly

1. "McCAUGHEY" Yanco Ag High School

OPEN RAM Born after 1st April 2012, no more than 2 teeth, woolly 5 entries

1. "TATTYKEEL" Ian Gilmore
2. "TATTYKEEL" Ian Gilmore
3. "WARBURN" Amando & Mark Dissegna
4. "SMITHSTON" Dugald McIndoe



RESERVE INTERBREED EWE - ASHBANK

PAIR OF 2 RAMS Shorn, born after 1st April 2012, no more than 2 teeth. 10 entries

1. "ASHBANK" Daryl & Eric Dixon
2. "TATTYKEEL" Ian Gilmore
3. "WARBURN" Amando & Mark Dissegna
4. "WATTLE PARK" John Jamieson
5. "KINELLAR" Victoria Patterson
6. "SMITHSTON" Dugald McIndoe

RAM Born over 1.5 years woolly or shorn 7 entries

1. "HONEY OAKS" Daryl Honeysett
2. "WARBURN" Amando & Mark Dissegna
3. "SMITHSTON" Dugald McIndoe
4. "ST PAULS" St Pauls College

RAM OBJECTIVE MEASUREMENT CLASS to be drawn from shorn ram lamb classes 21 entries

1. "WARBURN" Amando & Mark Dissegna
2. "SMITHSTON" Dugald McIndoe
3. "SMITHSTON" Dugald McIndoe
4. "FARRER" Farrer Ag High School
5. "SUPREME" Scott Cameron
6. "WARBURN" Amando & Mark Dissegna
7. "BYGO" Alan & Jennifer Ireland

DUBBO SHOW RESULTS 2013 CONTINUED

CHAMPION RAM

ASHBANK

RESERVE CHAMPION RAM

TATTYKEEL

NOVICE EWE under 14 months, no more than 2 teeth, shorn.

1. "McCAUGHEY" Yanco Ag High School

OPEN EWE under 14 months, no more than 2 teeth, shorn, 15 entries

1. "ASHBANK" Daryl & Eric Dixon
2. "BYGO" Alan & Jennifer Ireland
3. "WARBURN" Amando & Mark Dissegna
4. "PREMIER" Brayden & Lachlan Gilmore
5. "KURRAVIEW" Scott & Elaine Woodley
6. "KURRAVIEW" Scott & Elaine Woodley
7. "WATTLE PARK" John Jamieson

NOVICE EWE showing milk teeth only, shorn - born between 1st June and 31st July 2012. 11 entries

1. "SUPREME" Scott Cameron
2. "SUPREME" Scott Cameron

OPEN EWE showing milk teeth only, shorn - born between 1st June and 31st July 2012. 14 entries

1. "ASHBANK" Daryl & Eric Dixon
2. "TATTYKEEL" Ian Gilmore
3. "WARBURN" Amando & Mark Dissegna
4. "TATTYKEEL" Ian Gilmore
5. "SMITHSTON" Dugald McIndoe
6. "WATTLE PARK" John Jamieson

NOVICE EWE showing milk teeth only, shorn - born after 1st August 2012. 12 entries

1. "FARRER" Farrer Ag High School
2. "SUPREME" Scott Cameron
3. "FARRER" Farrer Ag High School

OPEN EWE showing milk teeth only, shorn - born after 1st August 2012. 9 entries

1. "FARRER" Farrer Ag High School
2. "KURRAVIEW" Scott & Elaine Woodley
3. "BYGO" Alan & Jennifer Ireland
4. "WATTLE PARK" John Jamieson

NOVICE EWE born after 1st April no more than 2 teeth, woolly

1. "McCAUGHEY" Yanco Ag High School
2. "FARRER" Farrer Ag High School
3. "FARRER" Farrer Ag High School

OPEN EWE born after 1st April no more than 2 teeth, woolly 5 entries

1. "ASHBANK" Daryl & Eric Dixon
2. "SMITHSTON" Dugald McIndoe
3. "SMITHSTON" Dugald McIndoe
4. "McCAUGHEY" Yanco Ag High School
5. "MERTON" Bruce Stanford

PAIR OF 2 EWES shorn, born after 1st April no more than 2 teeth 12 entries

1. "ASHBANK" Daryl & Eric Dixon
2. "TATTYKEEL" Ian Gilmore
3. "WARBURN" Amando & Mark Dissegna
4. "BYGO" Alan & Jennifer Ireland
5. "SMITHSTON" Dugald McIndoe
6. "McCAUGHEY" Yanco Ag High School

EWE over 1.5 years woolly or shorn 10 entries

1. "WARBURN" Amando & Mark Dissegna
2. "SMITHSTON" Dugald McIndoe
3. "SMITHSTON" Dugald McIndoe
4. "SUPREME" Scott Cameron
5. "FARRER" Farrer Ag High School
6. "FARRER" Farrer Ag High School

EWE OBJECTIVE MEASUREMENT CLASS to be drawn from shorn ewe lamb classes 20 entries

1. "BYGO" Alan & Jennifer Ireland
2. "WARBURN" Amando & Mark Dissegna
3. "ASHBANK" Daryl & Eric Dixon
4. "McCAUGHEY" Yanco Ag High School
5. "SUPREME" Scott Cameron
6. "KINELLAR" Victoria Patterson
7. "FARRER" Farrer Ag High School

CHAMPION EWE

ASHBANK

RESERVE CHAMPION EWE

BYGO

KEITH McINTOCH MEMORIAL AWARD - Sires Progeny Group to consist of 3 exhibits, born after 1st April, no more than 2 teeth, both sexes not necessarily represented, wool length open.

Sired by a single ram 15 entries

1. "ASHBANK" Daryl & Eric Dixon
2. "TATTYKEEL" Ian Gilmore
3. "WARBURN" Amando & Mark Dissegna

GROUP 1 RAM and 2 EWES, milk tooth only 16 entries

1. "ASHBANK" Daryl & Eric Dixon
2. "TATTYKEEL" Ian Gilmore
3. "BYGO" Alan & Jennifer Ireland

BEST WHITE SUFFOLK HEAD, any age 9 entries

1. "ASHBANK" Daryl & Eric Dixon
2. "SMITHSTON" Dugald McIndoe
3. "SUPREME" Scott Cameron

SUPREME CHAMPION WHITE SUFFOLK EXHIBIT

ASHBANK EWE

WENT ON TO WIN RESERVE INTERBREED EWE

**MOST SUCCESSFUL EXHIBITOR Prize donated by
Australian White Suffolk Association Inc.**

APPLICATION OF GENOMICS TO BREEDING

M. J. LONG - SUMMARY OF PAPER AND PRESENTATION TO
THE AUSTRALIAN SOCIETY OF ANIMAL PRODUCTION - COWRA, MAY 2013

INTRODUCTION

The Australian sheep industry has undergone some significant changes in the past few decades. Many factors have brought about a dramatic fluctuation in sheep numbers from a peak of 170 million during the 1980's to the current level of around 75 million (MLA 2013). In addition to the huge variation in sheep numbers, the genetic composition of the population has changed from a predominately Merino maternal base with 2-3 main breeds used for cross breeding, to the current population which contains a significant mix of diverse genetics specifically suited to a much wider range of commercial preferences.

The development of a comprehensive performance recording system, under the management of Sheep Genetics Australia (SGA) has supplemented the time honoured system of visual classing and assessment. Historically, genetic gain has been slow and inconsistent with some momentous "breeding fads" actually stalling or reversing genetic gain for several generations. A performance recording system that independently evaluates measurable traits producing Australian Sheep Breeding Values (ASBV's) has allowed for the consistent and rapid improvement across a range of commercially relevant traits that has been independently proven to increase profits across all breeds. (Sheep CRC 2012)

The past 5-6 years has seen this development taken to the next level with the Sheep CRC using single nucleotide polymorphism (SNP) chip technology to identify DNA marker information and generating genomic breeding values that supplement ASBV's for traits that have been historically been measured and has made possible selection for a range of traits that are hard to measure or cannot be measured on a live animal. The immediate advantages of DNA testing young animals is obvious but the identification of commercially advantageous traits alone will not improve genetic gain; it is the deliberate application of this technology into breeding programs that allows for accelerated and reliable genetic gain.

GENOMICS FOR EASY TO MEASURE TRAITS

The use of breeding values allows for the prediction of the genetic merit of animals based on a range of phenotypic measurements adjusted for external influences and estimations based on pedigree and linkages between relatives and across different breeding enterprises. Producers use this information to tailor their genetics with an emphasis on the commercially relevant core traits relating to carcase (Growth, Fat, Muscle), wool (Fleece Wt, Micron) and fertility traits. This has resulted in excellent genetic gain in the Australian sheep industry and allowed for confident selection of superior genetics based on accurate, independent analysis of large amounts of data across all breeds and environments. The more data collected and analysed, the more accurate the ASBV's on individual animals.

Inclusion of genomic breeding values currently referred to as Research Breeding Values (RBV's), into this analysis increases the accuracy of the performance values therefore increasing the confidence in selection of high performance individuals but it is the early measurement of these core traits that provides the greatest advantage. DNA analysis at an early age also allows for the prediction of lifetime performance across a number of commercial traits that would otherwise have taken years to collect and analyse therefore allowing more confident earlier use of these genetics in breeding programs. Earlier use of genetics and faster genetic turnover delivers faster genetic gain. While the advantage gained for the core traits is minimal in Terminal genetics due to the current widespread use of young genetics and accurate ASBV's, it is the lifetime wool predictions in the Merino that will benefit most from DNA testing producing values for wool traits that may have taken 2-3 years to physically collect. One of the defining advantages of genomics is that, not is it possible to gain early information on phenotypic traits that may take many years to physically measure but, we can also determine the impact of specific traits that contribute to lifetime profitability.

GENOMICS FOR HARD TO MEASURE TRAITS

Phenotypic traits that are easily measured have long been the focus of almost every structured breeding program. There are several traits that are hard to measure or almost impossible to physically measure on live animals and the use of DNA analysis has enabled breeders to confidently select for these traits. Predominately these traits relate to meat eating quality (Tenderness, Intra Muscular Fat and Lean Meat yield), parasite resistance (Worm Egg Count), meat nutrition (Omega -3, iron, zinc), taste and shelf life properties, lifetime wool production traits (Adult fleece wt, Micron, Staple strength) and fertility (Number of lambs weaned). These traits, while several may not have obvious direct commercial impact to sheep producers, are vitally important to the processor, retailer and consumer. The consideration of these hard to measure traits into a breeding program is made possible through the generation of RBV's, based on significant research and the identification of DNA markers as part of the Sheep CRC program. The integration of RBV's into a sheep breeding program allows, not only consideration for phenotypic traits that are economically important to sheep producers but, consideration for those who handle and utilise the product after the raw product is sold off farm. This ultimately has significant impacts on the acceptability and market growth of the superior product and confidence to purchase the product in the commercial marketplace.

WHAT GENOMICS MEANS TO THE INDUSTRY

Clear advantages of utilising genomics for core traits alone are greater accuracy, earlier selection for superior animals and increased selection pressure which collectively results in faster genetic gain. Work in the dairy industry has shown genetic gain using genomics in a breeding program to be double that of traditional breeding systems (Scheffers 2012, Hayes 2009) and can result in profits more than twice that from non genomic based programs (Taubert 2011). Gains of this magnitude may not be achievable in the sheep industry but genomics will enable additional gains across a much wider range of traits to be realised. Screening for traits using DNA analysis on very young animals and the subsequent generation of RBV's will allow for all aspects of both phenotypic traits and hard to measure traits to be incorporated into a structured, multi focused breeding program. While this provides benefit in traditional natural breeding programs, the use of artificial breeding techniques such as ET or JIVET/MOET will provide breeders with the confidence and means to quickly multiply superior genes resulting in significantly

faster genetic gain and the accelerated spread of these superior genes throughout the sheep industry. Who ultimately benefits? Everyone within the Australian sheep industry from commercial sheep producers right through to consumers.

What was historically a hit and miss approach to selection is now, with genomics, a measured calculation of all variables to achieve desired outcomes resulting in shorter intervals for adoption of superior traits and greater economic gain. Traditionally, relatively small selections of superior individuals were identified and test mated to evaluate the probability of producing superior progeny. The genetic worth of sires was primarily assessed using progeny testing and the result, good or indifferent, may have taken several years to determine. With the use of genomics, a much larger population of individuals can be screened and assessed at a significantly earlier age for superior genes without the guesswork of either visual selection or decisions made with limited information. While DNA screening would predominately be limited to screening of potential young sires, the obvious potential to also screen selections from the ewe flock and use targeted ET or JIVET programs becomes evident. The impact within a breeding operation of ewe genetics is limited due the smaller numbers of progeny produced; to be able to enhance the influence of the maternal section within a breeding program only adds to the potential gains genomics offers.

One of the major constraints of any breeding program is the existence of correlations that can impede the progression of specific objectives within a breeding program. These correlations exist in all breeds but are especially important in the wool industry where many negative correlations exist between carcass traits, fertility and wool characteristics. However within any population there are individuals that break the trend and the use of genomics allows seedstock producers to quickly and confidently identify individuals that break targeted correlations and allows breeding toward a multi focussed breeding objective without sacrificing one trait against the other. Traditionally, these "curve benders" are the main reason why genetic gain has infrequently experienced phases of above average acceleration and identifying them was more good luck than good management. Identifying them earlier using genomic testing will only further accelerate the gains made through targeted selection for more than one trait.

APPLICATION OF GENOMICS TO BREEDING CONTINUED

Identification and consideration of correlations in a breeding program is vital to achieving specific breeding objectives. Without genomics this is predominately guesswork and to concentrate breeding aims on more than just a few traits would often lead to limited or no progression in the breeding program. The greatest benefit of genomics in this situation is the early identification of a range of selected and varied traits on live animals allowing for the selection of individual animals that have the right mix of traits all heading toward a targeted breeding objective. Genomics offers the unique opportunity to concentrate selection pressure on a specific trait and at the same time regulate the influence of negatively correlated traits to ensure genetic gain is not compromised. Genomic selection should not result in a major change of breeding goals but it will add another level of selection on which to make sire selections and consequently should improve the outcomes of selection decisions.

Genomics offers the opportunity to not only improve production traits but facilitates the development of product differentiation based on RBV's. The development of a niche market or branded product requires some strict assurances to maintain quality and consistency. Genomics offers a means to benchmark product excellence whether it is meat eating quality or wool quality that is being marketed. The development of benchmarks based on genomic RBV's are able to be independently applied across the whole industry and provide confidence to producers and consumers that whatever is claimed within the product description has been accurately verified through DNA testing. Genomic benchmarks for meat eating quality in Australia are a real possibility within a very short time frame and the same could be developed for a whole range of traits identifiable through the use of genomics.

The development of genomics and the subsequent collection and storage of DNA will become a significant asset for all livestock industries. As breeding lines become closer due to the extensive use of superior animals to multiply favourable genes, so too does the risk of proliferation of harmful or mutant genes. The existence of a data base of collected DNA will assist industry to identify and control the expression of these faults in the sheep industry thus alleviating the need to develop a new procedure for investigating the gene/s responsible. While research is currently looking at specific genes

in relation to current priorities within the Australian sheep industry, the future will more than likely raise new issues and the existence of a substantial DNA collection will enable historical investigation of any new trait that may become relevant.

MANAGEMENT ADVANTAGES USING GENOMICS

Rather than managing genomics to fit our breeding objectives, our breeding objectives can now be managed around genomics.

Collection of data to obtain ASBV's is time consuming and always has a human element that can result in inaccuracies with data collection. While some degree of phenotypic measurement needs to be maintained to retain the relevance and accuracy of RBV's, there is the opportunity to either reduce or temporarily cease phenotypic measurements and rely primarily on genomics to evaluate potential high performance individuals. This could be appropriate in a drought season where the genetic potential of a group of animals is not able to be achieved and rather than be cautious about selections based on animals that have not reached their potential, the use of genomics will provide confidence in the selection of superior animals, regardless of the effect of a tough season. The requirement to retain all animals to gain a full complement of phenotypic measurements could be avoided allowing management to better deal with situations where flock structure and size may require some hard decisions to be made.

Identification of superior individuals or selection pressure has traditionally been achieved by an initial selection of a significant number of potential candidates and the preferential feeding and constant evaluation over an extended period of time of these individuals which has an associated higher cost of both inputs and management. Genomics offers the cost advantage of significantly reducing the number of potential young high performance sires that need to be set aside and evaluated therefore reducing both feed and time inputs into the management of the next generation of sires. This results in the same high selection pressure but with a reduced impact on management. Young sires can be assessed using genomics, incorporated into joining programs and have progeny on the ground well before traditional means of evaluation would have provided enough

information and confidence to use these sires.

Genomics allows for some significant changes in the manner in which we manage our stud flocks. Rather than attempting to fit genomics into current management practices, we now have the opportunity to structure flock management around genomics. The use of genomics goes beyond identification of production traits but also provides animal identification and parentage which has vast implications for time management and efficiencies on property. The use of syndicate joining has always had the weakness relating to the absence of reliable pedigree information. While an ideal process in which to test a selection of ram lambs, the inability to

accurately determine pedigree or the complete loss of the pedigree of progeny negated any advantages gained. Single sire joining while ensuring reliable pedigree information is a relatively inefficient use of resources and has the potential to result in lower conception rates or complete failure. Genomics not only allows early selection of potential young sires, but the subsequent accurate progeny matching to these sires. It allows the development of more appropriate breeding programs that are easier to manage, have superior economies of scale and provide elevated rates of genetic gain. The use of genomics results in more efficient use of inputs and higher gains through better use of all resources on property.

GENETIC GAIN USING GENOMICS

The use of genomics allows us to make faster genetic gains due to a number of advantages in several areas. The formula for Potential genetic gain is summarised as:

$$\text{POTENTIAL GENETIC GAIN} = \frac{\text{Selection intensity} \times \text{Accuracy} \times \text{Genetic variation}}{\text{Generation Interval}}$$

What genomics offers to this formula is a positive effect in all areas of the equation. To increase genetic gain we need to increase the magnitude of the numerator (top line) and/or decrease the value of the denominator (below the line).

The use of genomics in a breeding program does both in the following manner:

1. The use of genomics across a population increases the degree of selection intensity allowing for a larger population to be evaluated. Current recommendations are 20-25% of young sires from the drop be DNA evaluated.
2. The addition of DNA testing to measured traits increases accuracy in the range of 5% to 30%
3. DNA testing allows for accurate identification of a much wider range of traits and the degree of variation within those traits.
4. The use of genomics has the potential to significantly reduce generation interval

With the potential to increase the value of every variable on the top line and at the same time decrease generation interval, the potential rate of genetic gain in a breeding program can be accelerated. Even just to push one or two of these variables in the right direction will increase the potential for genetic gain above what is currently possible.

APPLICATION OF GENOMICS TO BREEDING CONTINUED

CONCLUSION

Genomics is the “Satellite Navigation System” for the Australian Sheep industry that will allow breeders to more accurately develop a genetic blueprint for achieving targeted outcomes and at the same time increase rates of genetic gain. It will allow breeders to navigate around issues that have previously been virtually impossible to resolve and provide new opportunities for future breeding programs and the development of new products. Genomics also offers the opportunity to adjust flock management to increase efficiencies of both inputs and time. The overall contribution of genomics to industry is more consistent and accelerated genetic gain resulting in higher returns to producers and more consumer confidence in the products that the Australian sheep industry through its producers is marketing.

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