

Balmoral Sire Evaluation Group

Trial Newswww.balmoralbreeders.com.au**In this edition:**

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From the Chairman

Welcome to our winter edition of our newsletter. As we see a surging wool market and good opening rains in our district there is plenty to be positive about at the moment. It has been very pleasing to see the wool market stay at great levels for over 12 months now so all growers have been able to get a piece of the action.

We have just gone through the busiest part of the year for the sire evaluation trial with our field day in February, with all the classing and testing that needed to be done beforehand to get the data organised for the day. Then there was shearing, body scoring, weighing and the AI program to join the ewes with the 2018 ram entries. See the updates on activities in this newsletter.

Our trials continue to progress well, even though there have also been some on-farm challenges in the last couple of months in our 2017 trial, details of which are in the property report.

I would like to take the opportunity to thank the committee and everyone who helped to organise yet another successful field day. It was great to see such a big display of sheep and to hear about the progress of the MLP project from the guest speakers. You can see some of the images from the day in this newsletter and download presentations from our selection workshop from our website.

We have also set the date for next year's field day, so remember to put the date into your diaries:

Friday, February 22, 2019

We also welcome our new host property Jigsaw Farms for the 2019 and 2020 AMSEA trial joinings. We all look forward to working with the team there over the next few years (see page 9)

Also a reminder to keep an eye out for our display in the AWI site at the upcoming Bendigo Sheep and Wool Show and Hamilton Sheepvention.



Mark Bunge



2018 Field day — Friday, February 16 — Tuloona, Harrow



The annual field day for our trail site attracted more than 120 people for a day inspecting sheep from the 2015 and 2016 MLP trials at 'Tuloona', and the 2017 AMSEA trial at 'Koorringal'. Another popular sheep selection workshop was held and presentations can be found on our web-site www.balmoralbreeders.com.au. An excellent presentation from AWI about the MLP trial and the surprising trends found in the data was informative and entertaining.



2018 Field day — Friday, February 16 — Tuloona, Harrow



Trial property update 2015 & 2016 MLP trials: Tuloona Pastoral Company, Harrow



Since the field day in February the 2015 and 2016 MLP Progeny have progressed well.

Fortunately Harrow received an earlyish Autumn break on the 14th April and feeding quickly stopped by mid May as pasture growth rates exceeded 40kgDM/Ha during May.

Here in Western Victoria we are in a lucky part of Australia, but knowing mother nature we can be assured our turn will come, which is why Tuloona's major priority is drought preparedness.

This year we will have reserves of grain, straw, hay and silage to feed every animal for two years if no rain eventuates. Lets hope it never happens, but you should never say never.

From a management perspective the biggest challenge of the MLP progeny is the inability to draft off the tail, which comes with the gig of running the trial.

It is particularly apparent this time of the year when we are trying to get their worm egg count (WEC) levels high enough to do individual WECS, while also managing the nutritional requirements for different in vitro requirements of the ewes. But if done right, we will learn invaluable information on resilience and the repeatability of animal behaviour.

Below is a graphic showing what has been going on with the MLP progeny over the last couple of months. We will keep you posted on how lambing goes in the next newsletter.



Michael Craig, owner,
"Tuloona"

Date	21 st February		19 th March	12 th June		16 th June	
Activity	Shearing		Joining (5 weeks natural)	Ultra Sounding (49 days from ram removal)		Individual WEC Collection	
	<u>Avg Fleece Wt</u>	<u>Avg Fd</u>	<u>% Rams Joined</u>	<u>Conception Rate</u> (% Ewe Pregnant)	<u>Reproductive Rate</u> (% foetuses)	<u>Avg Condition Score</u>	<u>Average Bodyweight</u> (curfewed)
2016 MLP	3.9kg	17.7 Fd	1.73%	86%	92%	2.97 (range 2.5-3.8)	41.8kg (range 28-62kg)
2015 MLP	5.2 kg	18.3 Fd	1.41%	95%	118%	2.99 (range 2.1-4.2)	49.2kg (range 34-65kg)



The F1 MLP ewes one month pre-lambing in July with their guard alpacas at Tuloona.

Trial property update 2017 & 2018 AMSEA trials: Koorinal, Coleraine



The season at Koorinal has been very dry over summer but with good carry over feed from last spring supplementary feeding rates have averaged out. We have since had a good average autumn break in mid April and have now got enough green grass to put the feeder back in the shed for the time being.

2017 trial:

Since our last newsletter the 2017 drop has had its challenges from a number of places, not the least of which has been the challenge of weather and gathering trial results.

The lambs were weaned in early January after a bit of a delay in getting enough positive matches through the pedigree match maker system. Our site uses this system as it is the least invasive for the sheep and can still produce accurate results.

We have now had these results confirmed with DNA testing to fill in the gaps. After weaning the lambs were fed a pellet ration, then put them onto a lucerne paddock until that ran out and then put back into the pellets until the autumn break.

The lambs were shorn in April and we recorded fleece weight, micron, length and strength. Unfortunately, our local areas was hit with an unseasonal cold snap and a large number of graziers lost off-shears sheep. Koorinal was similarly impacted by this chill event and it is regrettable to report there were a number of mortalities from this.

With the onset of winter and wet weather we also saw an unusual WEC event where the worm burdens of all our lambs shot up significantly, from a WEC count of 70 to 770 in just over 10 days. As a result, individual WEC samples and drenching of the lambs of the lambs was swiftly undertaken by the committee, together with a move onto clean pastures should see the lambs now pick up. That rapid rise in worm burden, did, however, also cause mortalities in the sheep.

In short, the last few months have been unfortunate and regrettable, and all 2017 trial entrants should now have received contact from our committee in this regard to update them individually on the events and the trial. This newsletter contains the post-weaning assessment of the 2017 trial lambs and irrespective of the recent turn of events, the 2017 trial remains viable and able to produce robust data for our trial entrants and wider industry.

2018 trial:

Since our last newsletter we have confirmed a full list of 20 sires for our 2018 AMSEA trial. This includes links to other AMSEA trials and the very exciting trial of 50 year old semen from Sydney University. Further information about the syndicate semen being used can be found on page 6 of this newsletter.

The AI joining program for the 2018 sire group took place over two days in April with each sire joined to 56 ewes.

The pregnancy scanning for this trial group has just been completed with a reasonable result of 647 ewes successfully joined with a total of 896 fetuses out of 1120 ewes. A full breakdown of the scanning results is included in this newsletter.



Mark Bunge, owner
Koorinal



The AI of the 2018 AMSEA trial at Koorinal in April has seen some good conception rates in the 1120 ewes joined. The trial includes using semen frozen 50 years ago when AI technology was in its infancy. Pictured is the Genstock team in action at Koorinal.

Balmoral Sire Evaluation Trial 2017 Drop Post Weaning Update

Post Weaning Flock Breeding Values (FBVs)								
Sire Name	Weight (kg)	GFW (%)	CFW (%)	FD (um)	CV (%)	SL (mm)	SS (N/ Ktex)	WEC (%)
Anderson Poll, 120096	1.8	17	17	1.6	0.8	9.5	-3.4	-65
Centre Plus Poll, 407445	-0.9	-2	-3	-0.5	-1.7	-0.2	0.7	-15
Connewarran, 015024	0.7	3	3	-1.0	0.3	-5.8	1.8	60
Hazeldean, 12.4030	-2.1	28	32	-0.5	-0.3	6.7	5.5	19
Kerin Poll, 151911	2.0	-16	-15	-0.4	-0.5	-3.1	-3.4	39
Kurra-Wirra, 150583	0.8	10	4	-0.5	-0.2	-4.2	-0.8	4
Lachlan Merinos, 150280	-3.3	-12	-17	-0.1	-0.4	-2.0	2.0	42
Merinotech WA Poll, 122041	0.9	-9	-6	1.1	0.2	-3.7	3.8	5
Moorundi Poll, NE73	-0.2	4	5	0.2	1.2	-3.8	3.3	9
Mumblebone, 130850	0.4	-12	-14	1.6	-1.9	3.6	2.5	-4
Mumblebone, 151723	-1.7	-7	-3	0.7	-1.1	2.5	4.1	-36
Nerstane, 140053	-0.4	-6	-9	-0.8	1.7	-8.2	-3.5	-15
Ridgway Poll, 140721	-0.4	-3	-1	-0.7	-0.2	1.7	0.7	-1
The Mountain Dam, WY- A037	-1.8	-4	-1	0.4	1.5	2.8	-0.6	18
Tuckwood Poll, 131026	-0.7	-11	-10	-0.2	-0.4	2.0	-0.7	92
Tuckwood Poll, 141025	2.7	13	21	-0.3	0.1	2.6	-1.5	-7
Turkey Lane, 150077	-1.8	4	-1	-1.1	-0.7	4.9	0.9	-23
Wallaloo Park Poll, 140261	-0.6	-29	-36	-0.5	-0.2	-3.6	-9.3	-1
Woodyarrup, 140149	8.0	24	25	0.2	1.6	-2.6	-3.9	-31
Yiddinga, 154995	-3.3	6	10	0.6	0.2	0.5	1.7	na
Progeny Group Average	23.8 (kg)	1.5 (kg)	1.1 (kg)	14.4 (um)	19.5 (%)	50.5 (mm)	29.6 (N/ Ktex)	

Balmoral Sire Evaluation Trial 2018 Pregnancy Scanning Results

Sire Name	Ewes Joined	Empty	Single	Twin	Triplet	Ewes Pregnant	Conception	Foetuses	Reprod'n Rate
Anderson Poll, 150266	56	22	21	13		34	61%	47	84%
Challara Poll, 150245	56	26	19	11		30	54%	41	73%
Ejanding Poll, 155906	56	17	21	18		39	70%	57	102%
Glen Donald Poll, 150091	55	19	23	12	1	36	65%	50	91%
Glen Holme, 151450	54	27	17	9	1	27	50%	38	70%
Hannaton Poll, 130015	56	22	23	10	1	34	61%	46	82%
Karabein Poll, 150357	55	24	22	9		31	56%	40	73%
Kerin Poll, 160137	55	30	18	7		25	45%	32	58%
Koorinal, 150026	54	18	20	14	2	36	67%	54	100%
Kurra-Wirra, 160029	56	26	25	5		30	54%	35	63%
Merinotech WA Poll, 155477	56	31	20	5		25	45%	30	54%
Nerstane, 150226	55	25	24	6		30	55%	36	65%
Sydney Uni 50yo Ram Semen	56	22	22	12		34	61%	46	82%
The Mountain Dam, 14/RG076	55	20	27	7	1	35	64%	44	80%
Tuckwood Poll, 131026	54	25	17	11	1	29	54%	42	78%
Turkey Lane, 150071	53	23	15	15		30	57%	45	85%
Turkey Lane, 150077	56	19	21	16		37	66%	53	95%
Wallaloo Park Poll, 161514	54	19	20	14	1	35	65%	51	94%
Woodside Moutajup, 110149	56	19	24	13		37	66%	50	89%
Yiddinga, 160132	56	18	26	11	1	38	68%	51	91%
Average	55	23	21	11	0.5	33	59%	44	80%
Total	1104	452	425	218	9	652	na	888	na

2018 Balmoral Sire Evaluation trial

Sire profile — 50 year old semen

Associate Professor Simon de Graaf
The University of Sydney

The Balmoral AMSEA site wound back the clock this year with entry of the oldest frozen semen in existence as a 'sire' in the 2018 program.

Frozen in 1968 by Dr Steven Salamon of The University of Sydney, the 50 year old semen entered in this year's program is a pool of semen from 5 rams of Ledgeworth or Wanganella genetics owned at the time by Peter Walker of Woolaroo, Yass.

Originally frozen to prove sperm could survive storage in liquid nitrogen (-196°C) for several years, this bank of semen is to the best of our knowledge the oldest in existence of any species (human or animal) anywhere in the world.

A demonstration of high fertility in the 2018 program will provide evidence that long term frozen storage of sperm safely and reliably preserves genetics for future use, not just for agriculture but also human medicine.

This is of particular importance to young male cancer patients who have stored semen prior to radiation treatment and/or chemotherapy who potentially may want to start a family decades later and are unable to conceive naturally.

Beyond insights into artificial breeding and semen freezing technology, use of this semen will also shine a light on the genetic progress that has been made over the last 50 years.

It will be very interesting to see the differences in the performance and appearance of lambs sired by rams that last trod the paddock in the late 1960s.

This trial offers a remarkable opportunity to open a window to the industry's past and in doing so also contemplate the future of sheep selection and genetics and what we might expect to see in 50 years time.

Sadly, Dr Steven Salamon passed away late last year at the age of 99, shortly before the semen he froze was used.

For researchers at The University of Sydney, looking down the microscope at sperm cells swimming for the first time in 50 years is a window to our own past and a reminder of the remarkable discoveries our predecessors made to enable the artificial insemination of sheep. Our current research projects aim to build on this legacy and deliver the next generation of assisted reproductive technologies for the sheep industry.

Results of the AI program using the semen appears n page 7.

For further information please contact Associate Professor Simon de Graaf at The University of Sydney. E: simon.degraaf@sydney.edu.au; M:0403295962.



ABOVE: Associate Professor Simon de Graaf defrosting semen frozen 50 years ago at AI at Koorlingal in April.



LEFT: The late Dr Steven Salamon who froze the semen in 1968 and who prior to his death last year expressed his wish for it to be defrosted and tested for viability.

BELOW: Dr Salamon undertaking early AI work at Sydney University.



Balmoral Sire Evaluation trial: 2019 host property introduction: Jigsaw Farms, Hensley Park & Melville Forest

Eve Kantor and Mark Wootton



Jigsaw Farms, our family farming operation of 3,378 hectares, is located at Hensley Park and Melville Forest, near Cavendish in Western Victoria.

The farms receive an average annual rainfall of 675 mm and are dominated by duplex soils. They integrate forestry, carbon and indigenous plantings with high-productivity grazing. Over 600 hectares of the farms have been planted out to hardwood high value sawlog timbers, mainly Spotted Gum or permanent revegetation shelter belts.

The mixed grazing operation consists of 25,000 fine wool Merino ewes which are joined to either Merino (60%) or terminal sires (40%) and we also run a 300-cow EU cross-breeding operation.

The farms currently run over 50,000 Dry Sheep Equivalents (DSEs) in a high input production system (average Olsen P of 20) at a winter stocking rate of 21 DSE/ha.

The underlying focus of Jigsaw Farms is to integrate a profitable, highly productive stock and agroforestry operation while adhering to environmental guidelines, based on the understanding that looking after and developing the non-pasture areas of the farm actually assists productivity.

The sheep stud and flock is managed by Jack Leonard in collaboration with Mark Ferguson. This relationship, which started in 2010, has produced a sheep flock that has maintained its 18.2 micron average and its 5.2kg average fleece weight, while dramatically improving the flock's fertility levels. This is a result of a genetic focus on both muscle and fat, and the strict adherence to the Life Time Ewe Management learnings. We ceased mulesing in 2016 as a result of genetic selection. If needed, we now use a breech cryogenic liquid treatment on about 15% of our lambs with very positive results, both from a lamb growth and wool premium perspective.

The proposed ewes for the Balmoral sire evaluation trial in 2019 were born in spring 2016. There are 4,400 ewes in this drop to select from which will have reared at least two lambs before the trial.

We are looking forward to seeing how our sheep perform with a range of different sires and welcome the scrutiny and development opportunities that the trial will bring.



*Mark Wootton,
manager
Jigsaw Farms*



Jigsaw Farms' Jack Leonard (left) and Mark Wootton pictured on July 9 with some of the ewes which will be joined to sires in the 2019 trial .

Merino Lifetime Productivity Project National Update Project manager: Anne Ramsay



With so many woolgrowers focussing on improving their flock reproduction, the Merino Lifetime Productivity (MLP) project is generating an important dataset that can be used to better understand the role that genetics plays in improving reproductive performance and overall lifetime productivity.

It was exciting to have the Balmoral 2015 drop maiden ewes complete a full production cycle and yield the very first reproduction results for the project. If you haven't already checked out the results, head to the MLP website and follow the links to the report page to download a copy of the MLP Report (www.wool.com/MLP).

The results suggest that across the 25 sires; there were small differences in conception, large differences in litter size and moderate differences in ewe rearing ability. When combined we see large differences between sires in their ability to wean lambs (figure 1). It's good to remember that these results are based on just 500 records from what will become 25,000 lambing records - and that we need this number of records to be confident in overall outcomes.

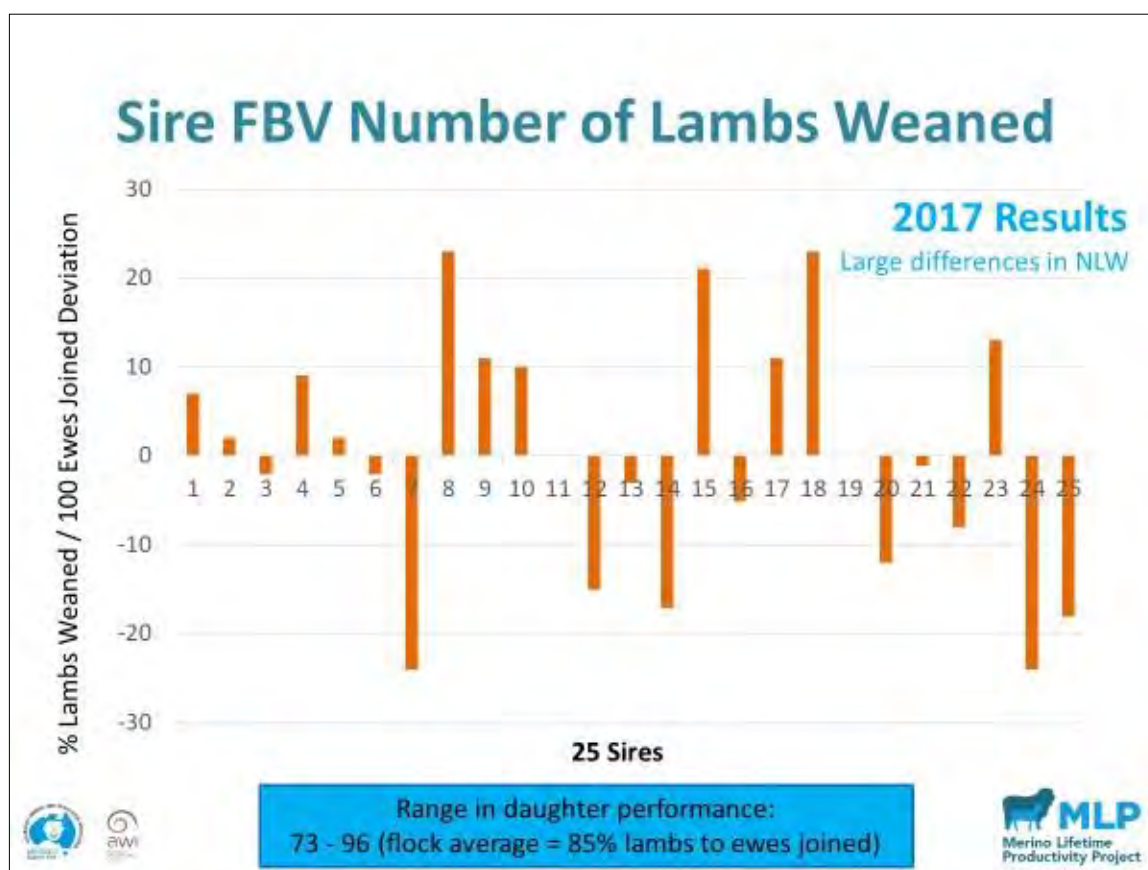


Figure 1: Sire Flock Breeding Values (FBV) for number of lambs weaned, Balmoral maiden ewe results*.

*Note that sire flock breeding values (FBV) are halved to generate the range in daughter performance. Breeding values are generated from data recorded within-site and within-drop and express the expected **genetic** performance of a sire relative to another sire in the evaluation. Breeding Values improve the accuracy of sire results because they account for the association between traits, the heritability of the trait, and non-genetic affects such as birth and rear type, sex (see adjustments listed earlier), and the number of progeny a sire has in the analysis.

In 2018 the daughters from 78 industry sires will be joined naturally across three different MLP sites (Balmoral, MerinoLink and Pingelly) and by this time next year a better understanding of the impact that

The Merino Lifetime Productivity Project is being undertaken in partnership between the Australian Merino Sire Evaluation Association Incorporated (AMSEA) and Australian Wool Innovation (AWI). AMSEA and AWI would like to acknowledge those entities who also contribute funding, namely Woolgrowers through sire evaluation entry fees, site committee in-kind contributions, and sponsors of AMSEA. A special acknowledgement is also made to the Australian Government who supports research, development and marketing of Australian wool.

Merino Lifetime Productivity Project National Update continued Project manager: Anne Ramsay



maiden reproduction has on adult fleece and carcase, classing and disease resistance performance. With repeat adult records over time we will then have greater insight into how these traits relate to each other, and how we can more efficiently and economically deliver lifetime ewe performance.

The kinds of questions that the project will answer in relation to reproduction are around:

- What are the features, and how common, are ewes that can do it all – produce lambs, wool, carcase traits whilst coping with a worm burden?
- What is the most economical way for commercial growers to identify ewes that are more productive through life?
- What do we need to adapt in our current approaches to selection to deliver better ewe lifetime production?

If you would like to receive regular updates from the MLP project, make sure you head to the project website and click on the link to subscribe www.wool.com/MLP.

For more information on the MLP project call Tom Silcock, Balmoral Site Manager, 0419 882 239 or Anne Ramsay, MLP Project Manager, 0400 368 448 (Pictured RIGHT at the 2018 Balmoral field day).



Want to keep up to date with what's going on at the Balmoral Sire Evaluation Group? Here's how:

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Regularly check our website:
www.balmoralbreeders.com.au

Get yourself on our mailing list by emailing our secretary: lizmecham@bigpond.com



Or find us and have a chat at these industry events:

Bendigo Sheep and Wool Show, July 20-22
Hamilton Sheepvention, August 6 & 7

Australian National Merino Sire Evaluation Association Executive Committee (AMSEA)

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Thank you to our Sponsors

We gratefully acknowledge the generous support of our sponsors and appreciate their participation in our trials.



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