Merino LINK

Engagement
Education
Exploration
Exchange

February/March 2016 | www.merinolink.com | Issue 4

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Dates for the Diary

2nd March 2016
MerinoLink Annual Conference – Wagga Wagga

2nd March 2016
MerinoLink Limited AGM – Wagga Wagga

2nd March 2016
2016 Peter Westblade Scholarship Dinner

3rd & 4th March 2016
Peter Westblade Memorial Merino Challenge
2nd Assessment Shearing – Wagga Wagga

4-6th April 2016
IWTO Congress – Sydney
(International Wool Textile Organisation)

Sheep Genetic Regional Forums

- 17/05/2016 - Armidale NSW
- 19/05/2016 - Young NSW
- 24/05/2016 - Wodonga VIC
- 26/05/2016 - Hamilton VIC
- 09/06/2016 - Launceston TAS
- 21/06/2016 - Adelaide SA
- 23/06/2016 - Mt Gambier SA
- 26/07/2016 - Williams WA

10-12th August, 2016
Lambex - Albury

Welcome to the fourth edition of ***MerinoLink Limited Newsletter***.

MerinoLink Limited AGM Notice Wednesday 2nd March, 2016 4:00 pm

Wagga Wagga RSL Club

Corner of Kincaid & Dobbs Streets, Wagga Wagga

Sally Martin
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Narrandera 02 6959 1209	Young 02 6382 5340	www.mosesandson.com.au enquiry@mosesandson.com.au	

TOTALLY INTEGRATED APPROACH TO SHEEP AND WOOL PRODUCTION AND MARKETING

- **Our aim is to increase the profitability of our clients.**
- **Six strategically placed wool stores ensure you receive personalised service from your local wool team.**
- **Your money stays in the area, supporting our local towns and communities.**
- **Our name is our reputation, since 1920 we have been marketers to the wool industry.**

Bluechip Livestock offers:

- Access to unique genetic performance data, exclusive to Bluechip Livestock.
- Predictability of different bloodlines' performance.
- The ability to increase your income through high performance sheep, without increasing your current costs.
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bluechip livestock

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MerinoLink Limited is a not for profit organisation that aims to facilitate sheep grower's and service providers link with information, knowledge and research.

MerinoLink's founding members are from a wide range of sheep businesses with varying production systems. The Members have been brought together by a common enthusiasm for profitable Merino sheep and a desire to continue to build their businesses, client businesses and the sheep industries profitability as a whole.

MerinoLink is committed to assisting our members make better use of past and current research. In addition, MerinoLink aims to build networks and add value to existing and future research and development.

MerinoLink recognise the opportunities to work together to develop research projects for the future improvement of the Australian Sheep industry.

We aim to provide all members with access to industry organisations and facilitate a two way dissemination of information.

MerinoLink consist of producers and service providers moving our industry and members forward as fast and effectively as possible. This is made possible by MerinoLink's engagement with members and industry, education of members, exploration of research ideas and exchange of the results.

MerinoLink CONTACTS

www.merinolink.com

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Merino Lifetime Productivity Project (AWI/AMSEA)

Anne Ramsay, MLP Project Manager

Australian Wool Innovation (AWI) and the Australian Merino Sire Evaluation Association (AMSEA) have teamed up to deliver the Merino Lifetime Productivity Project (MLP).

The project offers a unique and exciting opportunity to evaluate lifetime Merino productivity and the role that genetics plays in generating lifetime returns.

Four independent sites located across Australia will be involved in collecting and recording this data. The sites will operate similar to current standard sire evaluation sites – following the rigorous and independently assessed measured and visual assessment protocols.

120 sires will be artificially inseminated to 90 ewes each to generate 3,600 F1 ewe progeny. The F1 ewe progeny will form the basis of the research. The F1 ewe progeny will be assessed as per a standard sire evaluation up until they are between 18 to 24 months of age.

At the conclusion of the standard sire evaluation assessments AWI funding will support the ongoing measurement and visual classing of all F1 ewe progeny through 4 to 5 joinings (capturing reproduction and survival records) and annual shearings.

The first site "**Elders Vic" at Harrow, Vic**, joined in 2015 with 24 sires entered. In 2016 two new sites joined the project with 13 sires joined at **MerinoLink, Temora (NSW)** and 15 sires joined at **Pingelly in Western Australia**. Each site will join for two years with the second joining at Elders Vic planned for later in 2016. It is hoped that a fourth site will be established for 2017.

The project aims to answer many questions frequently discussed in the Merino industry. What is the impact of selecting for growth, reproduction and carcase traits on Merino Lifetime productivity? Why do some animals consistently perform year in and year out whilst others fade with time? Are there any factors that might help us to better predict superior lifetime performance? And do animals selected on breeding values at a young age have better lifetime productivity?

The broader aims of the project are to:

- Where necessary, provide the evidence and data that the current systems, such as Sheep Genetics, can be enhanced to more accurately predict lifetime productivity.
- Demonstrate to the industry in a commercial environment the cost benefit relationship of measuring multiple adult traits throughout the lifetime of an animal.
- To validate the current breeding value technology across sheep types and environments.
- Provide reproduction records to the MERINOSELECT database, allowing the industry to more accurately assess the relationship between all the components that make up lifetime productivity.
- Provide a common focus for a wide range of ram and commercial breeders with differing breeding philosophies.

The project has attracted considerable interest to date with ram breeders eager to assess sire lifetime performance through their daughters. Over 90 nominations were received from ram breeders wishing to fill the 52 spots available in 2016. Ram breeders wishing to nominate for the 2017 joining can contact the project team or individual sites for more information.

MLP Project Manager Anne Ramsay on **M:** 0400 368 448 or **E:** stenhouseconsulting@bigpond.com

MerinoLink – Lifetime Productivity Project Site Update

Sally Martin, MerinoLink Limited CEO

MerinoLink Limited will manage one of the four sites that are participating in the AWI/AMSEA Merino Lifetime Productivity Project (LTP). The ewe base for the MerinoLink 2016 and 2017 joining consists of the following ewes:-

Bluechip Livestock bred ewes

a. The original foundation ewes purchased by Bluechip Livestock from Billandri (2 joinings) and Nerstane (1 joining). The foundation ewes generated the 2011 and 2012 drop progeny being used in the LTP Project.
b. The 2013 and 2014 drop lambs are out of the 3 sire evaluations ewe progeny 2011 and 2012 drop ewes. Ewes have full pedigree and have all been DNA sampled and measured for all AMSEA required traits in addition to older age traits – gfw, fd and nlw {2011 drop [3 joinings]; 2012 drop [2 joinings]; 2013 drop [1 joining]}.
c. The Bluechip wool clip has averaged 18.3, 18.2 and 17.4 micron in 2013, 2014 and 2015 respectively.
d. All Bluechip ewes and progeny have been DNA parent tested, the 2015 drop marked 116% lambs.
e. A total of 500 and 700 Bluechip ewes will be available for the 2016 and 2017 joining respectively.

Additional Purchased in ewes

Ewes were purchased by Bluechip Livestock, owned by Marty Moses, specifically for the Lifetime Productivity Project from three ram breeders – Pooginook, Bundilla and Centre Plus - and one commercial Merino breeder (Pooginook ram source) to add to the current Bluechip Livestock ewes, giving a total number of ewes ~1,250 (90 ewes per sire; total of 13 sires year in 2016).

The foundation ewes selected for the Lifetime Productivity trial meet the following quality criteria:-

- Structurally sound;
- Able to deal with high rainfall events;
- Between 2 and 5 years of age;
- Ewes have reared a lamb;
- Average MP+ index 141.2 (Bundilla 124.7; Pooginook 143.2; Centre Plus 156.2) October 2015
- Commercial ewe average micron (November 2015 19.5 micron)

Foundation ewes at the 2016 AI Program

Lifetime Productivity Project MerinoLink Site Committee

The MerinoLink Board is the overarching committee for the Lifetime Productivity Project with a Site Committee responsible for the project management and operation. The Site Committee members consists of 1 commercial breeders (Richard Keniry), 3 ram breeders (Matthew Coddington, Mark Mortimer and Rick Baldwin), 2 service providers (Sally Martin and Craig Wilson), the site owner (Marty Moses) and site manager (Simon Coddington).

2016 AI Program

The 2016 AI program ran over 3 days from the 4th – 6th January, 2016.

Ewe Allocation to Sire Group

The demographics (age, source, body weight, condition score) of the Foundation Ewe Base was used to allocate ewes to each sire group by AGBU. The ewes will be classed again prior to the 2017 AI program.

Foundation ewes at the 2016 AI Program

List of Sires Participating in the Merino Life Time Productivity Project - as at February 2016			
Elders Vic 2015	**Elders Vic 2016**	**MerinoLink 2016**	**Pingelly 2016**
Billandri Poll 130087	Anderson 120096	Bella Lana 130296	Billandri 130641
Bogo 111424	Centre Plus 707115	Boyanga 145112	Boolading Blues Purple Tag 708
Bundaleer Poll 13V741	Glen Holme AJK 141077	Glen Donald 2-14	Claypans 130597
Bundilla 111265	Grass R-4	Greendale 120012	East Mundulla Jonty
Centre Plus Poll 207316	Greendale 120012	Leahcim Poll 090918	Ejanding 145096
Darriwell 130941	Greenfields PM 345	One Oak No.2 R56	Haddon Rig HR 2-715
Glenpaen 120042	Greenland 2.366	Pastora 082893	Hazeldean 000043
Greenfields Poll 130599	Hannaton 120048	Poll Boonoke PB2-020	Ingle 130387
Hazeldean 000043	Hazeldean Hugh 11.3542	Pooginook Poll 140632	Leahcim Poll 090918
Kurra Wirra SR5681	Kooringal 13-519	Roseville Park 14-0611	Merinotech WA Poll 100081
Leahcim Poll 090918	Kurra Wirra SB5585	Trigger Vale TV140477	Moojepin 140377
Leahcim Poll 123153	Leahcim Poll 090918	Wattle Dale 140754	One Oak No.2 R56
Merinotech WA Poll 100081	Melrose 12UGB060	Wurrook Y 149	Rhamily Benny 110330
Mokanger 120092	Mumblebone 140026		West Plains Mercenary
Moojepin 100248	Nerstane 100919		Wyambeh 140141
Mumblebone 130389	One Oak No.2 R56		
Nareeb Nareeb 130380	Stockman Stilts		
Nerstane 130467	Terrick West 12-2220		
One Oak No.2 R56	The Mountain Dam ESA004		Common Link Sires - 2016
Roseville Park 140019	Trefusis 110482		Link sires across site and years
The Mountain Dam ESA004	Tuckwood Yellow 26		
Tuckwood Poll 121021	Wallaloo Park Purple 273		
Yalgoo 120043	Woodyarrup 120175		
Yiddinga 130374	Yiddinga Orange 1992		

New Livestock Management Equipment from Allflex – advertorial

Jim Meckiff, Sheep Business Manager, Allflex

Allflex is excited to bring a number of new products that will complement the sheep RFID product range. Jim Meckiff, Sheep Business Manager with Allflex introduces these new products and describes how graziers can get the most out of them. For the sheep breeder who believes average is no longer OK, Allflex has the tools to make measurement and selection for fleece weight, body weight, micron or reproduction possible.

RFID ear tags are the essential part of the progressive sheep breeder's kit, and the Allflex RapIDTag ticks all the boxes and makes Precision Sheep Management simple and possible. RapIDTags are NLIS accredited, one piece, semi-automatic application with large easy to read visual printing.

The Allflex RS420 Green Stick Reader has unique features that put it ahead of the rest when it comes to wool production. Already a reliable reader it has a unique feature that enables the reader to scan the RFID tag and send the Visual ID (e.g. 140075) to a barcode printer, by uploading a tag bucket file to the reader. This gives breeders a better idea of mob, sire group or tag range that a fleece comes from on the classing table, rather than looking at a unique 16 digit RFID. It's also easier to read and gives you confidence when the VID tag matches the barcode. This is especially useful when fibre testing in shed.

The Allflex RS420 RFID reader is compatible with iPhone or iPad using the RS420 App which allows files/ sessions to be emailed to the office while still in the yards!

Printing a barcode with the animals RFID or VID removes the human error that often occurs allowing the fleece or wool sample to be tracked through the shed or lab at production speeds. Barcodes also reduce the stress on staff and management to make accurate data recording a certainty.

Allflex is excited to add two RFID barcode printers to the Allflex product range, available through Allflex distributors. The Zebra IMZ220 is a simple docket printer ideal for fleece weighing or fibre testing in shed or lab. The Zebra QL220 is a label printer that is used when the animals RFID needs to be stuck to a sample; e.g. DNA blood card, blood sample, fibre test or WEC. The QL220 can also use docket paper. Both printers are Bluetooth enabled, require no cables and can be connected to Bluetooth capable RFID readers. Teamed with the RS420 Green Stick Reader these printers run all day on the inbuilt rechargeable battery. Allflex can also supply your paper or label requirements.

For more details speak to your Allflex stockist, visit www.allflex.com.au or call 1300 138 247.

Relative Sheep Enterprise Performance - 2015

Phil Graham, Technical Specialist, NSW Agriculture, Yass

This report looks at the production and financial performance of sheep enterprises across NSW. No sheep enterprise is greatly superior to any others over the long term and contrary to popular belief meat based enterprises are not always the most profitable. Profitability is more influenced by managerial ability to capture genetic potential across variable seasons, than the enterprise itself.

The method used ensures consistency in how the enterprises are compared. Some of the major variables that might be changed in grazing system are stocking rate, feed rates for finishing, fertiliser rate, use of fodder crops.

Farms are set up in GrassGro by using soil types, actual daily weather data from 1960 to 2015, and suitable pasture species and livestock management programs for each location. The purpose of this work is not to compare locations but to examine how enterprises perform at a location over a long time period.

The sheep enterprises are described in Table 1 for key production parameters (these have been modified from previous work). Each enterprise is kept constant across locations and run so that the same grazing pressure is applied to the farm by each enterprise. This is achieved by varying stocking rate (ewes/ha) between the enterprises because the same amount of feed is grown at any given location, regardless of what enterprise is run.

GrassGro adjusts pasture and livestock production within and between years in response to the daily weather data. Yearly financial data (2015 prices are used for all years) is calculated – the results are the average of 54 years (1962 to 2015). The first two years are ignored to allow the program to settle down from the starting point of 1 January 1960.

Other enterprise comparisons for example gross margins, ignore the production and financial impact of droughts – this method reported includes these "disaster" years. The dollar impact of feeding is significant and varies between enterprises. Supplementary feeding within a year is based on ewe fat score targets and is set at the same level for all enterprises – how much is fed depends on how well the enterprise matches the pasture production cycle. The same sensible lambing date is used for each enterprise at a location however varies between locations.

This work includes drought years and the production and financial impacts associated.

Producers' response to last year's work fell into two camps:

- this bloke has no idea what he is talking about – meat enterprises are way better; OR
- this is fair dinkum and robust work.

Why?

The results reported are based on $/ha and include variable and overhead costs. If presented on a $/head basis then the pattern would change ($/head results ignore animal size and therefore the amount of feed they consume) in favour of meat enterprises with higher mature ewe weight. $/ha is more accurate as this is what pays the bills. As mentioned previously the impact of drought is included in this analysis and adjustments to stocking rate (ewes/ha) to achieve the same grazing pressure strongly influences the results. These are factors that are often ignored when only the short term view is considered.

Enterprise production parameters

The prime lamb (PL) and merino ewes joined to terminals rams (MT) buy in all replacements ewes ($150 for 1st cross ewes and $130 for merino). Target sale weight is 44kg (both females and males) in the MT enterprise and 44kg for females and 54 kg for males in PL if the season allows.

The two merino enterprises sell the wethers and surplus ewes at 15 mths. The wethers are sold as mutton and the ewes into the surplus ewe market ($125/head). For the 20um flock, an additional run was done where the wether portion are sold at 4 mths ($55/head).

Table 1: Production parameters used in GrassGro for the various enterprises

	Mature ewe wt (fleece free and empty) (kg)	Fibre diameter (um)	Fleece wt, greasy (kg)	Adult death rate (%/year)	Weaner death rate (%/year)	Reproductive rate (relative to 18um merino)
PL	76	29	4.5	4	1.5	+ 33%
MT	59	20.8	4.7	6	2	+ 9 %
18um merino	53	18	5.0	4	5	0
20um merino	59	20	5.6	4	5	+ 5%

The fleece weight is lower and fibre diameter up in the MT to reflect that replacement ewes purchased are culls. The higher death rate in MT reflects comments from producers over the last 5 years. In my opinion the $150/head for replacement 1st cross ewes is at the bottom end of the scale.

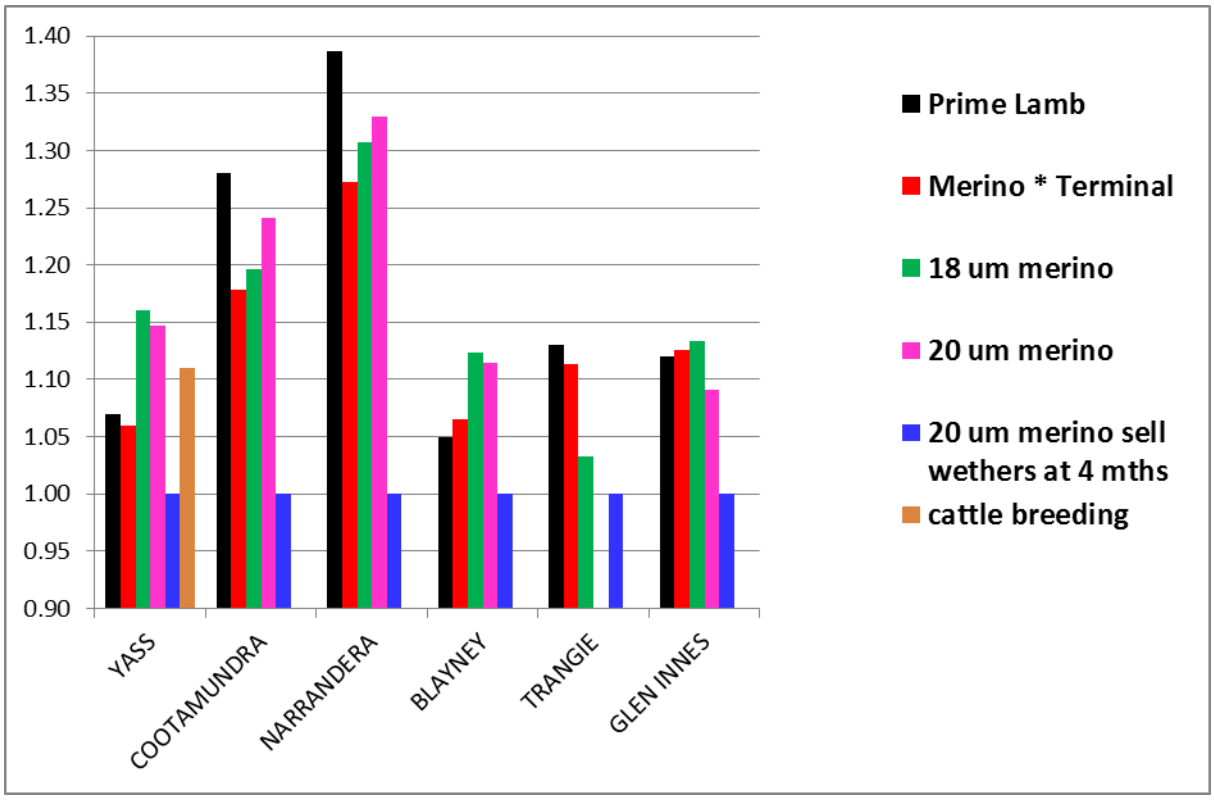
In terms of pastures, Cootamundra, Blayney and Glen Innes are based on improved pasture (i.e. introduced perennial pasture with sub clover) while Yass has a fertilised native pasture consisting of microleana, danthonia and sub clover. Narrandera is annual grass, clover and some lucerne and Trangie is annual and native grasses. The variation in the results reflects the pasture, soils and how the enterprise matches the location's climate.

6 Locations Reported. Locations should not be compared

Results

For each location the enterprise with the lowest profit/ha is set at 1.0 and all other enterprises are expressed as a percentage above. There is "noise" associated with any work and I would regard a difference of less than 5 to 7% as being the same. Small changes to the inputs will also cause this amount of variation. **Do not compare between locations**. The Narrandera profits/ha are the smallest so small changes become a large percentage. The highest profits/ha were from the Glen Innes site but there was virtually no difference between enterprises except for one. A cattle breeding operation was run at Yass to show the comparison using prices from 14 Jan 2016 (Steers = 320c, Heifers = 305, Cows = 215 all c/kg/lwt).

Figure 1: Relative profitability of various enterprises across multiple locations using GrassGro*



* *Profitability is expressed as a percentage and is the average of 52 years of data (1962-2015) using 2015 average commodity prices*

As mentioned before expressing the results on a $/head basis will change the ranking. Table 2 shows the results for Yass expressed both ways.

Each enterprise is compared against the 20 um sell wethers at 4 mths, expressed as a percentage (%). The return per hectare was divided by the number females at lambing or calving to give the $/head figure. In the merino flock the income from the 15mth animals is included in the ewe $/head figure. The cattle figure best illustrates the limitation of using $/head.

Table 2: Comparison of $ per hectare and per head - Yass

	PL	MT	18um merino	20um merino	20 um merino sell at 4 mths	Cattle breeding
$/head	19%	-6%	35%	52%	Base data	673%
$/hectare	7%	6%	16%	15%	Base data	8%

At all locations the meat enterprises had the highest income /ha but also the highest expense/ha. Table 3 expresses the expenses as a percentage of income.

Table 3: Comparison of expenses for various enterprises across locations (expenses are expressed as a percentage of income)

	PL	MT	18 um	20 um	20 um sell wethers at 4 mths
Yass	61%	64%	51%	50%	55%
Cootamundra	63%	66%	56%	53%	60%
Blayney	59%	61%	46%	45%	52%
Glen Innes	57%	60%	42%	41%	44%

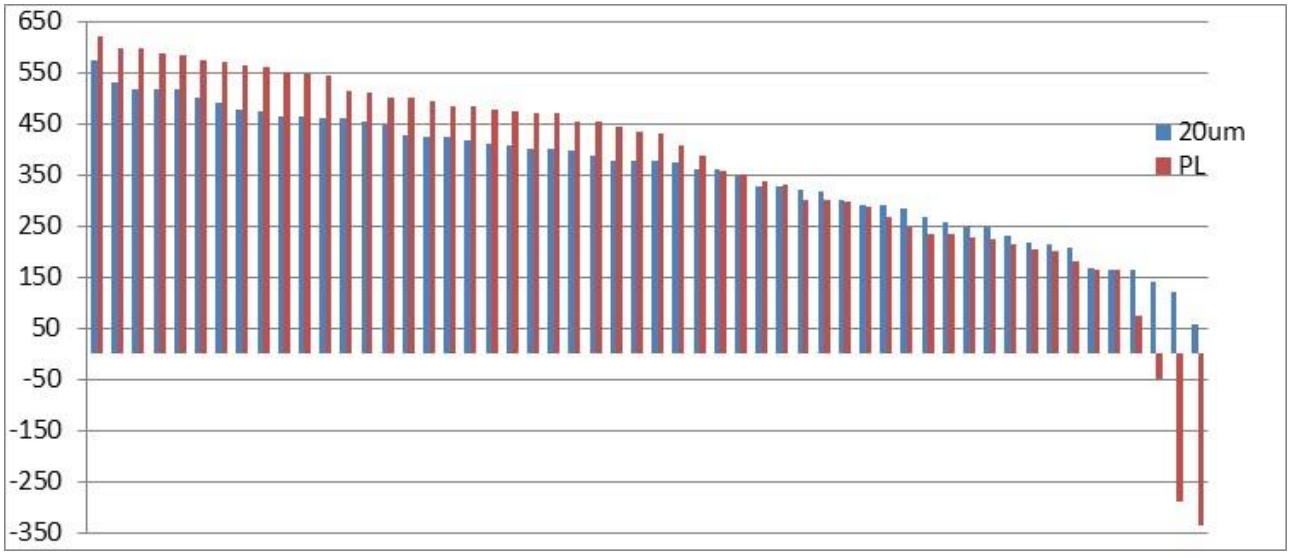
The overhead costs used for the 2 western sites are off a very small data set, so I don't have the same confidence as with the other sites. This has no impact on the site results as the same figure is used for all enterprises at a location but it does influence the percentage figures in Table 3 so I have not included them.

For both meat enterprises the cost of replacement ewes was the highest expense at around 25% to 30% of expenses and it tends to move with changing lamb prices. The lower expense percentages for the merino enterprises at Blayney and Glen Innes are because of lower feeding costs due to the longer growing season influenced by altitude.

Overall there is not much difference between the enterprises but the wool and meat enterprises achieve it by different ways;

- meat - high income high expense and more impacted by droughts;
- wool - lower income lower costs and less impacted by droughts.

Figure 2: Yearly profit/ha ranked from highest to lowest for the 54 yrs from Cootamundra for the PL and 20 um enterprises. The averages for the 2 enterprises were similar. Note the greater variation for PL enterprise.



Overall there is little difference between enterprises end result.
The key difference is in how they achieve the result.

- ***Meat** – high income, high expenses, greater impacts from droughts*
- ***Wool** – lower income, lower expenses, less impacts from droughts.*

The 3 drought years have a big impact on the long term profitability of the PL enterprise. The difference in cash flow between the 2 enterprises from the 3 droughts is $990/ha. It takes **13 good years** (or 25% of the time) for the PL to wipe out the difference from the 3 bad years. People could argue that a strategy to lower feeding costs will counter this effect. Destocking will lower feeding costs but it also lowers future income, so when looked at over a long period the effect shown in Figure 2 will still apply.

At all locations the 20 um flock selling the wethers at 4 mths has the lowest returns. The income from meat (wethers and CFA ewes) is the same for the two 20um flocks. The difference in returns is driven by the lower wool income with the early sale of the wethers. There is little difference in the expenses between enterprises. The number of ewes/ha is increased for the flock that sells the wethers at 4 mths to keep the same grazing pressure. It must be remembered that these wethers are from a good wool producing flock. If it was redone with a poor cutting wool flock then selling them early would not have as big a difference.

Over the last few years the gap between the fleece price and oddment's prices has narrowed (from 0.9 to 0.95), resulting in a higher overall wool price. This is a fact that has been ignored by producers. The focus has been purely on the fleece price.

There are locality impacts which favour enterprises but these vary between sites so that no one enterprise is dominant. **For the 4 main enterprises 2015 results have the same key message as from other years, it is not the enterprise that is critical but how you run the enterprise that is the major driver of profits**. The input data used is to reflect "industry average". Producers who are running at best practice would far exceed the figures presented.

The differences in reproductive performance from PL to 18 um merino are at the upper limits of industry data. The important principle for this work is that the relative difference in reproduction between the enterprises are maintained. Changing the absolute reproduction levels will move the actual returns up and down but will not change the relative performance.

The impact of changing some inputs variables

Replacement ewe costs have a big impact in the 2 meat operations. The Table 4a looks at changes to replacement costs but with a change in lamb price because the 2 move together. The values used reflect my best estimates.

Table 4a: The impact of changing replacement ewe costs and/or lamb price for the Blayney site. The lamb price has been changed to get the same returns/ha for different ewes costs/head

	PL - ewe cost $/hd	Lamb price c/kg carcass	Returns $/ha
PL Enterprise	160	550	473
	150 – base run	**550**	**486**
	125	525	486
	125	550	520 *(a very unlikely situation)*
MT Enterprise	**130 – base run**	**530**	**491**
	100	490	490
	100	530	544 *(a very unlikely situation)*

If replacement costs drop by $25/head and the lamb market drops by 25c/kg then there is little impact on the profit/ha. A $10/head increase in XB ewe price needs a 10 c/kg increase in the lamb market to offset the impact and give the same profit for the PL enterprise. Based on the premise that ewe price is directly linked to the lamb market.

If first cross replacement ewe cost decreased from $150 to $125/head then in reality it is likely that lamb price will have dropped more than 25c/kg to 525c/kg, it is more likely to be a 50 to 75c/kg drop. This shows that even though ewe price is linked to lamb price, there are other factors that also have an influence. This also suggests that as a general rule of thumb for the meat enterprises lamb price "trumps" ewe price with respect to profitability. Lamb enterprises are usually most profitable when lamb prices are high and when replacement costs are also higher than average. In other words, you are better off with a higher meat price and pay the extra for replacement ewes. This discussion is based on long term changes to the prices and costs.

As mutton prices have increased they have put a floor in the price for replacement ewes so the ewe cost might not drop to the level it needs to match a lamb price drop.

Producers need to manage their replacement costs independently of the lamb market. Not buying in high price years is a valid response but it does carry costs that do not appear on a producer's books as it has an impact on production (higher death rates and lower lambing % from older ewe).

Table 4b: Value of higher growth sires express as a percentage improvement of $/ha from the base run in the PL enterprises. The sires selected are +8 kg better for Post Weaning Weight ASBV.

	Yass	Cootamundra	Narrandera	Blayney	Trangie	Glen Innes
Base + 8 kg in PWWT ASBV	3%	6%	2%	4%	11%	7%

The improved returns/ha from the higher growth rams are driven by lowering the costs rather than increasing income. Lambs are turned off faster leading to lower finishing costs. The size of the benefit depends on the location and its pasture supply pattern. As the growth potential of lambs increases the sale weights must go up if you want to increase income. As an example at the Blayney site if the ewe sale weight was increased from 44 kg to 48 kg the advantage from the superior rams goes to 8.6% improvement in

income and a 12% improvement for Cootamundra and Yass. The wether portion was already being taken through to 54 kg if the season allowed.

Table 4c: Impact on returns from changing ewe death rates in MT, expressed as a percentage of the base run of 6%

Ewe death rate %	Yass	Cootamundra	Narrandera	Blayney	Trangie	Glen Innes
4%	+6.4%	+6.2%	+8%	+5.3%	+5.6%	+5.1%
8%	-6.2%	-6.5%		-6.5%		-5.7%

The higher death rates are seen in locations with better pasture production leading to issue with feet and overweight ewes. All sites are seeing an increasing dystocia problem hence the base figure of 6%. The impact of higher deaths rates is magnified as the cost of the replacement ewes increase. The impacts of changes in death rate are similar in the PL enterprise. A 2% change in death rate over the long term has a sizeable impact on profits.

Changing surplus Merino ewe sale values from $125/head to $95/head (a drop of the same magnitude as discussed in the meat enterprises) leads to a reduction of about 6.5% in returns for the both Merino enterprises. A reduction in surplus ewe prices would be indicating a decreased interest from sheep meat producers as a result of a falling lamb market so the relative performance between the enterprises might not change much. The absolute $/ha would be falling for all enterprises.

Table 4d: Impact of increasing greasy fleece weight from 4.5 kg to 5kg for first cross ewes on return $/ha expressed as a percentage of the base run

	Yass	Cootamundra	Narrandera	Blayney	Trangie	Glen Innes
5 kg fleece	5%	7%	8%	4%	3%	3%

The average lamb price would need to increase by approx. 15 c/kg to achieve the same improvement in returns that are presented in Table 4d. If these ewes with the higher fleece weight cost $17/head extra then the dollar advantage from the extra fleece is wiped out.

Table 4e: Comparing the 20um merino flocks with changes to the inputs. The base figure for the 4 mth wethers was $55/head

	Yass	Cootamundra	Narrandera	Blayney	Glen Innes
$/head the 4 mth wether would need to get to, to give the same $/ha return as selling at 15 mths	$65	$85	$86	$75	$72
Weaner death rate required in 15mth sale operation for returns $/ha to match the $55/head 4 mth selling	17%	+20%	+20%	15%	15%

The increase in the death rate in Table 4e is beyond reality as this is a long term death rate not a one off. As the death rate goes up from 5% the difference between the 2 systems gets closer. If these enterprises were run using the 2013 prices for wool and mutton then the strategy of selling the wether portion at 4 mths would have been more profitable than the selling at 15 mths. The 2015 prices have caused a change around of about 17% in returns. Some key variables have changed that should make us think about our production system.

As with all this work the difference between the sites is reflective of the different pasture and weather system that we have used. Look at the site nearest you for the size of the impact by changing variables.

Many statements are being made about the importance of reproduction. If a property has a low reproductive rate which does not maintain a satisfactory flock structure then there are dollar benefits from fixing the problem. From here on I'm talking about a flock with an adequate reproduction rate. It can be lifted by;

- Feeding more to increase conception or
- Management /genetic changes to the flock which are achieved without increasing feeding.

For Cootamundra I have looked at the impacts for these 2 methods on $/ha;

- PL - feeding to increase ewe fat score by 0.5, lifts lambing percentage by 5% but results in a 0.5% drop in returns. Extra feeding cost outweighs the extra lamb income. The same improvement in lambing percentage but from "management" leads to a 4.7% improvement in returns.
- MT - the similar result apply, minus 1.2% from feeding for 0.5 Fat Score to 8% improvement from "management"
- 20 um merino – minus 2.8% from feeding to 3.9% from "management".

These same patterns would apply at the other locations.

You need to be targeted with how you achieve improvements in Reproduction Rate. Reproduction goes from conception to after weaning. It is the improvements you make across all these areas that counts. Improving conception is just part of the story.

Key messages

- When enterprises profitability is compared on a valid basis there is no stand out sheep enterprise. The perception that wool is lagging behind is not correct. Lamb enterprises have higher income but this comes at higher costs.
- The increase in ewe bodyweight (all enterprises) might not be leading to increased profits. First cross ewes have increased from 60kg in 1990 to 75kg in 2010. This increase is still occurring. There are labour issues developing with heavier ewes and they will only increase. This is an issue that industry needs to address.
- Producers need to be careful that they are not "buying" improvements in reproduction. The feed costs to achieve higher reproductive rates may be higher than the benefits.
- Ewe death rates have a high impact on profit in MT and must be managed (selection of low birth weight rams). Older merino ewes are more likely to have metabolic problems especially when grazing crops. This is increased if conception rates have been high.
- The changes in merino flock returns/ha between 2013 and 2015 prices when you sell the wether portion as weaners or at 15 mths highlights the need to be flexible. Don't get locked into a production system and exploit the marketing opportunities as the seasons allow. The ability to manage weaner death rates should be considered in these decisions.
- XB ewe wool returns have increased making a significant contribution to income.
- High genetic growth sires improves profit.
- The lamb market is splitting into separate production system i.e. Domestic and export. Further analysis is needed in the lamb systems when lambs are carried to heavier weights.

Thanks to Ashley White Team Leader Sheep Meat, NSW Agriculture, Fiona Kelk Vet SELLS and Mat Lieschke Livestock Officer SELLS for their comments during development.

Background Material – Relative Sheep Enterprise Performance 2015

Lamb and Mutton percentile tables - Yellow marks the cell closest to the values used in the current work (2015).

NSW Trade Lamb Prices **Data included from Jan 2011 to 17 Dec 2015**	
Highest Price	633.0
10%	583.0
20%	565.0
30%	535.0
40%	515.0
50% (median price)	496.0
60%	480.0
70%	446.0
80%	424.0
90%	404.0
Lowest prices	331.0

Based on weekly average prices, average of sale yard and over the hook sales

NSW Mutton Prices (5 years) **Data included from Jan 2011 to 17 Dec 2015**	
Highest Price	424.0
10%	402.0
20%	369.0
30%	348.0
40%	330.0
50% (median price)	304.0
60%	281.0
70%	266.0
80%	213.0
90%	162.0
Lowest prices	118.0

Based on weekly average prices, sale yard and over the hook sales

Wool Percentile table

Data included from 15 Jan 2011 to 17 Dec 2015									
	Micron Category								
	16.5	**17**	**18**	**19**	**20**	**21**	**22**	**26**	**28**
Highest Indicator Price on record	2680	2525	2189	1769	1588	1522	1461	1165	971
10%	1992	2258	1967	1595	1393	1350	1326	**1046**	**865**
20%	1648	1681	1543	1460	1354	1321	1288	929	770
30%	1540	1514	1475	1404	1328	1297	**1256**	871	689
40%	1517	**1469**	**1409**	**1338**	**1266**	**1250**	1229	837	676
50% (median price)	**1473**	1419	1349	1292	1230	1218	1200	821	665
60%	1435	1368	1303	1246	1190	1177	1164	808	652
70%	1393	1335	1274	1205	1164	1156	1140	790	640
80%	1355	1298	1237	1183	1142	1136	1123	771	623
90%	1307	1270	1196	1147	1118	1109	1087	755	592
100% of the time prices were above	1276	1218	1148	1084	1047	1036	1015	674	523

How has the relative performance changed over time?

Our production systems face two major challenges markets and climate. Up to this stage the paper has only looked at the impacts of current markets. Tables 5 and 6 show how the enterprises have performed for two time periods of 20 years. The first period is 1962 to 1981, then 1996 to 2015. I wanted to show the pressure our enterprises are experiencing from changes in our climate. The same cost structure and production data has been used. Differences in the climate drive differences in pasture and animal production and hence the dollar returns. Rainfall and temperature data for the period 1960 to 2015 for all locations are contained in the appendix.

Table 5: Profit/ha for the period 1962 to 1981 expressed as a percentage change from the long term average

	PL	MT	18 um	20 um	20um sell wether young
Yass	3	4	1	1	0
Cootamundra	8	7	8	5	9
Blayney	12	8	4	5	-1
Glen Innes	-1	-4	-4	-3	-3
Narrandera	18	15	19	18	21
Trangie	3	1	-3		-3

Table 6: Profit/ha for the period 1996 to 2015 expressed as a percentage change from the long term average

	PL	MT	18 um	20 um	20um sell wether young
Yass	-2	-1	-1	0	1
Cootamundra	-11	-9	-8	-4	-8
Blayney	-6	-2	4	-2	3
Glen Innes	-1	2	-4	1	1
Narrandera	-18	-14	-21	-16	-23
Trangie	6	3	-3		8

The southern locations have the biggest difference between the 2 time period, positive for the early period and negative for the later period. As you move west and drier the impact has become more substantial, look at the changes for Narrandera, a turnaround of 35% in the wrong direction and note the changes for the safe Cootamundra. Glen Innes and Trangie have been stable locations during this time period. This is line with the expectation that the southern part of NSW will be under more pressure than the northern grazing areas.

No enterprise has had a major change in how it performs in relative terms between the time periods. There are some subtle changes be not significant enough to make comment about.

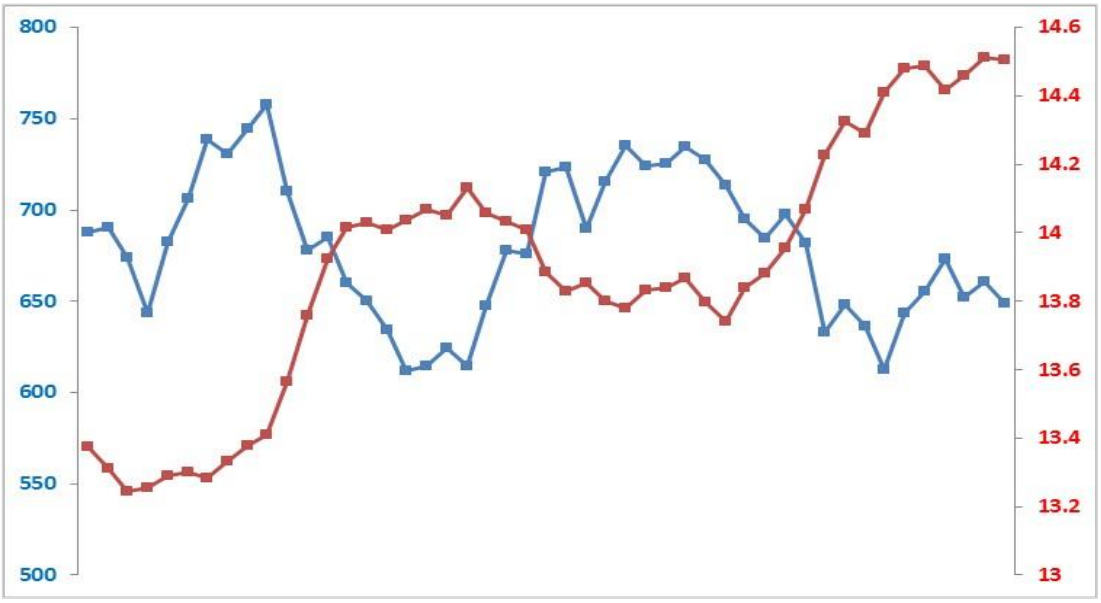
Appendix: Rainfall and Mean temperature from 1960 to 2015

The yearly average rainfall and mean temperature is used and displayed on a rolling 10 year average. Each dot is the average of 10 years, e.g. the first dot on the left is the averages of 1960 to 1969, you then drop off the first year and add another, so the next dot is the average of 1961 to 1970. This continues for all years. The last dot on the right is the average of 2006 to 2015. It is important to look at changes in temperature and rainfall at the same time, as wet periods will result in cooler conditions and the opposite with dry times. Compare the temperatures against similar rainfall periods to see if there are changes; eg for Yass the "dry" period around 1980s had temperature of around 14.1 but for the same rainfall in the 2000's the temperature was around 14.5.

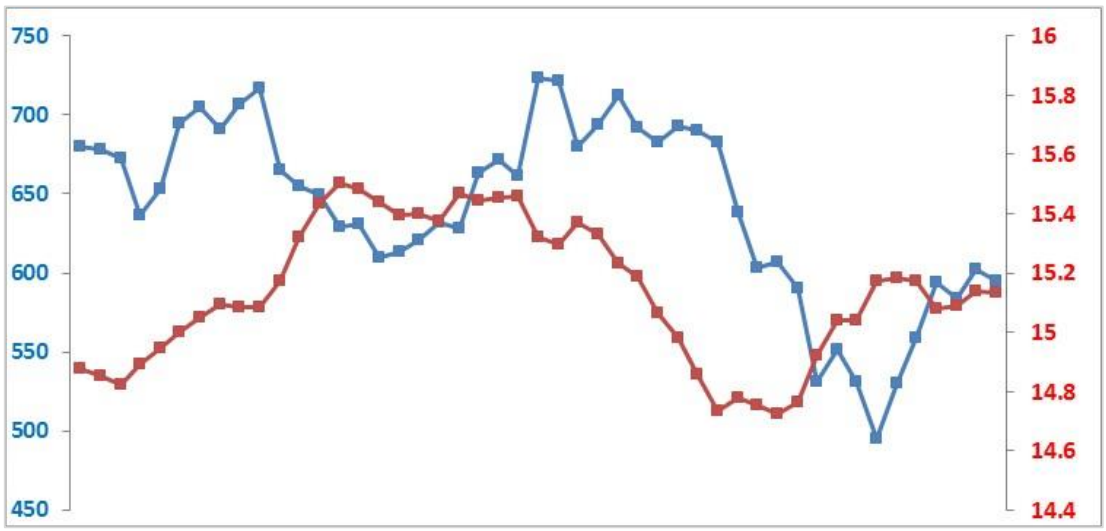
The 10th dot in (from the left hand side) is the decade starting in 1970, 20th dot the decade starting 1980, 30th dot 1990 etc.

Yass

Rainfall is in blue and on the left axis (mm) and mean temperature is in red and on the right axis (C).

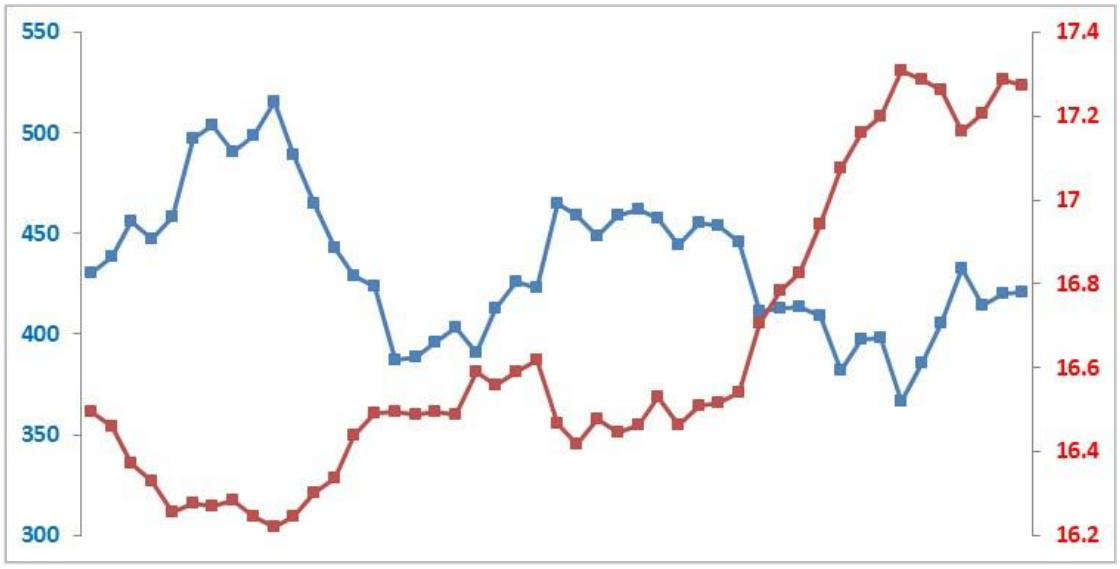


Cootamundra

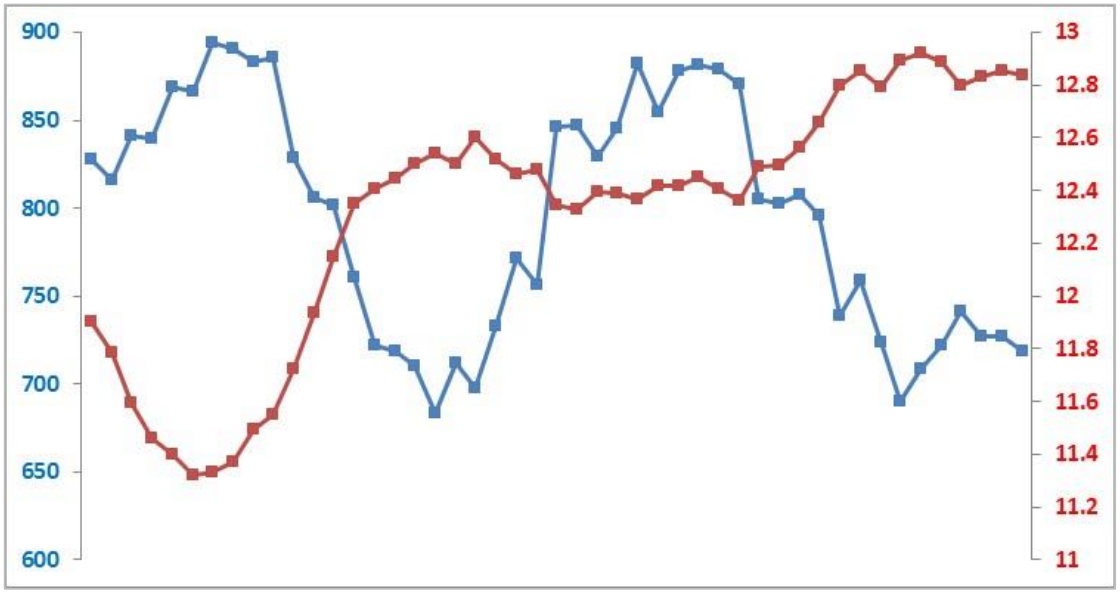


The temperature pattern for Cootamundra is unusual (the amount of cooling in the late 1980's) but similar to Harden. Wagga shows a similar pattern but not as strong. There is no reason to explain this pattern but seeing it occurs at a number of sites we can assume it is not a recording problem at a site.

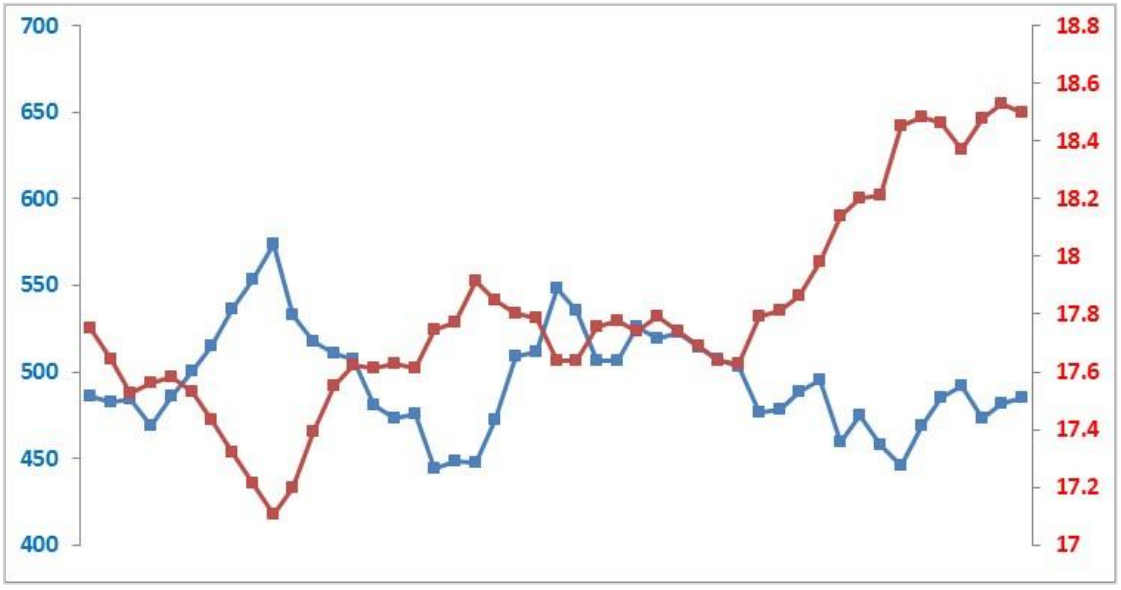
Narrandera



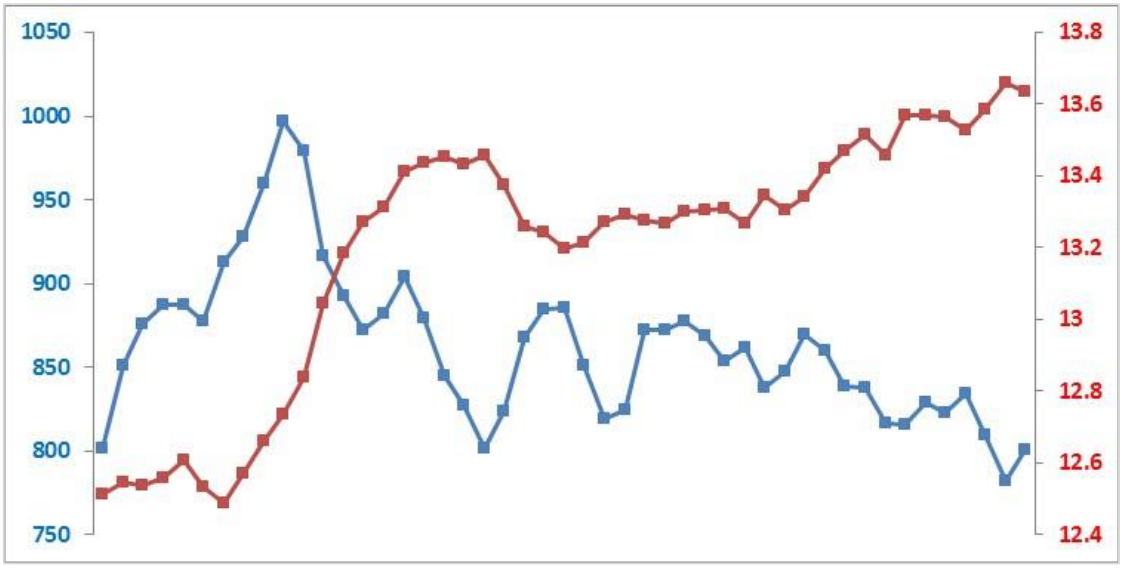
Blayney



Trangie



Glen Innes



Annual MerinoLink Conference
Wednesday 2nd March 2016

AWEX e-Bale Project

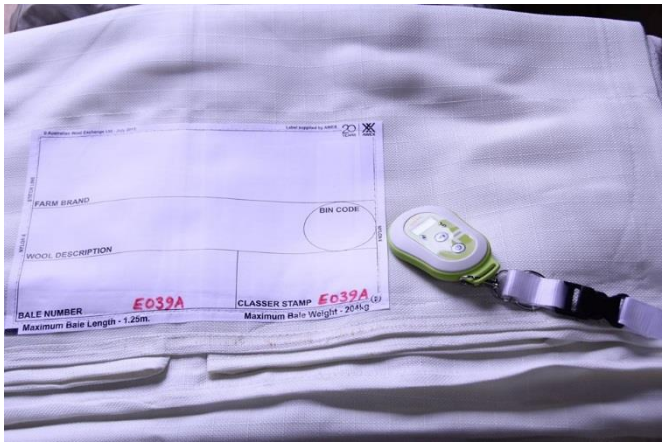
Adele Offley, Moses & Son

The wool industry has been investigating the electronic identification (Radio Frequency Identification, RFID) of wool bales since the 1980s. In early 2013, AWEX commissioned a review of available RFID technology, and concluded that it was timely to recommence its work to identify technologies and implement processes that could ultimately result in the RFID of wool bales.

The project, called **e-Bale**, commissioned a cost-benefit analysis of the RFID of wool bales. Using a price point of A$1, this analysis highlighted significant benefits to the industry, particularly wool storage and handling companies. It is recognised that in these situations it is usually the grower who pays; however, it was also noted that savings could accrue to the industry through increased efficiencies.

Martin Moses, Managing Director of Moses & Son has been trialling the e-bale technology over the last few months and Moses & Son have committed to progress the trial into the future, with extremely positive comments from all involved. Whether it is the grower, classer, broker, wool dump or early stage processor, everyone can see this as a positive step for the future of improving efficiencies within the wool industry.

"For Moses & Son's wool broking division, the e-Bale project is a natural progression to a more efficient warehousing system. I can see RFID technology and the development of automated handling systems integral in driving the relative cost of wool warehousing down in time, and that is comforting news for our sector. Even better news is that the processors are already expressing interest in the technology. On the question of full implementation, the answer is more likely to be 'when' than 'if'!" Martin Moses, Moses & Son



The RFID is stitched into the label with a unique number. The small scanner is used to identify the chip and send the data to the software program.

The unique number is transferred to the laptop and the next available bale number is allocated. The classer/presser then selects the wool description which is all recorded in the software program.

After capturing the raw data in the shearing shed, bales can be tracked on receipt at the wool broker store. Each process within the warehouse can utilise the bale RFID to streamline processes and enhance quality control. Moses & Son have opted for a low power RFID reader mounted on their sampling machine and another high powered unit to collect the receipt, storage and dispatch data. With 200 bales already received into their Wagga Wagga and Temora stores they are looking forward to further developing the software and systems to take it to the next level.

Source: *AWEX* http://www.awex.com.au *Moses & Son* www.mosesandson.com.au

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