MEAT & LIVESTOCK AUSTRALIA

meatup FORUM

For the latest in red meat R&D

WUDINNA

8 March 2023

Hear about locally relevant on-farm R&D

•

Hear from and network with leading producers

•

Gain insights into tools and programs to improve your business

•

Increase your productivity and profitability

MEAT & LIVESTOCK AUSTRALIA

About MLA

Meat & Livestock Australia Limited (MLA) delivers research, development and marketing services to Australia's cattle, sheep and goat producers. MLA has approximately 50,000 livestock producer members who have stakeholder entitlements in the company.

MeatUp Forum Program: Wudinna, 8 March 2023

Time	Session
8:00 am	Registration desk opens, tea and coffee available
Session 1: Welcome	
9:00 am	**Welcome, housekeeping and forum schedule** Natasha Searle, MeatUp Forum Project Manager, Pinion Advisory
9:10 am	**MLA welcome, market update and adoption program insights** Sarah Strachan, Group Manager Adoption and Commercialisation, MLA
Session 2: Setting the scene: integrating cropping and livestock	
9:35 am	**Getting the most from your mixed farming system – decision making and capitalising on opportunities** John Francis, Agrista
10:30 am	Morning tea
11:00 am	**Integration of cropping and livestock in a highly variable Eyre Peninsula environment** James Hillcoat, Pinion Advisory and Craig Kelsh, Venus Plains
Session 3: Carbon update	
11:40 am	**Towards carbon neutrality – practical steps for Eyre Peninsula producers** Cam Nicholson, Nicon Rural Services
Session 4: Feedbase updates	
12:20 pm	**Simple and effective legume pasture systems – getting the most out of it** Alison Frischke, Birchip Cropping Group
12:55 pm	**Paraboss update** Introduced by Andrew Morelli, Southern Beef and Sheep Adoption Project Manager, MLA
1:05 pm	Lunch
1:50 pm	**Managing and monitoring your feed with the Australian Feedbase Monitor** Alastair Rayner, Cibo Labs
Session 5: Sheep updates	
2:15 pm	**Optimising reproduction with ewe lamb joining** James Lines, neXtgen Agri
2:45 pm	**Getting started with and smart implementation of eID** Chris Lymn, Lymn Farms
3:15 pm	Afternoon tea
Session 6: MLA adoption program update	
3:35 pm	**BredWell FedWell – breeding and feeding to maximise profit** Sarita Guy, Project Manager for Genetics Adoption, MLA
Session 7: Virtual Farm Tour	
4:00 pm	**Virtual farm tour – Goldmine Hill Farms, Lock, SA** Plus, Q&A with Kerran (Gus) Glover
Session 8: Wrap-up	
4:30 pm	**Taking the next steps with a producer panel Q&A – wrapping up the key messages and practical implementation** Chaired by John Francis with Craig Kelsh, Chris Lymn and Kerran Glover
4:50 pm	**Wrap-up** Natasha Searle, MeatUp Forum Project Manager, Pinion Advisory
5:00 pm	**Networking, gourmet BBQ, and drinks** Including MSA for lamb insights with Sarah Strachan, MLA. Plus prizes of premium cut meat packs!
6:00 pm	Event concludes

Poll Everywhere

For audience participation, including submission of questions during MeatUp Forums, we will use Poll Everywhere.

Join via the QR code below. You may choose to download the app ‘Poll Everywhere’ when prompted.

PollEv.com/pinion

1. To join a presentation, type the username: **pinion** (or via a web browser, type PollEv.com/pinion)
2. Click join
3. Insert your screen name that you would like to appear alongside your question/response
4. Throughout the event, you can return to your app, the site PollEv.com/pinion or the QR code to participate.

Contents

Sessions

Welcome

MLA's MeatUp Forums are held throughout southern Australia to give you the latest in red meat R&D. They are developed by regional producer working groups that include members from the Southern Australia and Western Australia Livestock Research Councils, in collaboration with the MeatUp Coordinator, Pinion Advisory and MLA staff.

MLA's MeatUp Forums have been developed to keep you informed about:

- what MLA can offer your red meat business
- new and completed R&D that is relevant to your region and enterprise
- the role and responsibilities of the livestock research councils
- opportunities to get involved in regional R&D and priority-setting
- practical tools and programs available to you
- opportunities to enhance your productivity and profitability.

Today you will be presented with clear and practical ideas, information, and tools that you can take home and put into practice on-farm. We thank all presenters for their involvement in MeatUp and encourage you to make the most of your time with them today.

Regional producer working group

We thank the MeatUp Forum regional producer working group members, past and present from SA for their contribution to MeatUp. The current working group includes:

- Allan Piggott, Tailem Bend
- Lynton Arney, Finniss
- Joanne Harvie, Balaklava
- Jodie Reseigh-O'Brien, Wudinna
- Kerran Glover, Lock
- Chris Lymn, Wudinna
- Caleb Prime, Wharminda

In addition, we would like to thank:

- Andrew Morelli, Southern Beef and Sheep Adoption Project Manager, MLA
- Natasha Searle, MeatUp Forum Project Manager, and project team, Dee Heinjus and Lauren Rowlands, Pinion Advisory

If you are interested in joining our regional producer working group to contribute to the development of MeatUp Forums in SA, please chat to a working group member or a member of the MeatUp Forum team.

Contact

Natasha Searle, MeatUp Forum Project Manager, Pinion Advisory
P:1300 646 746 E:meatup@pinionadvisory.com Visit: mla.com.au/meatup

meatup FORUM

MEAT & LIVESTOCK AUSTRALIA

MeatUp forums were launched in 2021 and provide beef, sheep and goat producers with the opportunity to learn something new, stay up-to-date with the latest on-farm research and technologies and meet others in the red meat industry.

Held predominantly throughout southern Australia, these forums introduce producers to the outcomes of MLA R&D projects and the next steps to drive profitability and productivity on-farm.

Designed by producer working groups from local regions to ensure content delivered is regionally relevant, MeatUp forums demonstrate the value of implementing new practices or technologies on farm. They also create awareness around MLA activities, programs and projects which producers can get involved in to enable them to further build knowledge and skills.

Naracoorte MeatUp

2021–2022 at a glance

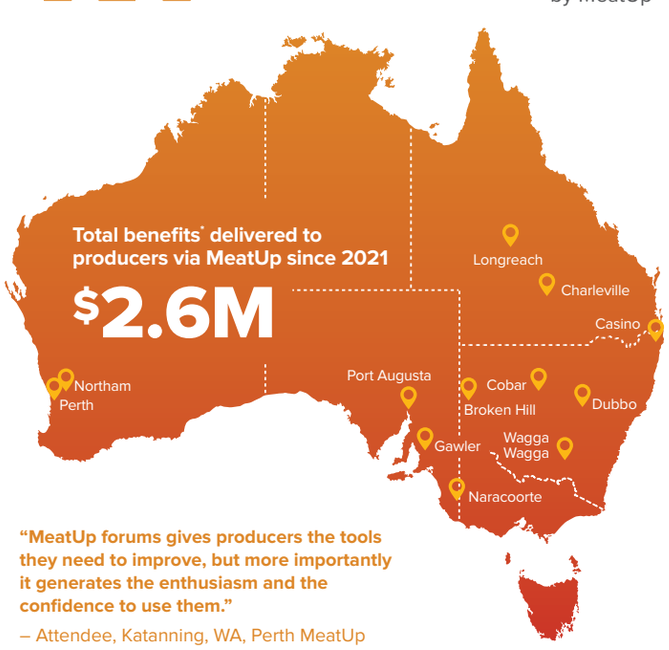
611
producers engaged

12
EVENTS

358,398
cattle impacted by MeatUp

1,578,475
sheep impacted by MeatUp

63,920
goats impacted by MeatUp



9,830,749
hectares of Australian agricultural land influenced by MeatUp

87%
value rating

81%
of producers said their knowledge and skills increased

87%
satisfaction rating

2 OUT OF 3 ATTENDEES PLANNED TO MAKE CHANGES FOLLOWING MEATUP

"MeatUp forums gives producers the tools they need to improve, but more importantly it generates the enthusiasm and the confidence to use them."

– Attendee, Katanning, WA, Perth MeatUp

To find out more about Meatup:
getinvolved@mla.com.au | mla.com.au/meatup

Pinion Advisory:
1300 746 466 | meatup@pinionadvisory.com

MLA welcome and update

Sarah Strachan

MLA Group Manager – Adoption & Commercialisation

About Sarah

Sarah oversees the delivery and development of the Meat Standards Australia, livestock genetics producer adoption, and on-farm sustainability programs within MLA. These programs are driven by the ambitions of the *Red Meat 2030* plan to grow the investment in adoption to help double the value of sales from high quality Australian red meat.

The programs achieve this through converting research into commercial services for businesses along the entire supply chain, as well as supporting the goal of the red meat industry becoming carbon neutral by 2030. This includes providing a diverse range of options for producers to engage with and apply research outcomes into their production systems such as the well-known BredWell FedWell workshops, Producer Demonstration Sites and Profitable Grazing Systems programs.

Sarah has a Bachelor of Rural Science from the University of New England and has worked with MLA for over 20 years, spending 18 of these working in the MSA program.

Session summary

MLA's purpose is to foster the long-term prosperity of the Australian red meat and livestock industry by investing in research and marketing activities. MLA's *Strategic Plan 2025* sets out the priorities, strategic focus areas and guiding principles to help:

- Double the value of the Australian red meat sales.
- Australian red meat become the trusted source of highest quality protein.

MLA's investment in producer adoption aims to increase the uptake of on-farm research and development (R&D) by producers. MLA's adoption pathway makes a journey through three key areas: awareness activities, short-term training programs, and long-term practice change activities. Supporting the journey along the pathway is an area of focus dedicated to building the capacity of livestock advisors.

Producer awareness of the latest research and development (R&D) is delivered via field days, forums, webinars, newsletters and articles. Short-term training programs are designed to increase producer knowledge and skills around the latest livestock production practices by engaging them in training activities like workshops or online learning modules. Long-term practice change-focused activities involve producers learning from each other under the guidance of a consultant or advisory coach. These activities involve producers implementing the best performing livestock production practices into their businesses. Further adoption activities are designed specifically for livestock advisors to increase their knowledge of the latest R&D, professional development and networking.

The 2021–22 producer adoption program saw MLA deliver $54.3 million in annual net benefits to the 10,000 producers involved in MLA adoption activities, including MeatUp Forums.

Sarah's presentation will cover the latest opportunities resulting from research, development and adoption (RD&A) programs funded by MLA which red meat producers can get involved in to help boost productivity on-farm. Sarah will also share insights into current regionally-relevant research, as well as provide a market update including forecasts on the future market.

Relevant tools and resources

- **MLA membership application**

  MLA membership is free to levy-paying producers of grass or grain fed cattle, sheep, lambs and/or goats.

  Benefits of membership include:

  - participation and voting rights at the MLA Annual General Meeting (AGM)
  - discounts for a range of MLA products and services, ordered via the myMLA catalogue
  - free access to the Australian Feedbase Monitor tool to help producers improve grazing management
  - invitations to local MLA events
  - free subscriptions to MLA's regular member magazine *Feedback*
  - free subscriptions to MLA suite of e-newsletters
  - free access to up-to-date publications and information tools
  - eligibility to apply for funding via MLA's CoMarketing Program.

- **MLA market trends and analysis**

  MLA's market information analysts examine and interpret developments in, and prospects for, the Australian domestic market, key export markets and major competitors, producing a wide range of publications.

- **MLA *2021–22 Producer Adoption Outcomes Report***

  The *2021–22 Producer Adoption Outcomes Report* outlines the depth and breadth of adoption projects and programs that MLA delivered for the 2021–22 financial year and how red meat producers benefited from their involvement in them.

- **Subscribe to MLA e-newsletters**

  MLA e-newsletters to be delivered direct to your inbox at mla.com.au/news-and-events/enewsletters/

- **Producer Demonstration Sites**

  Producer Demonstration Sites (PDS) are on-farm projects run by producer groups who want to validate the benefits of incorporating research findings into their businesses. MLA calls for preliminary applications for PDS projects that will help to improve the profitability, productivity and sustainability of beef and sheep meat enterprises on an annual basis.

- **Profitable Grazing Systems program**

  Profitable Grazing Systems is a group-based delivery program designed to deliver training and coaching over several months and up to a year to improve producer skills and knowledge. The aim is to achieve practice change on-farm in the areas of people, business, reproduction and genetics, value chain and feedbase.

- **BredWell FedWell**

  BredWell FedWell is a practical, one-day workshop highlighting the key production benefits of superior genetics, plus feed management for improved reproductive performance and livestock productivity. New workshops are coming soon, follow the QR code to express interest.

- **EDGE Network**

  EDGE Network workshops offer practical knowledge and skills on topics such as breeding and genetics, business management, nutrition, grazing and land management. Workshops range from one to three days. In southern Australia, this includes Business EDGE which is offered in SA.

Notes

Setting the scene

Getting the most from your mixed farming system – decision making and capitalising on opportunities

John Francis

Director and consultant, Agrista

E: john@agrista.com.au

M: 0427 259 005

About John

John Francis is a farm business management consultant with over 15 years' experience in agricultural consultancy and a further 15 years' experience in production agriculture (agronomy). John holds a Bachelor of Applied Science (Agriculture) and a Certificate IV in Workplace Training and Assessment. John is the owner of Agrista, an agricultural consultancy business based in Wagga Wagga in southern NSW. Agrista provides farm business management advice to farm asset owners and managers, the finance sector, government, industry and the agricultural services sector. John's expertise generates value for clients by identifying opportunities to improve productivity and profitability.

Session summary

This paper and the associated presentation aim to challenge you to think critically about your business, your process for decision making, and the simplicity of your livestock production system.

Before you can buy in to what is on offer in this paper, I need your permission to allow me to present you with information that may challenge your existing thinking about your system. The psychology suggests that if I get your permission to challenge you, I will have a greater chance of you accepting my view and therefore a greater chance of me influencing change.

I also need you to think critically about why you have chosen the livestock system that you currently manage. You can do this by writing three reasons for why you have chosen your time of lambing and time of sales of trading livestock. This exercise works best if you have no outside assistance with your responses as it is probable that outside assistance will result in bias.

If you don't know why you do what you do – that's okay, but now is probably a good time to start thinking critically about it as it is an important part of the business strategy.

Reasons for my current livestock system are:

1._____

2._____

3._____

Now that you have listed your reasons for implementing the livestock system that you manage – think about what evidence you would require to implement a change to your existing livestock system? Peter Boghassian, Assistant Professor of philosophy at Portland State University, encourages an approach to seek information that could undermine confidence in a particular belief.

Daniel Kahneman, in his book, 'Thinking, Fast and Slow', divides the mind into two systems. System one is the quick-fire part of the brain that uses certain rules to allow us to respond quickly, intuitively and efficiently. System two is slower, more analytical and better at reasoning. Kahneman suggests that the initial attempt to believe something is an automatic operation of system one. The problem is that system one is gullible and biased to believe, while system two oversees doubting. The beauty of Boghassian's approach is that the challenge requires thought. This progresses thinking from system one to system two where doubting is more likely. Each question is an opportunity to revise beliefs and to seek evidence that disconfirms.

A livestock system is made up of a number of component inputs that influence productivity, cost efficiency, profitability and environmental sustainability.

The component inputs which typically have the most influence on a livestock system are:

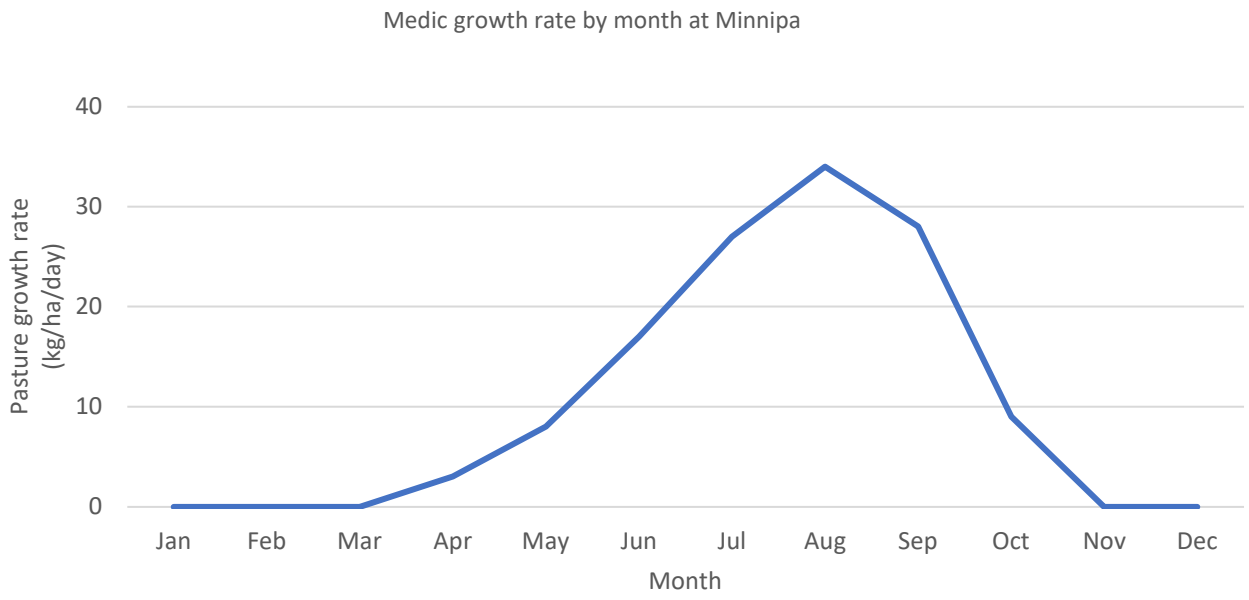
- time of lambing
- time of turn-off of trading livestock.

These features influence cost of production by optimising production which dilutes the cost structure per productive livestock unit.

If the aim of the design of the livestock production system is to deliver a resource efficient outcome, then the design should consider the resources it depends on. A livestock system typically depends on the feedbase, human resources, capital and environmental resources. Of these, the feedbase and the matching of feed supply with feed demand is possibly the most critical element in driving production efficiency.

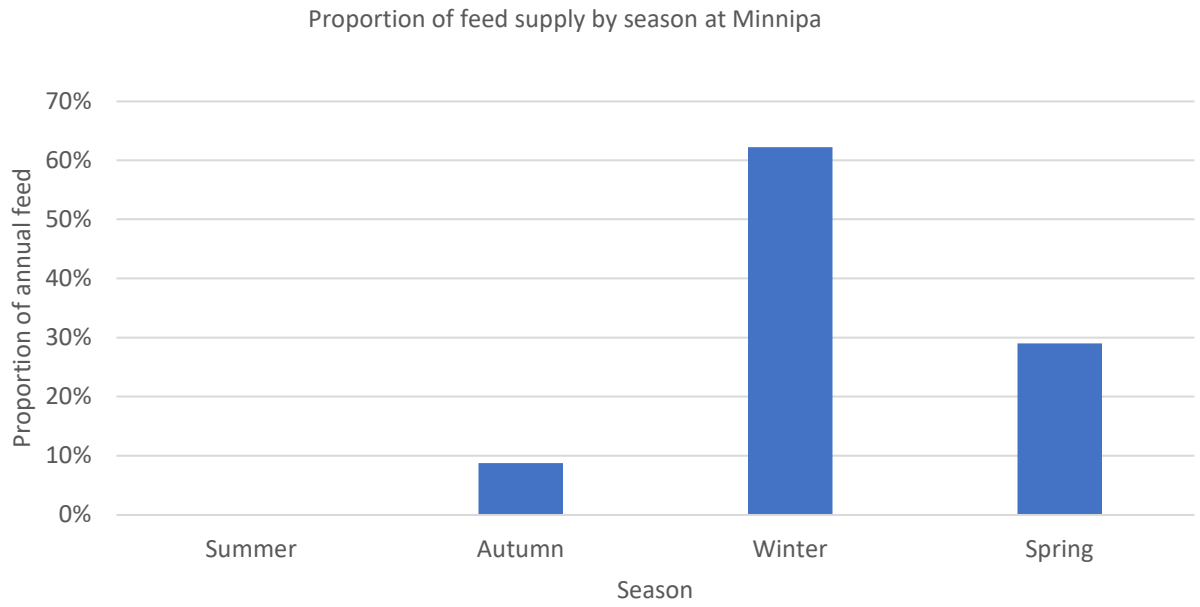
The medic pasture growth curve for Minnipa, Upper Eyre Peninsula, SA is shown in Figure 1. A pasture growth curve shows the average or expected timing of feed supply over the year by providing average daily pasture growth rate for each month of the year. Where crops make up 60 to 80 percent of the total farming area in mixed farming systems stubbles will add significant value in supporting stocking rates over the summer period when there is typically no pasture growth. Autumn, winter and spring provide around 10, 60 and 30 percent of total annual feed supply respectively, as shown in Figure 2. An issue which is not shown in this graph but is common to many southern Australian pasture systems is autumn feed supply can be significantly more variable than spring feed supply.

Figure 1: Winter provides >60% of total annual feed



Source: MLA Feed demand calculator

Figure 2: The volatility of feed supply is extreme



MLA situation analyses have shown that livestock systems which achieve high levels of feed utilisation deliver greater levels of per hectare production which drive higher levels of profitability. These systems produce more wool and meat per hectare, thereby driving higher income and delivering cost efficiencies. Consuming a large proportion of the feed that occurs during the peak growing season is critical to achieving high levels of feed utilisation and this is completely dependent on the design of the livestock system.

Feed budgeting is a critical tool for those looking to optimise feed utilisation. Some managers do this intuitively, but they measure other aspects of their business which assist them to understand the limits. Feed budgeting is analogous to financial budgeting; it takes into account the opening balance (pasture and stubble in the paddock), inflows (pasture growth), outflows (pasture consumption and waste) to deliver a closing balance. While the feed budget delivers some value in the drought years, it is the non-drought years where it delivers the most value. It does this by ensuring the surplus is consumed and converted to red meat or fibre.

Options for maintaining high levels of feed utilisation in the good years include:

- trading livestock
- retaining stock for longer and turning-off at higher weights
- conserving fodder which increases utilisation by managing the same numbers on a smaller grazing area.

While matching feed demand to feed supply goes a long way to delivering profitability, there are other highly effective measures within the control of the manager that drive cost efficiency delivering higher livestock profits. These measures are often overlooked because their impact on the bottom line is not easily discernible.

One of these measures is simplicity. Simplicity drives labour efficiency and cost efficiency, both of which are critical components of solid business performance. Examples of simplicity include:

- managing a single rather than multiple enterprises
- shearing once per year rather than multiple shearings
- joining once per year rather than multiple joining dates
- conducting multiple operational tasks while livestock are being handled
- not handling livestock unnecessarily
- investing in robust infrastructure to avoid tail-chasing repairs and maintenance.

Simplicity can also extend to productivity components of an enterprise such as reproductive efficiency. For example, the cost of additional weaning rates, if the business is already achieving optimum feed utilisation, is the additional supplementary feed required to get those livestock to marketable weights plus the labour to deliver the feed. Additional labour may also be required to achieve acceptable twin and triplet survival rates post-lambing because twinning and triplet numbers increase with increased reproductive rates. It is plausible the alternative strategy of managing higher ewe numbers per hectare with lower weaning percentages may deliver a superior financial result after accounting for the cost inefficiency of the alternative approach, particularly in low rainfall environments.

It is naive to expect the evidence presented in this paper will deliver a change in behaviour because psychology and cognitive bias plays a significant role in behaviour change. Cognitive biases are adaptive judgement mechanisms that result in faster decisions (System 1 thinking), but they can sometimes lead to inaccurate and irrational judgements. Being aware of these biases is a great start in a journey of self-discovery. The ambiguity effect and loss aversion are just two of many biases which could potentially affect decisions around livestock systems implementation.

The ambiguity effect is the avoidance of options that appear to be ambiguous or that are missing information. The dislike of uncertainty means a certain option with a known outcome is chosen over an option with an uncertain outcome. It is possible producers prefer a system with low feed utilisation but with a known return when compared with a system with higher feed utilisation but ambiguity around the management factors that drive success.

Loss aversion – the pleasure from gain is considered half as powerful as the pain experienced from loss. This bias explains the number one issue differentiating the most profitable cohort of livestock managers from the remainder. The biggest cost to most livestock producers in southern Australia is the opportunity cost of feed wasted in the majority of years. Many livestock managers in southern Australia have low levels of feed utilisation. Their reasoning is that it 'keeps something up their sleeve' in the event of a winter and spring drought. The issue with this strategy is that these events, while carrying large financial consequences when they happen, are infrequent in occurrence. In fact, seasonal events which have the potential to deliver a greater magnitude of consequence, but in a positive trajectory (i.e. far higher profits), occur with equivalent frequency but no effort is put in to capturing the additional value. Rather the feed is wasted and no cost is assigned to the opportunity lost.

It is possible to improve decisions involving livestock systems by increasing awareness of these biases and increasing knowledge about processes to assist in delivering success and understanding factors that can influence decision outcomes.

Key take home messages

- Set your livestock system to consume as much of the peak feed supply as possible.
- Simplicity is the unsung hero of profitable systems. It delivers value by improving cost efficiency.
- Loss aversion is a bias that comes at the cost of the gains in the good years. Profitable livestock managers put the same amount of energy into optimising feed utilisation in the good years as they do in mitigating the loss in the poor years.

Relevant tools and resources

- **MLA feed demand calculator**

  Understand the pattern of feed supply and demand over a 12 month period. This calculator was developed for MLA by CSIRO, with DJM Livestock Consultants P/L and PSA Services, and is based on the more detailed decision support tools, GrazFeed and GrassGro.

  Link direct to calculator: https://etools.mla.com.au/tools/fdc/v130/#/

- **Thinking, fast and slow**

  In *Thinking, Fast and Slow*, Kahneman takes us on a groundbreaking tour of the mind and explains the two systems that drive the way we think and make choices. One system is fast, intuitive, and emotional; the other is slower, more deliberative, and more logical.

- **Feedbase planning and budgeting tool.**

  This tool is designed to help you to plan your rotational grazing systems, determine appropriate stocking rates, calculate your pasture growth rates, determine how long your paddocks will last and calculate the most economical ration for your stock. You can now also keep track of the carrying capacity (stocking rate) of each paddock by recording your dry sheep equivalent grazing days/ha. Maintenance fertiliser requirements can then be calculated.

Notes

Integration of cropping and livestock in a highly variable Eyre Peninsula environment

James Hillcoat

Farm Business Management Consultant, Pinion Advisory

E: jhillcoat@pinionadvisory.com

M: 0438 801 966

Twitter handle: @jameshillcoat

About James

James is the Manager of Farm Business Management Services at Pinion Advisory. Starting as a Marcus Oldham industry placement student with Rural Directions, James graduated with a Bachelor of Business in Agriculture. With over 10 years consulting experience nationally, James specialises in providing practical farm business management advice to growers of mixed enterprise businesses. With strong skills in benchmarking and business, James uses these to develop and guide businesses in strategy, profitability goals and practical decision making.

Craig Kelsh

Managing Director, Venus Plains

E: kelsh04@bigpond.com

M: 0427 683 539

About Craig

Craig Kelsh is the Managing Director of Venus Plains Pty Ltd. Having started their own farming enterprise in 2018 after a planned transition from their previous business 'Glendale Pastoral', Craig now manages over 10,000ha with his wife Amanda and two sons, Dylan and Rhys, alongside their valued employees. The business has a sizeable livestock program running 5,000 breeding ewes and they crop wheat, barley, canola and legume crops. They also have their own transport business, Venus Plains Logistics.

Session summary

Introduction

Recent years have seen strong returns for many areas in cropping enterprises driven by strong commodity prices and yields with grain. The 2022–23 season was widely one of the best, if not the best, on record – particularly on the Upper Eyre Peninsula.

This leads many to question the enterprise balance they have within their business and asking the eternal question 'should I have less livestock in my business?'. By gaining an understanding of the financial aspects of livestock in the system and backing that up with a practical view from Craig Kelsh of Venus Plains Pty Ltd, we can get a picture of why they should remain a firm part of the farming landscape on Upper Eyre Peninsula.

Reasons to include livestock in the system?

Mixed enterprise has excellent profit potential (when enterprises are well integrated). Previous work conducted for the MLA project *The profitable integration of cropping and livestock* as well as other projects of this nature, showed that top 20% performance is not dependant on a particular enterprise choice or geography alone. What works well in one area, does not necessarily work in another to achieve the same result.

Some strengths of mixed enterprise businesses include:

- creating diversity (rotational mix, ryegrass management, income streams)
- on some land classes a livestock enterprise offers stronger gross margin returns than alternative break crop choices
- potential to reduce or smooth volatility in a highly variable environment
- livestock are part of the farming systems solution to high frost risk landscapes
- livestock provide an opportunity to make beneficial use of by-products.

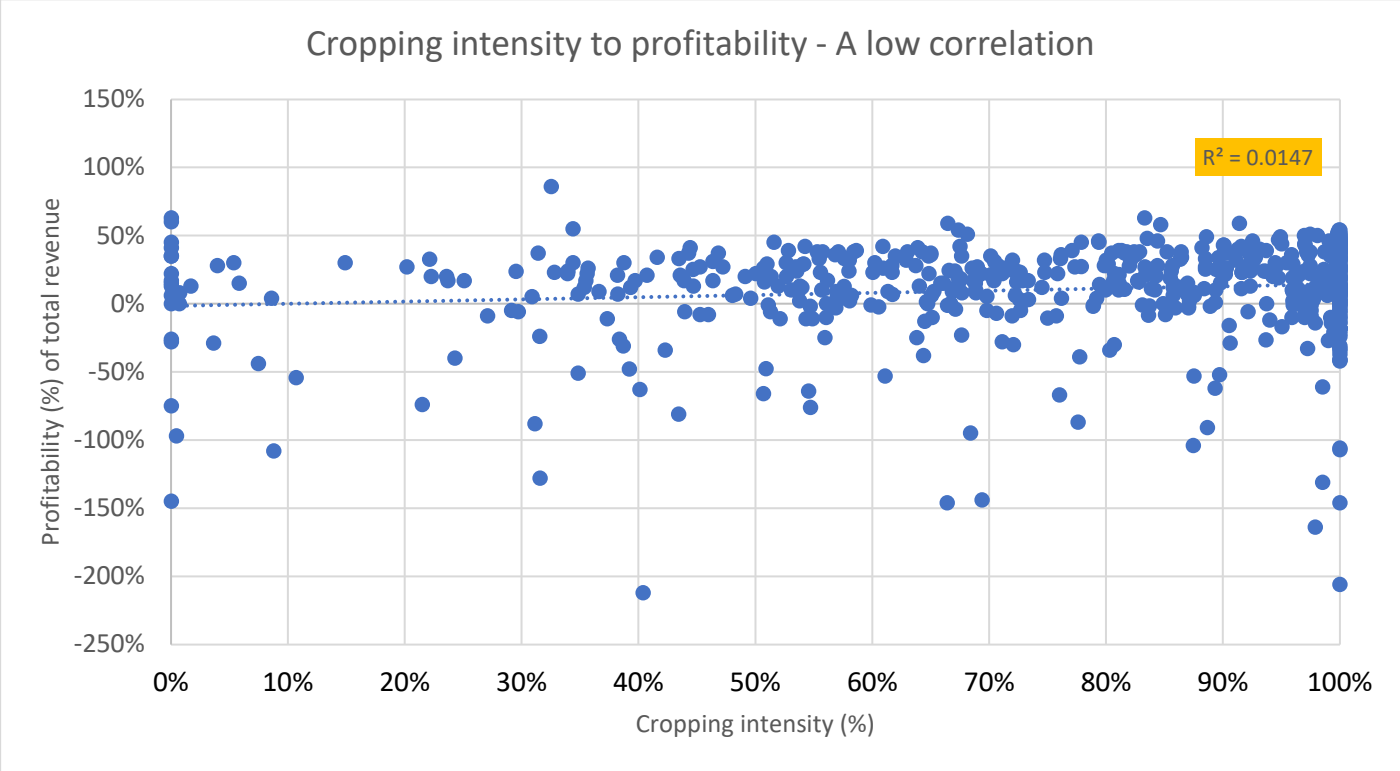
In any situation, being able to address four key primary profit drivers is a crucial element to a superior business outcome:

- **Gross margin optimisation** – how much can we generate, and how do we do that cost effectively to create the best margin?
- **Developing a low overhead cost structure** – are investments in machinery, land and labour suited for our business and the margins we create? Can we invest in labour savings devices for sheep handling that create speed and efficiency with the same amount, or less labour, for example?
    - Are we over-invested in any of these, and can we get more from them without creating burnout or unnecessary damage?
    - What about the ability of lease land to perform as well as our overall debt levels?
- **People and management** – being able to achieve the first two is reliant on good management across the whole business and seeking help where we have gaps.
- **Risk management** – are we proactively managing risk in the business be that seasonal such as frosty landscapes, fragile soils or things like business succession? If we are not, then we risk them unhinging our business.

Make sense from the numbers that make the decisions

Chasing large cropping programs does not necessarily translate to being more profitable. Figure 1 demonstrates there is little correlation between a greater cropping intensity and greater profits in the last five years across SA (according to benchmarking data collected by Pinion Advisory to 2021–22 season).

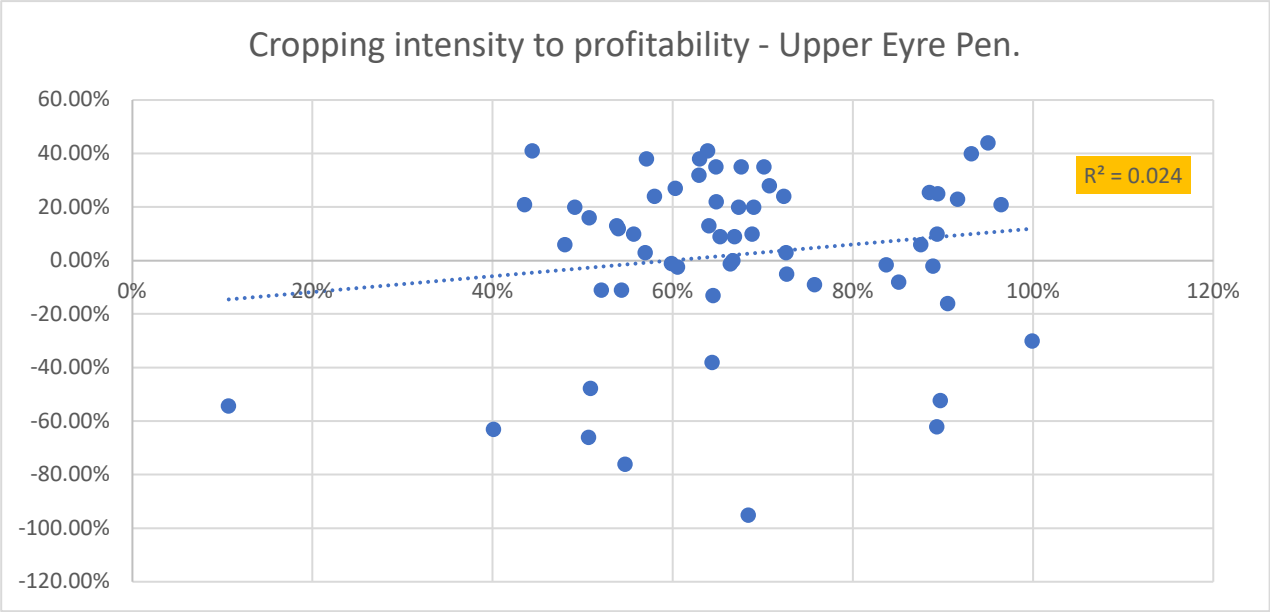
Figure 1: Cropping intensity and its relationship to profitability across SA



There are some businesses that make big profits at 100% cropping and those that are 100% livestock, are equally capable of producing large profits as a percentage of gross revenue. Likewise, there are many businesses that can post large losses at any end of the cropping intensity scale.

Figure 2 shows little improvement in that correlation for the Upper Eyre Peninsula across the same five-year period to the 2021–22 production year.

Figure 2: Cropping intensity and its relationship to profitability on Upper Eyre Peninsula

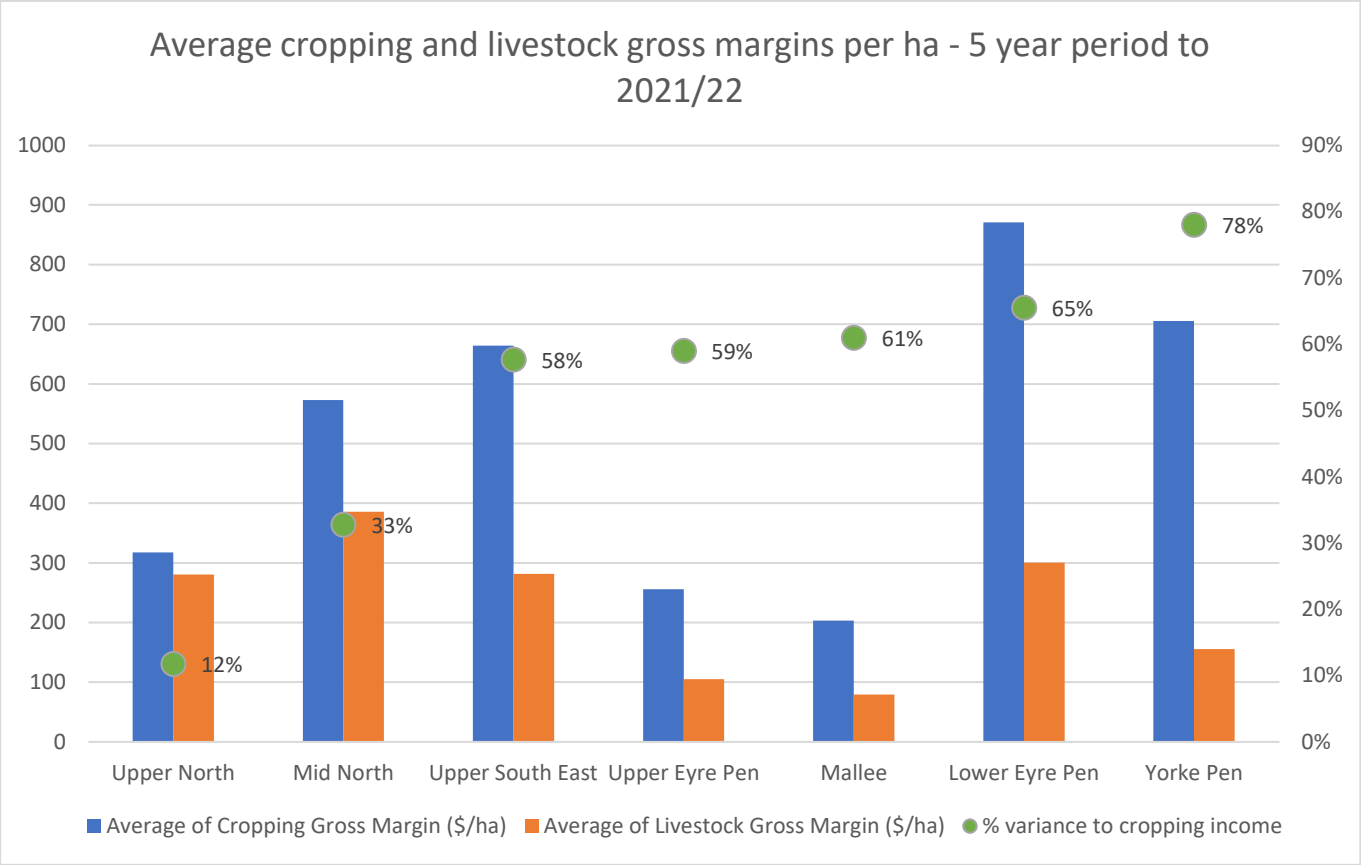


So, what is this telling us? The answer is simply, know your own numbers and use these to integrate the primary profit drivers. Put short, there is no one size fits all approach and is entirely dependent on your system and your landscape. So, what makes you money may be entirely different in another region. Having a discussion on livestock on the Yorke Peninsula comes down to more love of livestock than clear gross margins (in many cases) because there are higher margins to be had in other enterprise choices. In other areas, livestock are well suited as part of a sustainable and productive enterprise mix.

Figure 3 suggests different regions of SA have variances in livestock gross margins, when compared to cropping gross margins. Typically, cropping gross margins will provide the upside when seasons allow, and they tend to drive the big profit years such as the one just past. In many cases where livestock are present, it is this phase of the rotation that sets up a prime cropping return with paddock cleanliness and retained nitrogen, so looking at cropping and livestock margins in isolation is only half the story.

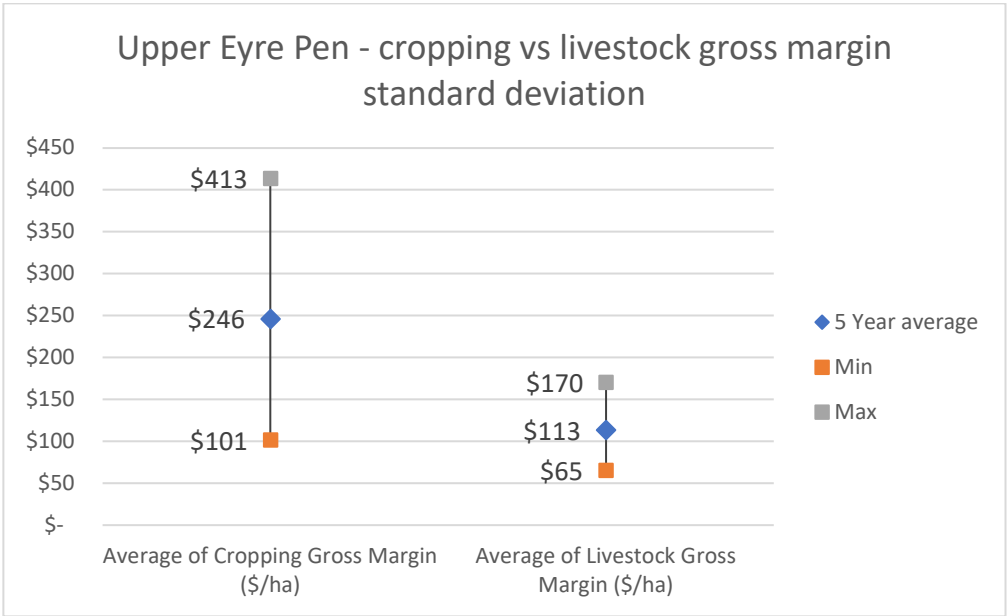
Upper Eyre Peninsula is a great example of this symbiotic relationship where other break crops often don't perform consistently or carry far too much volatility for little margin.

Figure 3: Average of cropping versus livestock gross margins per ha for different regions of SA



However, when seasonal fortunes change, livestock do play an extremely important role. It is the very nature that livestock are less volatile than cropping. Although giving away potential margin in bumper years, livestock provide a level of consistency in the poor seasons that creates their income smoothing, consistent cashflow qualities. Figure 4 shows the average margins of both cropping and livestock on Upper Eyre Peninsula. Despite the average gross margin of cropping being over double that of livestock, the variance is much less extreme and in poorer years, cropping and livestock gross margins are very comparable.

Figure 4: The average gross margins of both cropping and livestock on Upper Eyre Peninsula



Use the numbers you have and turn them into management gold. The use of benchmarks is less about striving to be in the Top 20% all the time. Rather it's about knowing the possibilities and then using that to shed light on the money you are leaving on the table in your own business.

Typically, livestock are seen as adding diversity to businesses and reducing risk. These are all noble attributes but these should not be at the expense of long-term margins and it should 'fit' the system and its management. Diversity can dilute resources, seriously impact simplicity and detract from core business.

An example is shown in Table 1 below. With a range of options for providing a break, picking those that can provide value to the cropping program as well as providing their own income is critical to contributing to business profit. This shows that livestock can provide nitrogen back to the system (valued at $50/ha for legume based pastures) and create a strong margin when compared with other crop choices.

Table 1: $/ha gross margins for alternative break crop options

Long term crop yield	0.25t/ha	0.5t/ha	0.75t/ha	1.0t/ha
Break crop type	**Gross Margin $/Ha**			
Canola @ $600/t	-$159	$0	$150	$300
Peas @ $350/t +N	-$63	$25	$112	$200
Lentils @ $700/t + N	$5	$200	$375	$550
Sheep $35/DSE + N	$120	$155	$190	$225
Sheep $45/DSE + N	$140	$185	$230	$275
Sheep $55/DSE + N	$160	$215	$270	$325
Stocking rate/Ha	**2.0 DSE**	**3.0 DSE**	**4.0 DSE**	**5.0 DSE**

Source: Pinion Advisory SnapShot™ benchmarking data

Other considerations also need to be given to your farming environment. Ground harvestable crop types such as lentils also generally compromise cover and in the fragile soils of the Upper Eyre Peninsula can create serious erosion risks. They also require some carefully selected paddocks. Careful grazing and management can mean livestock remain an important part of the overall farming system.

To ensure we are optimising the integration of cropping and livestock, look for the **win:wins** and how you can use them to your advantage.

These win:wins may be (but are not limited to):

- utilising land not suited to cropping
- having a plan for very frosty parts of the farm
- utilising stubbles and grain residues (also reducing pests)
- providing a viable break crop that provides nitrogen back to the system without the need for very expensive gear and without the production volatility
- weed control and setting up a strong cereal paddock.

How this applies practically – Venus Plains Pty Ltd

Venus Plains Pty Ltd, located near Witera is run by Managing Director, Craig Kelsh. Annually they join 5,000 merino ewes, 3,000 of which are joined to Merinos and 2,000 to Black Suffolks. There is also a sheep stud enterprise.

What are the key livestock profit drivers in the Venus Plains business?

The Venus Plains livestock operation is run as two separate operations to maximise profitability and get the best out of every animal.

Block one – 5,900ha:

- Red and grey loam over clay with limestone areas (not suitable for cropping).
- Three quarters continuously cropped, growing cereals, vetch, lentils, peas, lupins and remainder medic.
- Country is excellent for growing sheep out and limited amount of dust in summer. This suits February shearing and dropping lambs in spring.

Block Two – 4,000ha:

- Two thirds cropped to cereals with one third medic pasture with good water supply.
- Suited to running good numbers of ewes with autumn lambing and shearing in August.

Venus Plains started their own farming business in 2018 with Craig, his wife, Amanda, and their sons, Dylan and Rhys, who both now work in the business alongside other employees. From the start, a family advisory board was created with James Hillcoat working as an independent chairperson. The main aims were to set strategy, enhance communication and decision making and to integrate all family members into the business.

A key aspect of this board structure was to benchmark the Venus Plains business, gathering a data trend over time to find out what the main profit drivers were. Not only did this enhance business strategy and understanding, but it also served well to inform and train the next generation in business and financial understanding. It now serves as a good opportunity to annually review the previous year as well as providing base data for key business decisions.

By using key production benchmarks (such as stocking, reproduction rate, as well as costs of production) and understanding of the industry, the main finding in the livestock enterprise was that every mature age sheep had to be producing a lamb. Just growing wool wasn't worth the hassle, especially as shearing costs became more expensive.

Given this, Venus Plains started pregnancy testing ewes and any dry ewes are then re-mated in the next joining or culled. All wethers and cross bred lambs are also finished on-farm in a feedlot to a finished weight, giving year-round cashflow (when finished to truck loads). Care is taken to keep this as efficient as possible, including being mindful of the costs of supplementary feeding with the aim of optimising the available margin.

From a ram management perspective, Venus Plains breed their own rams on block one, with all rams being used twice a year. They also sell off a small team of rams each year with the proceeds being used to buy in two or three good sires per year to use with the stud ewes. This enhances key genetics, with targets being frame size, wool micron and nourishment to keep dust out.

Ensuring that resources are well utilised, Venus Plains transport all their own livestock making use of trucks and labour that complement their wider business. Finding employees that enjoy working with livestock is hard, but a necessity if you want to get the maximum out of sheep. Venus Plains tries to place those with the right skills in the right role for this very reason. Investments are also made in infrastructure that reduces the burden on these resources, as well as making the livestock enterprise more efficient. These upgrades have included:

- fencing upgrades
- water Infrastructure and monitoring
- hay shed
- lick feeders
- sheep yards and covers
- new shearing sheds soon.

These are all big costs but imperative if you want to run a good safe livestock enterprise into the future. These projects are looked at strategically and where there is a fit as well as a strong return, the business makes a confident decision to proceed.

In summary, livestock integrates well into the Venus Plains business by:

- Providing good year-round cashflow, with good numbers of lambs and mutton turned-off from March through to end of September.
- Making good use of all stubbles and residues.
- Selling wool twice a year, giving an each-way bet on the wool market and not trying to predict when it will peak.
- Utilising land not suited to prime cropping and generating a respectable margin from that.
- Utilising machinery and labour investments without compromising timings in the cropping program.

Key take home messages

- In many cases livestock provides a viable option to maintain a robust rotational enterprise as well as reducing volatility in a highly variable system.
- Have a plan in place to run your livestock simply and effectively whilst utilising the resources you have without compromising the cropping program. Think win:win.
- Know the numbers that relate to your business. Understand the benchmarks and the gross margins and use that information for informing business decisions.

Relevant tools and resources

- **Business EDGE**

  Business EDGE is a comprehensive two-day workshop for owners and managers of grazing enterprises. It's specifically designed to improve financial literacy and business skills.

  Themes available are breeding, business, young guns (business); nutrition, grazing land management, and grazing fundamentals.

- **MLA research report:** ***The profitable integration of cropping and livestock in Southern Australia***

  This project reviewed benchmark data, conducted a skills audit and applied a risk analysis tool to define the primary profit drivers in mixed farming systems throughout southern Australia.

- **MLA fact sheet:** ***The profitable integration of cropping and livestock: SA Mallee and Upper Eyre Peninsula***

  A fact sheet tailored to the Upper Eyre Peninsula that explores profit drivers for integrating cropping and livestock, the on-farm actions to consider and the business case for doing so.

Notes

Carbon update

Towards carbon neutrality – practical steps for Eyre Peninsula producers

Cam Nicholson

Director, Nicon Rural Services

E: cam@niconrural.com.au

M: 0417 311 098

About Cam

Cam Nicholson is a director of Nicon Rural Services, a consulting business near Geelong working with the grazing and cropping industries. Cam has worked in pasture agronomy and soils for 35 years and has been involved in many producer programs.

He provides consultancy advice to producers and lectures on animal and pasture systems at Marcus Oldham College. His most recent work has focused on understanding and discussing risk in farming businesses, carbon accounting and decision making.

He and his wife Fiona run a 400ha beef and sheep farm on the Bellarine Peninsula turning off cattle for the long fed feedlot market and fine wool.

Session summary

Carbon is the buzz word now. While it may appear to have only popped up in the last few years, partly because of the pledge by players in the red meat industry to manage carbon emissions e.g. Australian red meat industry's *Carbon Neutral by 2030 Roadmap*, the momentum has been building for a long time.

Background

The United Nations established an Intergovernmental Panel on Climate Change (IPCC) 35 years ago (1988), with the aim of stabilising greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (human created) interference with the climate system. The shorthand for this is climate change. The target was to keep the average rise in global temperatures below 1.5^0C.

About 200 countries are part of this initiative (including Australia) and they meet annually to consider the latest research and thrash out common benchmarks, targets and 'rules' under which countries will account for their

emissions and sequestrations. These meetings are called COP (Conference of Parties), the last being COP27 in Egypt in 2022.

Australia produces about 1.4% of global emissions (~5% if you include exports of coal and gas). Agriculture contributes about 15% of those emissions, with ruminant livestock the biggest contributor. Given we export about 70% of our agricultural products, the sector is exposed to potential trade restrictions from other Governments e.g., European Union's Carbon Border Adjustment Mechanism (CBAM).

However, Governments are not the only forces driving the carbon debate. Commercial businesses, both big and small, are increasingly demanding a reduction in the net carbon emissions from suppliers. It is sobering to consider a quote from Professor Richard Eckard at the University of Melbourne 'of the 100 largest economies in the world, 69 are companies and 31 are countries. Government policy may now be less influential than market forces'.

I believe we are at a point where producers cannot afford to ignore the greenhouse gas issue otherwise our ability to sell into markets will diminish and the price you receive will reduce.

Understanding the greenhouse bit

There are multiple forms of greenhouse gases that restrict heat from leaving the atmosphere (water vapour, carbon dioxide, methane, nitrous oxide etc). Each gas has a different level of restriction or effect on warming over a 100-year period. This is referred to as the global warming potential (GWP_{100}), with carbon dioxide given a rating of one and all other gases multiples or equivalents of this standard (called CO_2e). It is the same concept as the DSE rating for livestock.

The two largest GHG contributors in broadacre agriculture are Methane (CH_4) and Nitrous Oxide (N_2O). Methane currently has a GWP_{100} rating of 28 and Nitrous Oxide 265, so it is understandable agriculture needs to be part of the carbon response. There is growing debate around how suitable the GWP_{100} metric is for livestock, led by Frank Mitloehner at UC Davis in California, but currently this lower warming potential calculation is not accepted internationally or in Australia.

However, one opportunity agriculture has over many other industries is the potential to capture carbon through plants as part of the farming operation.

Calculating a farms' carbon emissions

There are a range of useful resources and tools to calculate a farms' carbon emissions that meet Australia's National Greenhouse Gas Inventory standards. They are available for a range of industries and include direct farm emissions (scope 1), electricity (scope 2) and emissions from the manufacture and supply of inputs you use (scope 3). If sale weights and yields are included in the calculation, an emissions intensity (how much CO_2e for each kg of meat, wool or grain) can also be calculated.

This is a 'safe' place to start, as you are not committing to any scheme but are starting to understand what emissions your farm is producing. There are also some useful benchmarks to understand, from a carbon perspective, how efficiently you are producing each commodity (Table 1).

Table 1. General benchmarks for emission intensity of various commodities

Commodity	Range	Units
Beef	11 to 15	kg CO2-e/kg Lwt
Sheep	6 to 8	kg CO2-e/kg Lwt
Wool	20 to 26	kg CO2-e/kg gsy
Wheat	0.3 to 0.5	t CO2-e/t crop
Canola	~0.7	t CO2-e/t crop
Barley	~0.5	t CO2-e/t crop

Source: Richard Eckard pers comm

Undertaking this calculation also enables examination of what could be done to lower these emissions. While every farm is different, my experience would suggest the following areas are worth examining:

- opportunity to sell unproductive animals (earlier)
- increasing reproductive performance e.g., more twins, less empties
- increasing animal growth rates through nutrition, health and genetics
- the use of feeds that reduce methane emissions e.g., vetch, oils.

The beauty about having calculated your current emissions is you can do 'what if scenarios' e.g., what if I sold those dry cows earlier? What if I reached my lamb target weight earlier?

In the future, feed additives or treatments that reduce methane losses and can be administered practically at a farm scale may also be available e.g., 3NOP.

Carbon neutrality and carbon storage

Carbon neutrality refers to the removal of carbon from the atmosphere in sufficient quantities to offset the emission from producing the commodity. The greenhouse gases we commonly emit in broadacre agriculture (CH_4, N_2O) are different and have different global warming potential to what we capture in plants (CO_2). This does not matter if the NET amount on warming potential from the outputs is in balance with the amount of warming potential we capture in vegetation. In other words, we do not need to have zero emission livestock if somewhere along the supply chain we capture the emissions the livestock produce. Clearly the less each animal produces, the less we need to capture (which is where the emissions efficiency comes into it).

Trees and soils are major carbon sinks in agriculture. However, it is important to remember soils don't make carbon, plants do through photosynthesis. It is the growing plant (or imported organic material) that is added to the soil that drives the renewal of carbon in the soil. Soil is the storage mechanism. Soil type, rate of organic matter breakdown and our management practices all determine how much of that carbon remains stored in the soil.

Plant material, as well as containing carbon, also contain essential plant nutrients. These nutrients are not released until the soil 'bugs' break down or mineralise the organic material. Unfortunately, in the process of breaking down the soil organic material a significant portion (90+%) of the carbon previously captured in the organic matter is released back into the atmosphere. Only a small proportion remains that can be stored more permanently.

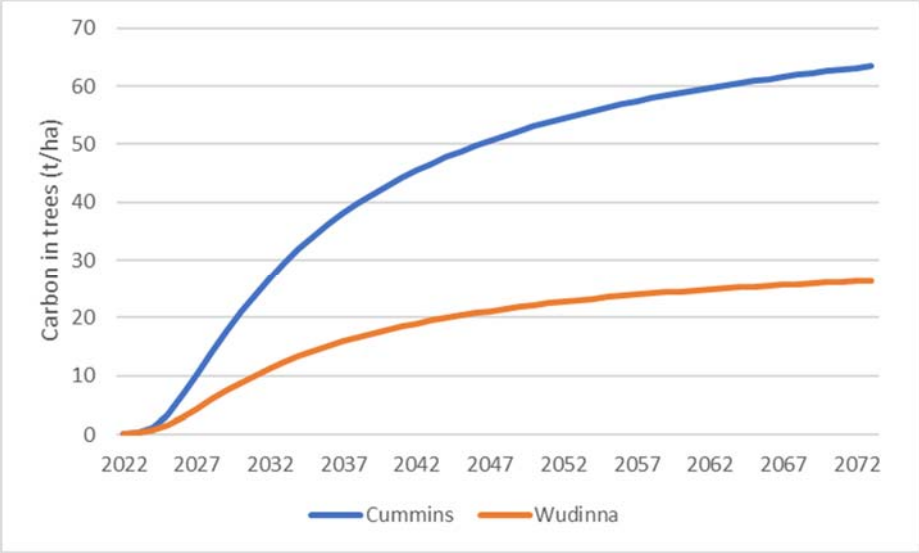
If we add more organic material than what has been provided in previous years (and maintain this higher level of input), soil carbon will tend to rise before reaching a new equilibrium. If we reduce the amount of material

compared to previous years, say because of drought or from growing crops rather than pasture, then soil carbon will decline until it reaches a new lower equilibrium.

As the soil carbon balance is reliant on how much plant material (biomass) that grows and enters the soil in a year, it is not surprising higher rainfall areas commonly have higher soil organic matter than lower rainfall areas, and long-term pasture paddocks have higher soil organic matter than similar areas that are continuously cropped. NB: Soil texture and management also have an effect.

So, on the Eyre Peninsula (EP) the lower EP has more potential to store carbon than the upper EP, simply because of rainfall and temperature. Consider the example of the amount of carbon in a landcare type planting, calculated using the Australian recognised tree carbon capture tool (FullCAM) (Figure 1).

Figure 1. Tree carbon capture from environmental planting at Wudinna and Cummins



Importantly the carbon captured must be stored permanently for it to be a true carbon sink. That is why actively growing trees that you can see are currently favoured as a carbon sink compared to the greater volatility in carbon stocks associated with soil (because of seasonal variability and accuracy of measurement).

Carbon trading or insetting

Carbon farming was touted by Governments and commentators as a major opportunity for producers to make money and diversity their business. Producers would sell their carbon to other businesses and organisations who needed the offsets. However, we quickly learnt if we sold our carbon to a third party, we no longer owned or could use that carbon ourselves but had to ensure it was there for the next 30 or 100 years! Further, our own markets were starting to demand lower emission products, meaning we needed all the carbon we were storing on-farm for our own use.

The concept of legitimately measuring and recording the carbon being stored on a farm, along with the farm's emissions, is rapidly replacing thinking around carbon selling. Referred to as insetting, the approach allows a producer to 'bank' future carbon capture to use as 'credits' against the emissions from their products. Insetting schemes with integrity are starting to emerge e.g., Climate Active.

Tips and traps as you consider a carbon neutral path

As you consider a carbon neutral path, be aware of:

- Getting caught up in the hype of making lots of money from carbon. In an Eyre Peninsula environment, especially with projected climate change and the way markets are going, you will need every bit of carbon for your own business.
- Do your homework and understand the basics of the carbon cycle and carbon storage. Only use calculators and methods that will stand up to scrutiny over time. The MLA and University of Melbourne websites are a good starting point.
- Be prepared for the 'rules' to change. It is an evolving space and you will need to respond to changing circumstances.

Key take home messages

- Calculate your carbon emissions, emissions intensity and explore what current practices could lower this result without harming profitability.
- Maximise how much biomass you grow in a year – it is the building block to improving soil carbon.
- Closely follow the evolution of carbon insetting – it is likely to be an essential part of product trading in the future.

Relevant tools and resources

- **Carbon Neutral 2030**

  The Australian red meat industry has set a target to be carbon neutral by 2030 (CN30). This means that by 2030, Australian beef, lamb and goat production, including lot feeding and meat processing, aim to make no net release of greenhouse gas (GHG) emissions into the atmosphere.

  With a commitment from all of industry, the right policy settings and ongoing research investment, the Australian red meat industry can be at the forefront of carbon neutrality.

  MLA's investment into CN30 research, development (R&D) and adoption aims to enable and empower the red meat industry to achieve the CN30 target, with a focus on reducing emissions while maintaining productivity gains. Visit this page to find out more about:

  - Getting your business CN30 ready. It contains actions to consider (many of which have been highlighted in the paper).
  - Carbon neutral red meat product catalogue. It contains a list of products and services to make emission reductions and improvements in carbon storage on-farm.

- **Carbon 101 – eLearning module**

  A training package developed for MLA's eLearning centre by Pinion Advisory and reviewed by Greenham Tasmanian supply chain producers. The free online training package will provide foundational information about carbon farming and greenhouse gases relevant to agriculture. At the completion of the module users will:

  1. Have improved carbon literacy and better understand the language of carbon.
  2. Understand what is meant by carbon farming, carbon neutral and climate neutral.
  3. Understand what is meant by carbon farming, carbon neutral and climate neutral.
  4. Understand how to start to improve your carbon performance.

  Visit elearning.mla.com.au/courses/carbon-101/ for more information.

- **Measuring your own emissions – eLearning module**

  A training package developed for MLA's eLearning centre by Pinion Advisory and reviewed by Greenham Tasmanian supply chain producers. The free online training package will help step producers through using the Sheep and Beef GHG Accounting Framework (SB-GAF) tool to estimate their emissions.

- **Primary Industries Climate Challenges Centre (PICCC)**

  The PICCC is a research centre focused on addressing the impact of climate change on agricultural industries. The PICCC website contains a number of useful resources, tools and publications, including measuring your own emissions, using the Sheep and Beef GHG Accounting Framework (SB-GAF) tool at piccc.org.au/resources/Tools

- **MLA *Carbon Accounting Technical Manual***

  A technical manual, developed for wider industry use, based on the outcomes and feedback received from a series of pilot carbon accounting workshops run in early 2020 across Australia. The purpose of this manual is to provide background information on carbon accounting and guidance around building a carbon account using the GHG accounting framework calculators developed by the University of Melbourne.

- **Carbon Neutral Agriculture Training Program**

  A one and a half day intensive course supported and facilitated by the Primary Industries Climate Challenges Centre (PICCC), which introduces participants to government policy, industry and carbon market drivers, and Australian agricultural emission sources and sinks. Participants will also develop a full farm carbon audit, account and footprint as part of the program.

  Visit piccc.org.au/education/carbonneutraltraining for more information.

Notes

Feedbase updates

Simple and effective legume pasture systems – getting the most out of it

Alison Frischke

Birchip Cropping Group

E: alison@bcg.org.au

M: 0429 922 787

About Alison

Raised on a wheat and sheep farm near Ceduna, Alison understands the challenges of low-medium rainfall mixed farming, variable seasons and distance! Alison has 27 years of mixed farming research and extension experience, spending 13 years with SARDI's Minnipa Agricultural Centre, before joining Birchip Cropping Group in 2010, based in Bendigo. Working closely with producers, her research and activities have focused on a broad range of plant and soil health, pasture, fodder and livestock production issues. Recently Alison was involved in the national Dryland Pasture Legume Systems project, which evaluated legume development and nitrogen fixation, pasture benefits to cropping and livestock systems, and whole-farm economics on farms across Australia.

Session summary

This session will focus on how legume pastures fit into the mixed farming system, and how to get the most out of them in the Eyre Peninsula environment.

Benefits to soils and crops

Legume pastures provide more soil carbon and nitrogen for microbial activity and function than grain crops, supporting nutrient cycling, organic matter turnover, disease control, soil structure, and agrochemical breakdown. For the crop, this means improved yields, less reliance on fertiliser nitrogen, and improved grain quality. With careful grazing management, legume pastures can provide extended quality feed, groundcover and weed control options in a rotation.

Pasture legume options

A wide range of pasture legumes are available with different species suited to different soil pH and textures. Well adapted pasture legumes provide similar benefits to livestock and following grain crops. A greater range in benefits are expected in the longer term as differences in legume regeneration and production accrue. Choose species and varieties which have demonstrated performance, with adaptive traits that suit your farming system including soil type (texture, pH, drainage), maturity (flowering time matched to rainfall), and suitable levels of

hard seed. Other traits such as aphid resistance, boron tolerance, sulfonylurea (SU) herbicide residue tolerance, powdery mildew (PM) resistance and harvestability may be important to you.

For lower rainfall, neutral to higher pH loam to loamy clay soils, medics are the most consistent performing hard seeded pasture legume. New medic varieties Seraph (early season, strand medic, PM resistant, SU residue tolerant), Penfield (early season, spineless barrel medic, SU residue tolerant, boron tolerant), and Emperor (mid-season, barrel medic, PM resistant, boron tolerant, phoma resistance) are growing higher biomass yields and carry favourable traits. Vetch suits a one-year pasture phase on a range of soil types that are neutral to alkaline.

If interested in alternative species, sow relatively small areas initially to determine if they perform and on what part of the landscape they perform. French serradella has performed well on deep sands with pH less than neutral.

Establishing legume pastures

- Rhizobia – use the correct inoculant group for the legume pasture; group AL for lucerne, strand and disc medics, AM for annual medics, S or G for serradella, and E or F for vetch. Rhizobia needs to be applied when sowing serradella unless lupins have been grown previously. Although rhizobia are common in soils with recent legume history, inoculation responses are common in the SA/Vic Mallee.

- Sowing systems can affect seed softening and establishment success:

    - **Autumn sowing** – traditional sowing time has often been after the cropping program. Sowing legume pastures soon after the break will increase the chances of success, gaining some grazing value and better seed yield in the first year. Autumn sowing is most reliable across species.
    - **Summer sowing** – sowing in February to the first week of March allows time for seed softening before the autumn break. This suits French serradella and Bladder clover that need burial for seed softening but offers limited benefit to medic over autumn sowing. This is suitable for pods and/or seeds harvested from your own pastures or if purchasing hard seed (i.e., not scarified).
    - **Twin sowing** – sowing underneath a cereal crop in autumn, seed will soften and germinate on the break of the following year. Unless you can be confident in seeding depth, with no furrow infill, twin sowing is not recommended.

- For best emergence, keep seed depth shallow, ideally 1cm for small seeds. Vetch can go deeper (>3cm) but will start to have a shoot biomass penalty at greater depths. Avoid sowing furrows falling in on top of the seed.

- Weed control is paramount to establishment, particularly with pasture mixes. Create competition using narrower row spacing, and control weeds when they are small because herbicides are slow acting. Autumn sowing gives the best opportunity to control weeds.

- Sowing rate – while it's tempting to skimp on sowing rates, for little extra cost, the recommended sowing rate will grow more biomass, creating better weed competition and set more seed. Purchased medic seed will have high germination levels but for alternative species French Serradella and Bladder clover you need to know if you have soft seed (autumn sowing) or hard seed (late summer sowing).

- Pasture legume mixes can be used to manage paddock soil type variations and take advantage of extended springs. Adjust sowing rate of each pasture legume to the proportion of the mix. Seraph medic alone or with one other pasture legume performed best at Minnipa.

Livestock grazing and production

Legume pastures have higher digestibility and higher protein content later into the season than annual cereal crops and grasses that decline in quality quickly as they mature. Sheep prefer to eat legumes to grass species, so will eat higher quantities, and therefore gain weight faster, grow more wool and produce more milk on pastures with higher legume content. All legume pasture species provide similar feed value and production gains.

If seed set is important, cease grazing by flowering to protect seed production. Pasture pods and seed are eaten by livestock but reduces the seed available for regeneration of the pasture. Survival of seed ingested and returned to the seedbank varies greatly between pasture legume types, with smaller seeded species having a greater proportion of viable seed.

Harvesting seed and regeneration

Aerial seeded pasture legumes, such as serradella, can be harvested with conventional headers, providing a low-cost seed source.

Medics cannot be harvested with conventional headers because they readily drop their pods, although pods are sometimes cleaned from harvested grain crop samples.

Current SAGIT trials are testing early desiccation methods to enable successful harvesting, storage and sowing rates of pods.

Farm level profitability

A new pasture phase incurs establishment costs and potentially foregone grain crop profit in the establishment year. However, it provides reduced nitrogen fertiliser costs, and enhances grain yield and protein of following cereal crops.

In SA/Vic low-medium rainfall modelling, the costs of establishing a medic pasture were paid back in three years with moderate grazing, and within four years without grazing. This was a result of wheat yields increasing by 1.1 t/ha (44%) and grain protein by 0.7% after medic pasture, compared to a continuous cereal rotation. Medic rotations also finished with established seed banks.

Other modelling showed whole-farm profit increased by approximately 20% with a standard pasture compared with continuous cropping, and raised a further 26% when the standard pasture was replaced by improved medic Seraph (higher yielding and higher digestibility). Much of the increased whole farm profit is realised in the cropping phase but better pastures provide opportunities to increase stock numbers.

Pasture Paramedic

Pasture Paramedic is a decision-making tool that allows rapid assessment of pasture condition. The tool is used in the paddock to measure the quality and quantity of available pastures, and helps identify requirements for pasture rejuvenation using fertiliser, herbicides or grazing, or complete renovation by resowing. Useful images and notes help identify and assess common grasses, legumes, cereals and weeds. Pasture Paramedic is a partnership between Meat & Livestock Australia and Southern Farming Systems.

Key take home messages

- Support the establishment and growth of pasture legumes and utilise the extra feed with more stock, for best pasture legume success in a mixed farming rotation.
- Consider sowing new pasture legume varieties that offer higher production and adaptive traits suited to your farm soils and rainfall.
- Use the Pasture Paramedic tool for quick paddock assessment of legume pastures, and to help decide best management actions for rejuvenation or renovation.

Relevant tools and resources

- **Eyre Peninsula Farming Systems Summaries**

  Pasture evaluation and management trial reports from local Eyre Peninsula Grain & Graze and Dryland Legume Pasture System trials.

- **GRDC Groundcover Publication**

  A snapshot of research and producer experiences from the Dryland Legume Pasture Systems Project across Australia.

- **Pasture options for Eyre Peninsula**

  This publication is the first port of call for landholders looking to establish pastures on Eyre Peninsula.

- **Pasture Paramedic**

  Pasture Paramedic is a decision-making tool that allows rapid assessment of pasture condition in the medium to high rainfall zones of southern Australia, northern NSW and the WA wheatbelt.

  The tool is used in the paddock to measure the quality and quantity of available pastures and identify requirements for pasture renovation or rejuvenation.

- **MLA legumes hub**

  This hub has been created to help build the capacity of producers and advisors to assess and rank limitations to legume growth and then develop management approaches to improve legume content on their properties. It also provides a simple diagnostic approach to assess legume pastures, identify the leading reasons for possible legume decline and what management practices are available to address these limitations.

Notes

Managing and monitoring your feed: Australian Feedbase Monitor

Alastair Rayner

National extension and adoption manager, Cibo Labs

E: arayner@cibolabs.com.au

M: 0427 102 317

Twitter handle: @alrayner302

Facebook: Cibolabs

About Alastair

Alastair operates RaynerAg, an agricultural consultancy business in NSW, servicing the red meat sector with a focus on beef production. Alastair established RaynerAg in 2013, following a 17.5-year career with NSW Department of Primary Industries as a District Livestock Officer (Beef Products). Since commencing operations as an independent advisor, Alastair has established a strong client base in NSW, Queensland, and SA.

RaynerAg offers a full range of on-farm services including livestock management and selection, nutrition and drought management, breeding herd performance and from 2020, clients can also use Alastair as a licensed stock and station agent.

Alastair is well-known for his skills in training and delivery and works closely with a number of organisations to deliver practical and tailored on-farm training courses and workshops.

Alastair is highly regarded for his technical skills, writing for Beef Central as the Genetics Editor and in leading the national extension strategy for the Australian Feedbase Monitor project. This joint project between Cibo Labs and Meat & Livestock Australia will offer every red meat producer real time satellite updates of pasture growth and feedbase changes, assisting in more informed grazing management decisions.

Session summary

Effective grazing management decisions are those that ensure livestock remain on predicted growth rates to meet production or market targets. Ideally decisions around feed availability, both quality and quantity, achieve this aim to avoid, or at least minimise, the likelihood of producers being forced into unplanned feeding programs or sales.

Most producers readily identify pasture assessment as an undertaking regularly conducted within their management framework. Responses to industry surveys conducted in 2022 highlighted over 80% of producers undertaking regular assessments, with half of these producers making assessments a weekly process.

Assessments are primarily conducted via visual assessment and rely on the experience and previous observations of the managers and business operators.

Despite the high level of assessment activity, responses indicate accuracy and reliability of these assessments is variable and often unreliable. Almost 30% (29.3%) of producers engaged in the survey had been placed in a position of making unplanned destocking decisions at least twice in five years. Within this group of respondents, 63% had to make unplanned sales, with 48% reporting lost income as a result.

While pasture assessment may not prevent a situation where destocking or unplanned sales may occur, accurate pasture assessment increases the flexibility for managers and business operators to respond earlier to changing circumstances. This can potentially avoid income loss through loss of options as seasons and markets tighten.

The Australian Feedbase Monitor (AFM) is a joint project between Cibo Labs and Meat & Livestock Australia (MLA), funded through the MLA Donor Company. The project is the first to offer red meat producers across Australia with accurate and regular updates of ground cover (%) and Total Standing Dry Matter (TSDM/kg) for every hectare of a property engaged in red meat production.

Producers who are members of MLA can access the Australian Feedbase Monitor (AFM) through their myMLA accounts. To initiate their account, users will need to link their existing Livestock Production Assurance (LPA) account, which are attached to a property identification code (PIC) within their myMLA account. This linking allows the AFM to be set up for a specific set of land parcels associated with a PIC.

Within the AFM dashboard, users can select their location and property parcels associated with their individual PIC. Once this has been done, the AFM can be used to generate both images of the TSDM and ground cover % for the current month, as well as being able to review on a sliding timescale, conditions over the previous month or months going back to 2017.

This view offers managers and business operators the value of an accurate assessment of current feed levels for all parts of a property, not just those that are the most assessed due to access or convenience. The monthly comparison shows trends in the season, and the variation across a location, offering the chance for early and flexible decision making.

In addition to the map views, producers can select a particular land parcel to view comparison graphs for the high, low and medium levels of TSDM. These monthly ranges can be valuable for producers managing to a benchmark or for other strategic decisions. A second graph shows the monthly comparison of the TSDM of the current year against the previous years back to 2017.

These graphs allow producers to see their local situation and to make decisions based on their own trends, and not on the more generalised information that may be generated for a region or broader district. Local individual predictions can be more help in making strategic on-farm decisions in a timelier manner.

To date the AFM has seen significant uptake among red meat producers and business operators across the country. Most users have incorporated the trends and graphs to realign major production events such as joining and turn off time to meet localised seasonal conditions or to reflect changing conditions over the past five years.

Cibo Labs has published a webinar recording for producers seeking to start with the AFM. This recording can be found on YouTube: youtube.com/watch?v=ATHLJ73oXwI

Key take home messages

- Producers will be able to see their property (or properties) linked to their Livestock Production Assurance (LPA) account.
- Producers will receive an image for their farm, based on a one-hectare resolution for pasture biomass and ground cover.
- This image will be updated every five days (on a 30-day rolling median).
- Understand the trends across the property pasture base and use them to inform decisions.
- Access is free to MLA members through their myMLA account. However, it is important to ensure myMLA details and MLA membership details are aligned and correct.

Relevant tools and resources

- **Australian Feedbase Monitor tool**

  The Australian Feedbase Monitor is a joint project between Cibo Labs and Meat & Livestock Australia (MLA), funded through the MLA Donor Company. The project is the first to offer red meat producers across Australia with accurate and regular updates of ground cover (%) and Total Standing Dry Matter (TSDM/kg) for every hectare of a property engaged in red meat production.

- **Australian Feedbase Monitor webinar**

  YouTube webinar recording from Cibo Labs for producers seeking to start with the Australian Feedbase Monitor.

- **myMLA homepage login**

  A single login portal for your myMLA account including access to MLA's range of products and services.

- **MLA membership**

  Becoming a member of MLA is easy. If you are a levy-paying producer of cattle, sheep and/or goats all you need to do is complete the membership application form and return it to MLA and the best thing is **it's free.**

Notes

Sheep updates

Optimising reproduction with ewe lamb joining

James Lines

Livestock Advisor, neXtgen Agri

E: james@nextgenagri.com

M: 0447 810 991

About James

James grew up on a mixed farming enterprise in the mid-north of SA and has completed a Bachelor of Agricultural Science at the University of Adelaide. Upon completion of his Agricultural science degree, James was interested in further specialising his livestock breeding and genetics knowledge and skillset, and so in 2022 undertook further study with an Honours degree in a Bachelor of Science (Animal Science).

James' project was to design, transition and implement a within flock genomics-based breeding evaluation system at a Poll Merino stud. This involved collecting and analysing measured and visual trait data, collecting DNA samples and generating genetic parameter estimates for the flock using all the information available.

Now at neXtgen Agri as a Livestock Advisor, James' role involves providing genetics and breeding program advice, and data collection, data management and on-farm support to clients across SA, western Victoria and WA.

Session summary

Ewe lamb joining can increase lifetime productivity of ewes, through increasing the total number of lambs produced by a ewe over her lifetime. Research suggests joining ewes at less than 12 months of age does not appear to impact their longevity and production. This indicates that with the right type of sheep and the right seasonal conditions joining ewe lambs can be a profitable addition to a sheep farming enterprise. The success of ewe lamb joining is determined by several genetic (e.g. high weaning rate and high post-weaning weight genetic traits) and management factors from the time of birth.

Critical live weight targets of 45–50 kilograms and age of eight months at joining will optimise ewe lamb joining rates. Other factors that will increase the success of ewe lamb joining include the use of teaser rams prior to joining and liveweight gain over the joining period of 100–150 grams per day. A liveweight gain in ewe lambs of 100 grams per day has shown to increase reproductive rates by 20%.

To help producers determine if joining ewe lambs is a profitable and achievable goal for a business, an online Ewe Lamb Decision Support Tool (DST) has been created, supported by Murdoch University, Farm Systems Analysis and NeXtgen Agri, and funded by MLA.

The decision support tool models up to 100 million potential on-farm scenarios with complex bioeconomic modelling and a trained neural network to individually produce outcomes and financials around utilising a ewe

lamb joining on a producer's farm. A producer can use the tool, inputting their own farm data including flock structure, rainfall, commodity prices and the decision support tool will produce multiple scenarios, including the economic viability of undertaking a ewe lamb joining.

Some key issues to be aware of include:

- Ewe lamb joining is complex – make sure your management is the best it can be and utilise resources such as the Ewe Lamb Decision Support Tool.
- Heavier and older ewe lambs = more lambs produced.
- Aim for 75% of mature live weight for joining ewe lambs.
- Live weight gain of ewe lambs during joining will result in an increase in reproductive rates.
- Using teaser rams on ewe lambs will optimise joining rates.
- Know the genetic potential of your ewes.

Using the tool

The Ewe Lamb Decision Support Tool uses economic modelling to incorporate these factors to determine the profitability of joining ewe lambs. There are three different ways that you can use this tool. Each of these will be explained in the presentation using an example.

1. Production properties

If you are considering whether it would be worthwhile to start mating ewe lambs, the first tab called 'Production properties' allows you to determine whether it would be more profitable to mate ewe lambs or to invest in increasing reproduction in your two-tooth and adult ewes.

2. Strategic management

If you are currently mating ewe lambs, this tab allows you to assess the profitability of your current mating strategy compared with the optimum management. It provides guidance on the areas that are likely to provide the greatest improvement in profit.

3. Tactical management

The tactical management aspect of the tool is designed to help you decide whether you will mate ewe lambs in a given season. It will help you to optimise the profitability of mating ewe lambs (or not mating ewe lambs, depending on the scenario), taking into account the seasonal conditions.

Be aware that Ewe lamb joining is complex – make sure your management is the best it can be and utilise resources such as the Ewe Lamb Decision Support Tool.

Key take home messages

- Ewe lamb joining can be the right choice, but it is complex, and only appropriate for some sheep types in some years.
- Ewe lamb joining can increase lamb production over a lifetime.
- Utilising the decision support tool (DST) can help producers make informed decisions around ewe lamb joining.

Relevant tools and resources

- **Lifetime Ewe Management**

  A twelve-month course designed for producers to improve skills in managing ewes across their reproductive lifetimes.

- **Towards 90 (T90) program**

  The Towards 90 (T90) program is an adoption program all about sheep reproduction. The T90 program is funded by MLA. It aims to accelerate the adoption of sheep reproduction best-practices. The T90 brand reflects the aspirational targets of achieving 90% and beyond in lamb survival across single and twin-bearing ewes.

- **MLA Lifting Lamb Survival – PGS package**

  A six-month training program for producers to gain greater control over lambing and reproduction outcomes.

- **Unlocking the keys to ewe survival**

  This project sought to quantify the rates and causes of maternal ewe mortality. Mean cumulative ewe mortality over the lambing period was 2.0% in 2020 and 2.5% in 2019. The most common causes of ewe mortality across both years were septicaemia, primary dystocia, and trauma.

- **More lambs, more profit**

  Reproductive efficiency is important to the profitability of all sheep flocks and this booklet brings together a complete set of best practice management strategies to improve sheep reproduction.

- **Winning with weaners**

  This workshop is aimed at lifting the lifetime performance of Merino ewes through the improved management of weaners. Winning with weaners assists participants in understanding the key issues affecting weaner survival, the impact of weaning weight on the survival of weaners to first joining and guides you through developing targets for growth individual to your flock to set up your breeding ewes for lifetime performance.

- **Lambs Alive**

  Lambs Alive is a training program to help lift production rates and yield more profit and better welfare for the animals and you. The focus of the coaching program is on implementing the practical applications that will have the biggest impact on your farm.

- **Module 10: Wean more lambs – Making More from Sheep**

  This module provides the framework and guidelines to set in place all the important management steps to improve flock reproduction rates and lamb survival to weaning.

Notes

Getting started with and smart implementation of eID

Chris Lymn
Owner Manager, Lymn Farms

E: lymnfarms@gmail.com

M: 0427 802 154

Twitter handle: @lymnfarms

Instagram: @lymnfarms

About Chris

Chris grew up on the family farm and is now the owner manager of Lymn Farms, along with his wife Leanne and children Joey, Elsey and Amber. Their properties are located around Wudinna, Yaninee and Minnipa on Upper Eyre Peninsula, SA. Chris studied at a tertiary level achieving a Bachelor of Agriculture from Adelaide University.

The property comprises of 4,000 hectares of a dune swale land type in the 300–325mm rainfall zone. Management involves all aspects of cropping and sheep enterprises. A ley farming system is used, cropping mainly cereals e.g., wheat and barley with a medic-based legume pasture in the rotation. The sheep enterprise is a self-replacing Merino flock of 1,500 adult ewes. The emphasis is placed on growing dual purpose sheep with elite wool and the capacity to grow an export carcass in a timely manner.

Individual animal identification started some time ago using numbered tags. This progressed over time and today all age groups of ewes have radio-frequency identification (RFID or eID) tags. Individual identification is used to inform lifetime ewe production and assist in improving genetic progress of the flock.

Session summary

About eID tags

Electronic identification or eID is an electronic device with a microchip, generally contained in an ear tag. The tags have a unique number that is linked to the individual animal, and it stores and transmits data related to that animal. The main purpose of these tags is to provide each animal with a unique identifier so that they can be tracked throughout their lifetime.

Mandatory identification

Australia's State and Federal Governments are working toward mandatory implementation of a national electronic identification system for sheep and goats by 1 January 2025. This will enable tracing of individual sheep and goats through the National Livestock Identification System (NLIS) database.

Why did we implement eID on Lymn Farms?

Previous experience with individually numbered tags that were time consuming and had poor accuracy led us to eID tags. The theory was that a good animal eats the same as a poor animal, so there was benefit in identifying and keeping the good ones.

There was also a realisation that putting greater selection pressure on the ram side, i.e. buying better and more expensive rams wasn't worthwhile without higher selection pressure on the ewe side of the equation.

Genetics X environment = Phenotype (what we see)

Both the environment and genetics can be influenced, it's called sheep management. Some of the environmental factors we can manage include the food the sheep eat, the water they drink, the shade they have in summer and the timing of important events in their lives.

Genetics are made up of ram and ewe genes. We can manage what rams are bought and which ewes we keep in the flock. The question to answer is which ewes do we keep? It is hard to tell when they are running up the classing race! You might select the big ones as there could be a natural bias towards them.

Measuring to manage and individual animal recording allows careful selection of future breeders.

How we use eID

At Lymn Farms, four variables are currently measured using eID. Both hogget body weight and hogget fleece weight are measured at shearing. Fibre diameter and litter size (i.e., is the hogget a twin or a single?) are also recorded. Some manual entry of wool or animal traits is also captured at shearing. For example, if a wrinkly thick skinned 'fly trap' or a yellow wool type animal comes over the board a note is made on the barcode printed slip and the animal is culled at a later date. The information collected for each hogget is forwarded to a third party, currently Ian Bradtke from Lazerline, who collates the data. An index is used to rank the hoggets and the ranking informs which hoggets are kept on as future breeders. The ranking of the animal follows the animal throughout its lifetime informing decisions at any time.

Tips and tricks

- Be wary of comparing animals without careful thought about environmental factors that have an influence. Animals need the same treatment otherwise data is skewed, and the wrong animals are selected or culled. For example, measuring fleece weights on older ewes where the pregnancy status is unknown means useless data.
- Be wary of measuring too few variables. Measuring body weight and condition without fleece weight and micron will move genetics in an unintended direction. For example, we measured body weight, fleece weight and micron and were successful but didn't know the pregnancy status of the ewes. The result was unintentionally selecting larger singles and culling fertile smaller productive animals, thereby reducing lambing percentages.
- Be wary of being too numbers focused. It is fine to select on good data but there isn't a data set for everything! Producers and ram breeders need to keep a careful eye on visual traits that can have impacts on productivity. Feet, mouths, testicles, wool style and coverage still need checking.
- Use an index related to your breeding objectives to weight the importance of different traits to rank hoggets and check outliers because indexes can be misleading. A 24 micron, 10kg fleece, 100kg animal might be high ranking, but it has no place eating feed on Lymn Farms.

Practically speaking

- Make sure barcode printers, RFID wands, weigh heads and barcode readers are all charged and operational. Shearers are unlikely to cooperate if data collection holds them up. Keeping shearing relatively 'the same' while collecting data is important, it needs to happen around the shearers

without their intervention to make sure it happens. At Lymn Farms we have the weigh bars for fleece weight measurement under the table meaning wool handlers don't have to put the fleece down. Just a quick 'hands off' until the weigh head beeps is all that is required.

- Be ready to re-tag. Shearers cut a fair few tags off! Keep spares at the ready. A small percentage of tags are faulty. Retention especially when using grain feeders is less than perfect.

Future – our farm and industry ideas

- Lambs bought in and fed could be monitored based on growth rates hence informing future purchases.
- Currently wether lambs haven't been tagged with eID at Lymn Farms, as they are not on-farm long and don't contribute to the genetic pool. Future use of eID tags in wethers could be utilised to remove underperforming animals from the feedlot. Shy feeders and poor doers are better removed from the feedlot situation early and eID would allow earlier identification of these animals.
- Utilising 'lifetime ewe' data could mean that after several years a few high performing individuals are retained in the flock for longer to maximise their genetic impact on the flock. In addition, the lifetime ewe information could enable elite animals to be kept in a major flock rebuild phase or when flock reduction if required.
- On-farm trials could test new ideas, i.e. different products or practices to substantiate claims and see if they work 'on your farm'. Different groups of genetically similar animals in the same environment could be treated with different things with data collected as part of the general running of the sheep. Relatively pain free results can be obtained, a bit like a test strip or nil strip in the cropping game.
- When eID tags become mandatory, it would be good to see better meat processor feedback to the producer on an individual animal basis. This could allow for data sets regarding meat eating quality and MSA style meat rankings to be incorporated into breeding objectives. Sires that underperform in a particular area could be identified.

Keep it real

Ram selection plays an important role in genetic gain, particularly for the very high performing rams. Ewe selection has a lesser influence. Major advances in animal health and nutrition along with environment or 'seasonal' impacts are likely to impact on production to a far greater level than which ewes are kept on as future breeders. It's a small part of the equation but why not speed up genetic gain!

Key take home messages

- eID is a tool to enable accurate and timely data collection, don't be fooled that any data is good data. Ensure comparisons are fair and will not bias any animals unfairly.
- Keep the shearers on your side, make data collection work around them without holding them up.
- Potential gains on the ewe side of the genetic equation are small but worthwhile.

Relevant tools and resources

- **Elevate your flock with eID**

  Learn more about the Agriculture Victoria ‘eID Enabled’ project (co-funded by the MLA Donor Company) and how eID can take your livestock business to the next level.

- **Maximising the value of eID for sheep producers**

  Electronic identification of sheep can improve the efficiency of flock management by making individual animal data collection and tracking easier and more accurate.

  This project consisted of a desktop study to model a range of common breeding management systems used by commercial sheepmeat enterprises to highlight the long-term cost benefits of adopting electronic tags (eID).

  The average cost benefit was a $4.12 return for every dollar invested by using eID to improve breeding and selection decisions across Merino and crossbred/composite type enterprises.

- **Scanning for success with eID**

  Gain insights on how eID can be used to make informed flock management decisions through pregnancy status data collection.

- **Should I invest in sheep eID?**

  Nathan Scott, industry consultant, shares his list of five important considerations for assessing your eID needs.

Notes

MLA adoption program update

BredWell FedWell – breeding and feeding to maximise profit

Dr Sarita Guy

MLA Project Manager – Genetics Adoption

E: sguy@mla.com.au

M: 0407 280 074

About Sarita

Dr Sarita Guy is MLA's project manager for genetics adoption, based in Armidale NSW. She has a real interest in livestock breeding and genetics since her first experience with agriculture at the age of 12. In addition to her role at MLA, she is developing small scale poultry and sheep breeding enterprises.

Prior to joining MLA, Sarita was a quantitative geneticist at the Animal Genetics and Breeding Unit. Key areas of her work included development of the Sheep Genetics Data Quality Score, and breeding for carcase eating quality through consumer sensory testing and carcase yield through objective measurement technologies. She has been invited to speak at Australian and international scientific forums and has also spent considerable time working with red meat processors to enhance carcase feedback to producers.

Sarita is passionate about supporting producers in the use of genetics as one of the tools to produce productive and profitable livestock. Today she will be speaking about one of MLA's introductory workshops to enable breeding and feeding well, the BredWell FedWell workshop.

Session summary

Breeding and feeding to maximise profit

Genetic tools, such as Estimated Breeding Values (EBVs) and Australian Sheep Breeding Values (ASBVs), allow you to see 'under the hood' of an animal. Combined with visual assessment of physical and structural soundness, these predictions of the genetics passed onto progeny will help with ram and bull purchasing decisions.

Your genetic investment can be maximised by feeding effectively across the production cycle. Managing the nutritional requirements of your animals requires understanding of your feed supply and demand cycle, and how to monitor body condition score.

Success in breeding and feeding are inextricably linked. MLA's BredWell FedWell workshop provides you with support to develop a genetics and nutrition plan suited to your enterprise, so you can maximise your profit.

The BredWell FedWell (BWFW) workshop

BWFW is a practical, one-day introductory workshop on how productivity and profitability can be improved through good breeding and feeding over the livestock production cycle, with a specific focus on profit drivers.

BWFW has demonstrated real impact. Between 2011 and 2020, BWFW has delivered $17.2m in total net benefits to participating producers (calculated as net present value of adoption to 2045, discounted at 5% annually).

Participation in BWFW workshops resulted in an average annual net benefit of $2.48/ewe joined for sheep producers, and $2.98/cow mated for beef producers.

After 10 years of successful delivery, BWFW has been redeveloped to reflect the evolving best practice genetics and nutrition management. The structure of the workshop will utilise the breeding and feeding production cycle, which covers pre-joining and joining, pregnancy, calving/lambing, weaning and beyond, and selection. Each 'wedge' in the cycle represents a major decision point, where consideration of both breeding (genetics) and feeding (nutrition) is required.

What will I learn at BWFW?

Workshops are hosted on-farm and aimed to improve your knowledge and skills so you can:

- develop a customised breeding plan for your livestock enterprise aligned to your profit drivers
- identify sires and select animals that help you meet your objectives
- learn about feeding animals well to achieve your objective and maximise your genetic investment.

Key take home messages

- **Breed well** by using genetic tools, which are predictions of what genetics are passed onto an animal's progeny. Combined with visual assessment of physical and structural soundness, genetic tools help with ram and bull purchasing decisions.
- **Feed well** by understanding your feed supply and demand, and by monitoring the condition of animals. This will help to maximise your genetic investment.
- **Attend MLA's refreshed BredWell FedWell workshop**, available from April 2023. This practical, one-day introductory workshop has demonstrated real financial impact for attendees. You will be supported to develop a genetics and nutrition plan suited to your enterprise, so you can maximise your profit.

Get involved!

- ➔ **Attend** a sheep, or southern beef workshop.
- ➔ **Host** a workshop on your property.
- ➔ **Deliver** a workshop.

mla.com.au/bredwellfedwell

Relevant tools and resources

- **MLA Genetics Hub**

  The MLA Genetics Hub contains useful resources and information for better understanding breeding values for tropical and temperate cattle, prime lambs, and Merinos.

- **MLA feedbase hubs**

  These hubs bring together the latest R&D on soil, pasture and weed management to increase pasture production, quality and persistence.

Notes

Virtual farm tour

Goldmine Hill Farms

Kerran (Gus) Glover

Owner Manager, Goldmine Hill Farms, Lock

E: gusandmel@icloud.com

M: 0428 894 025

Twitter: @GussyGlover

About Kerran

Since leaving school in 1990 Kerran has been farming, initially with his parents, sister and brother-in-law. In 1998 that partnership dissolved and since then Kerran and wife Melanie have managed their own business.

Kerran has been actively involved with Grain and Graze, hosting field days and pasture trial sites and is currently part of the Eyre Peninsula (EP) soil probe network, Resilient EP project and part of the Mallee Sheep project, also on EP.

Proud father to Britnee, Macualay and Cameron he looks forward to providing an opportunity to the next generation if they chose to be involved in the agricultural Industry. Time at the beach, fishing and relaxing with family and friends is treasured.

Kerran would like to acknowledge his parents Robin and Valda, as without them and the opportunity they provided, he wouldn't be doing what he is today. Farming is in his blood, and he loves it.

Session summary

The virtual farm tour film package provides an insight into the Goldmine Hill Farms operation as it is today; this has evolved over time.

In 2012 Goldmine Hill Farms started an expansion phase, with an additional four properties purchased over an eight-year period. This necessitated major investments in road works, centralised laneways and watering systems which linked four of the five properties together. The result is efficient movement of livestock and machinery. Technology is used to help monitor and manage the properties, with all water meters monitored remotely and rainfall gauges, temperature and weather stations that are easily tracked online or via text message.

During this expansion period there were a few challenging years, and over this time the farming system and business model evolved. It needed to be well suited to the climate and varying soil types that are managed, be profitable in the dry seasons and be able to facilitate continued growth. This meant maintaining both cropping and livestock enterprises that complement each other, while at the same time protecting the natural resource base. A lower risk resilient farming system was targeted.

The importance of a good network and independent reviews meant being able to stay on track through this period. Involvement in farming systems groups and projects was invaluable as well as input from both a farm and an agribusiness consultant. An external view that challenged thinking added value and annual reviews proved that the business model could hold its own.

Goldmine Hill Farms is now a mixed farming enterprise of 8,000ha, 6,500ha being arable, and 1,500ha of native scrub mainly fenced off for conservation. Cropping consists of 4,000ha of wheat, barley and canola and 500ha of contracting. There is 300–400ha of vetch-barley, vetch-canola, and vetch-tillage radish sown annually, with the remainder being self-regenerating medic pasture. These underpin both the feedbase for livestock and the majority of nitrogen requirements for the cropping phase.

The sheep enterprise consists of 1,500 self-replacing Merino ewes with shearing happening six monthly. The first stage of a containment yard build occurred in 2018 with the second phase a year later. This increased capacity to hold the entire flock, including lambs if needed. The containment yards have been of great benefit to the business, allowing for far greater flexibility to manage ground cover and protect land and some fragile sandy soils from erosion (mainly in the summer and early autumn). An added benefit is being able to rest pastures as they establish early in the season.

For the past three years ewes have been joined in the containment yards at the end of November.

In 2022, two auto feeders were installed in the containment feeding area, allowing four pens to be run as a feedlot. With the capacity to run 2,000 lambs at any one time, this provides flexibility in the markets for lambs that can be targeted adding more depth and diversity to the business.

A new four stand shearing shed has just been completed and the hope is for it to be operational for its first shearing in February 2023. Other associated infrastructure improvements include a lunch room, shower and toilet and covered yards, all to be operational in 2023. A new yard design has been signed off and is on track for installation in 2024. Features will include three separate workstations with a draft, handler and eID auto drafter and bulk handler. It is hoped that this investment will provide an excellent facility for everyone to work in and make it easier to retain and attract staff and contractors. Productivity and efficiency improvements are also expected. In the interim semi-permanent yards will be relocated from the old shed.

Ewes are pregnancy scanned to identify those carrying singles and multiples and are then run separately in different sized mobs. Multiples are given greater access to nutrition using lick feeders during the lambing period which has resulted in improved lambing percentages. This year eID tags have been used to track these singles and multiples. Over time other traits will be tracked with the aim of improving wool production, growth rates and lamb production. Breech wrinkle and dag score will also be considered, given a recent move into mulse free. There is much to learn in this space, but the use of technology seems a logical approach to better track performance and improve productivity.

Key take home messages

- Livestock and cropping enterprises that complement each other are key components of a profitable, low risk and resilient farming system for Goldmine Hill Farms.
- Medic pastures and vetch based mixed species stands (i.e. vetch-barley, vetch-canola, and vetch-tillage radish) are excellent feed sources for sheep and also provide an important nitrogen source for crops.

- Removing sheep from paddocks into containment feeding yards provides flexibility. Managing ground cover protects fragile sandy soils from erosion and pastures can be rested as they establish early in the season.
- Continuous improvement happens through learning about and then adopting new ideas and technologies. Insights from others outside the business, and conducting a review after each season, are valuable.
- Investing in infrastructure upgrades results in productivity and efficiency improvements and is important in attracting and retaining staff and contractors.

Relevant tools and resources

- **Module 10: Wean more lambs – Making More from Sheep**

  This module provides the framework and guidelines to put in place the important management steps to improve flock reproduction rates and lamb survival to weaning.

- **Lifetime Ewe Management**

  A twelve-month course designed for producers to improve skills in managing ewes across their reproductive lifetimes.

  The course is delivered in small groups of five to seven sheep producers that meet six times per year with a professional facilitator. During these hands-on sessions, the group visits each participating farm and learn skills in condition scoring, pasture assessment and best practice ewe and lamb management to increase reproduction efficiency and wool production, mainly through reducing ewe and lamb mortality.

  The course focuses on practice change in key areas:
  - Weaning and preparing ewes for next year's joining.
  - When and what to feed ewes to optimise ewe condition at joining.
  - Linking ewe condition at joining with lambing potential.
  - Managing nutrition mid-pregnancy for single and twin lamb survival.
  - Managing nutrition during late pregnancy to optimise lamb survival and future wool production of progeny.
  - The economics of different feeding strategies.

- **SheepConnect SA**

  A partnership between Australian Wool Innovation Limited (AWI), Primary Industries and Regions SA, and the SA Sheep Industry Fund, SheepConnect SA supports the development of the sheep industry in SA.

- **Managing breeding ewes in containment areas**

  A producer guide on the key considerations and decisions required for managing ewes in containment areas.

- **Forage crops**

  MLA website highlighting forage crop information including selection, establishment and management.

- **Tech Talks – Getting it right: cattle and sheep yard design**

  This episode of Tech Talks features Ben White from Kondinin Group who discusses investing in livestock infrastructure, incorporating handling options and cattle crush considerations, and shares case studies and design examples of livestock yards.

Notes

Wrap-up

Taking the next steps – Producer panel Q&A wrapping up the key messages and practical implementation

Facilitator

John Francis

Director and consultant, Agrista

E: john@agrista.com.au

M: 0427 259 005

Producer panelists

Craig Kelsh

Managing Director, Venus Plains

E: kelsh04@bigpond.com

M: 0427 683 539

Chris Lymn
Owner Manager, Lymn Farms

E: lymnfarms@gmail.com

M: 0427 802 154

Twitter handle: @lymnfarms

Instagram: @lymnfarms

Kerran (Gus) Glover

Owner Manager, Goldmine Hill Farms, Lock

E: gusandmel@icloud.com

M: 0428 894 025

Twitter: @GussyGlover

Session summary

The objective of the panel session is to highlight key messages and tie together what the producers have heard throughout the day from all the sessions, including audience input. It will explore further the practical aspects of integrating cropping and livestock enterprises on Eyre Peninsula, how these producers approach it in their operations and any system changes they may consider in the future.

Notes

My take home messages and actions

Reflect on the presentations delivered at the MeatUp Forum. For those of relevance to you, note the session title, your key messages, and actions you can take to implement ideas.

Session	Action – things I could do to implement ideas

Producer Demonstration Sites: quick start guide

Producer Demonstration Sites (PDS) are on-farm projects run by producer groups who want to validate the benefits of incorporating research findings into their businesses.

By supporting producers to use best practice management techniques and technologies that improve business performance, the PDS program aims to:

- increase the rate of R&D adoption
- encourage producers to pursue new skills and knowledge
- foster collaboration within the red meat industry.

MLA calls for preliminary applications for PDS projects that will help to improve the profitability, productivity and sustainability of beef and sheepmeat enterprises on an annual basis.

What can I demonstrate?

Your PDS producer group could get involved in demonstrating practices that support:

- increased lamb survival
- control of regionally important weeds
- improved induction to drought rations, or
- remote measurement of carrying capacity.

What do I need to do?

The practice you plan to demonstrate must be trialled on at least:

3 different properties

with 10 core producers

with a larger producer network keeping track of the project

Other considerations

The project duration should be a minimum of two years and a maximum of six years

Ensure your project includes communication activities to extend key learnings beyond the core group

Implement monitoring, evaluation and reporting processes to demonstrate producer engagement, practice change and benefit to the Australian red meat industry

What are the funding opportunities?

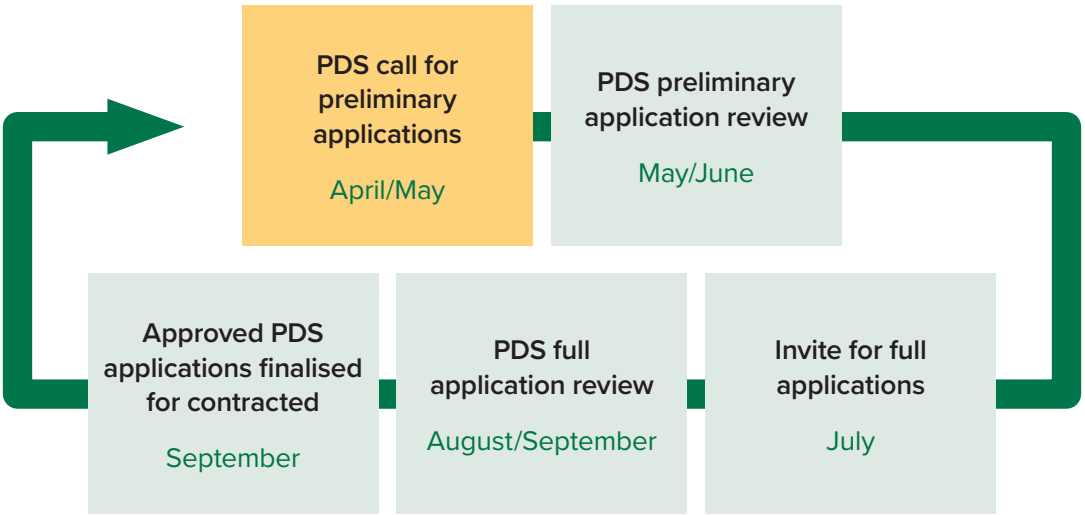
There are two primary funding streams that aim to increase the rate of adoption of on-farm management practices and technologies in PDS projects: levy and co-contributor.

What's the difference?

Levy	Co-contributor
Producer-driven projects to address regional PDS priorities **set by the Regional Research Advisory Councils (RACs)**/Regional Committees	Producer-driven projects aligned with **industry** priorities/targets
Offers producer groups the opportunity to receive funding of **up to $25,000/year** for the life of the project	Offers producer groups the opportunity to receive funding of **up to $50,000/year** for the life of the project
100% funded by producer levies	Funding consists of: **50% levies, 25% producer cash contribution, 25% MDC** (matching the producer contribution), **8% access fee** (of the total project value – 25% producer, 75% MLA/MDC)

When can I apply?

Preliminary applications for the PDS program will open in April annually.
See below for a full overview of the application process.



Want to know more?

For more information contact:

Alana McEwan	MLA Project Manager, Productivity and Market Insights	(07) 3620 5227 | amcewan@mla.com.au
Russell Pattinson	PDS Coordinator	0419 872 684 | miracledog@bigpond.com
Maria Thompson	PDS Coordinator	0411 961 545 | maria@agstarprojects.com.au

Visit mla.com.au/pds

CN30 | Carbon Neutral 2030

Your questions answered

Want to know more about how the Australian red meat industry will become carbon neutral by 2030? Here are the answers to some of the frequently asked questions MLA receives from producers, industry stakeholders and the wider community.

When was the target set?

In 2017, MLA committed to support the Red Meat Advisory Council's goal to achieve net zero emissions by 2030.

Will the CN30 target restrict productivity?

No. The CN30 target and productivity are complimentary goals. While the target is based on a herd size cap (28 million cattle, 75 million sheep) the goal can accommodate herd and flock increases through increased carbon efficiency in production.

What progress has been made to date?

The red meat sector has reduced its emissions by 59.05% from 2005 baseline levels (2022).

Why is the baseline year for the target 2005?

Emissions are compared against the baseline year of 2005 as this is the year that Australia committed to a 26–28% reduction by 2030 on a 2005 baseline under the Paris Agreement.

Will all farms have to become carbon neutral?

No, the industry goal can be achieved without every individual producer becoming carbon neutral. However, it will require significant adoption of carbon efficient practices by a large majority of industry to achieve this collective goal.

Does carbon neutrality only refer to carbon? What about other greenhouse gases like methane?

The term carbon neutral encompasses the 3 key greenhouse gases, carbon dioxide (CO_2), nitrous oxide (N_2O) and methane (CH_4).

How can I lower emissions on-farm while maintaining productivity?

Focus on improving the emissions intensity of your business. Emissions intensity refers to the amount of emissions produced per kilogram of liveweight. The more efficiently we can produce meat, the better our intensity. Management decisions that improve reproduction rate, improve rate of weight gain or decrease time to turn off can all improve the emissions intensity per kilogram of liveweight of your operation, which is great for CN30 and productivity.

What carbon farming practices are eligible to earn carbon credits?

Not all methods that have a positive impact on emissions and productivity are eligible to generate carbon credits. Under the Carbon Farming Initiative, only methods approved by the Emissions Reduction Fund (ERF) and the Clean Energy Regulator are eligible to earn ACCUs. You can view approved methods online at the ERF website. A 5-minute survey via CSIRO's LOOC-C tool can also guide you on the most suitable methods for your business and region. Some of the most common project methods for Carbon Farming projects in livestock are revegetation, avoided clearing, soil carbon improvement and herd management.

What is a carbon credit?

A carbon credit represents 1 tonne of carbon dioxide equivalent abated or stored. In Australia, the financial product for carbon is an Australian Carbon Credit Unit (ACCU) which is issued by the Clean Energy Regulator through the Emissions Reduction Scheme.

What is carbon off-setting?

Carbon offsets refer to the purchase of carbon credits to compensate for emissions a business produces. Landholders and producers can generate credits through recognised carbon farming projects to sell as offsets to third parties who do not have the capacity to reduce emissions within their business - like airlines or offices. Producers may also purchase offsets to achieve a carbon neutral status for their own enterprise or product.

What is carbon in-setting?

Carbon insetting refers to credits generated by a carbon farming project which are retained or "inset" against the business's carbon baseline, to cover its own emissions. Insetting is a strategy for producers to lower or neutralise their own carbon footprint with credits they generate on-farm. It may be important to maintain market access with trade partners or participate in a low carbon or carbon neutral product line.

Where should I start?

Complete a carbon account on your own or with an independent consultant to see where your emissions are coming from on farm. The Sheep-Beef Greenhouse Gas Calculator (SB-GAF) Tool and manual are free online and can assist you to put your own farm data into the model.

I want to launch a registered carbon farming project. Who do I talk to?

MLA does not provide commercial advice about carbon development companies, but we can provide high level suggestions on what to consider. For example:

- Complete a carbon account on your own or with an independent consultant, for objective advice.
- Consider your comfort lodging a project independently.
- If you choose to have a third party (aggregator) lodge on your behalf, do your due diligence. Have any contracts reviewed by a trusted legal advisor.
- Check that the company is a signatory to the Carbon Market Institute Code of Conduct.
- Understand the implications of the project and what they mean for your property, cash flow or decision autonomy over the long term.

paraboss

Integrated parasite management for **sheep, goats and cattle**

ParaBoss is the industry's go-to resource for parasite management information, bringing together the latest R&D and practical resources all in one place.

This online resource offers regionalised and seasonal tactics to reduce the impact of flies, ticks, worms and lice in any sheep, goat or beef system.

Find information on the management, treatment and biology of parasites and the latest advice on preventing chemical resistance.

Tried and tested by producers, see how ParaBoss can benefit your business.

Visit **paraboss.com.au.**

flyboss wormboss liceboss tickboss

ParaBoss has been developed and funded by Meat and Livestock Australia, Australian Wool Innovation, Sheep CRC, University of New England, and Queensland Department of Agriculture and Fisheries, with technical guidance and endorsement by sheep, goat and cattle parasite technical experts.

paraboss.com.au

awi mla MEAT & LIVESTOCK AUSTRALIA une University of New England Queensland Government animalhealth AUSTRALIA

Learn about your responsibilities as an employer.

Providing a great workplace and managing your employees is a key part of running a successful business. People in Agriculture provides you with the latest, industry specific employment information through tools, tips and examples, wherever and whenever you need it.

People in Agriculture

YOUR EMPLOYMENT INFORMATION GATEWAY

www.peopleinag.com.au

BredWell FedWell

mla MEAT & LIVESTOCK AUSTRALIA

An introduction to

Breeding and feeding to maximise profit

On the back of a decade of success, the BredWell FedWell workshops have been redeveloped to reflect evolving best practice genetics and nutrition management.

- Develop a customised breeding plan for your livestock enterprise aligned to your profit drivers
- Identify sires and select animals that help you meet your objectives
- Learn about feeding animals well to achieve your objective and maximise your genetic investment

Informative
Presentations and discussions with deliverers and peers

Interactive
Practical and written activities hosted on-farm

Individualised
Learning outcomes you can apply in your own enterprise

So far, BWFW workshops have delivered $17.2m* in total net benefits to participating producers

1.9M
cattle influenced by the BWFW workshop

$2.98
net benefit per cow mated

639k
breeding females

19.6M
sheep influenced by the BWFW workshop

$2.48
net benefit per ewe joined

12.7M
breeding ewes

*Calculated as net present value of adoption to 2045, discounted at 5% annually.

New workshops are available for all sheep types, southern cattle and northern cattle production systems. Register your interest to participate or host a workshop.

mla.com.au/bredwellfedwell

Pasture Principles

Building skills in pasture management

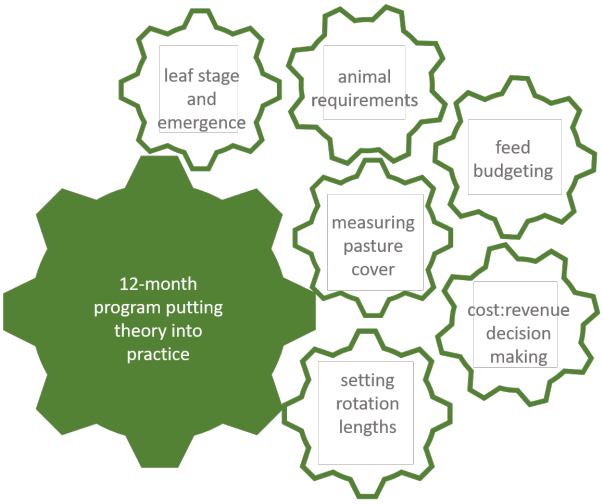
A 12-month program designed to build livestock producer's skills in pasture management, delivered across southern Australia in 2023.

Pasture management is the fundamental skill that determines the profitability of pasture based grazing systems as the key driver of stocking rate.

Pasture Principles developed by Pinion Advisory, provides a group training environment for farmers to learn the guiding principles of pasture management that will allow them to work confidently regardless of the season or system.

The program is suitable for producers involved in the sheep, beef and dairy industries. Groups are delivered across New South Wales, Victoria, South Australia and Tasmania.

Pasture Principles is a 7-session program including theory and on-farm coaching sessions delivered within a 12-month period, with sessions aligned with key seasonal pasture management timeframes.



"Our entire team undertook the Pasture Principles program. From this we implemented a new grazing management plan, only possible with the new skills we obtained from Pasture Principles. Pasture Principles provided us with one of the most critical turning points in our business productivity and profitability in the last decade." *Frank Archer, Landfall Angus.*

Pasture Principles has been attended by **>300** participants from **>100** businesses

out of 10, they rated the program **9.4** for content **9.2** for value

Want to participate in Pasture Principles?

Delivery locations will be determined based on interest. The commercial cost for this course is $2500 ex GST per farm business. However, with the support of MLA's Profitable Grazing Systems program, this course is discounted for producers.

$1750 ex GST	per farm business *(maximum of three people, must be an owner, partner or full-time employee of the participating farm business)*
$800 ex GST	per additional person from a participating farm business
$2500 ex GST	per person from an agribusiness*

**For more information on agribusiness training packages, please contact us*

For more information on groups in 2023 please contact Pinion Advisory: pastureprinciples@pinionadvisory.com or T: 1300 746 466

Profitable Grazing Systems your pathway to success

mla MEAT & LIVESTOCK AUSTRALIA

pinion ADVISORY

pinion ADVISORY

mla MEAT & LIVESTOCK AUSTRALIA EDGE NETWORK

Business EDGE

Know your business, grow your business

A two-day workshop to enhance your financial management and improve business efficiency and profitability. You will also develop strategies to determine if your business can fund future growth, how to reduce debt and how to plan for retirement and succession.

Events near you

For more information about EDGE:
mla.com.au/edge-network

Clare	Pt Lincoln	Naracoorte	Adelaide
3–4 April	28–29 June	18–19 July	20–21 September

To register contact Royce Pitchford **M:** 0429 305 915 **E:** rpitchford@pinionadvisory.com

Business EDGE has been developed by Meat & Livestock Australia

Better your business

MEAT & LIVESTOCK AUSTRALIA

MLA offers red meat producers a range of training opportunities, resources and publications.

TRAINING OPPORTUNITIES

Profitable Grazing Systems is a group-based delivery program designed to deliver training and coaching over several months and up to a year to improve producer skills and knowledge. The aim is to achieve practice change on-farm in the areas of people, business, reproduction and genetics, value chain and feedbase.

Profitable Grazing Systems
mla.com.au/pgs

Producer Demonstration Sites are on-farm projects run by producer groups who want to demonstrate findings from known research into their local farming system. MLA calls for Producer Demonstration Site applications that will help to improve the profitability, productivity and sustainability of red meat enterprises every April.

Producer Demonstration Site
mla.com.au/pds

EDGE*network*® workshops offer practical knowledge and skills on topics such as breeding and genetics, business management, nutrition, grazing and land management. Workshops range from one to three days.

mla MEAT & LIVESTOCK AUSTRALIA EDGE NETWORK
mla.com.au/edgenetwork

BredWell FedWell are practical one-day workshops designed to teach producers the key benefits of superior genetics and feed management for improved flock and herd performance.

bredwell fedwell
mla.com.au/bredwellfedwell

RESOURCES

The toolbox, MLA's free eLearning platform, builds knowledge in the areas of animal welfare, husbandry, feedbase and genetics. Packages take between 15 to 20 minutes to complete online, allowing users to learn at their own pace.

The toolbox
elearning.mla.com.au

myMLA is a customised online dashboard that provides news, weather, events and R&D tools relevant to you, as well as a single sign-on feature for integrity systems.

my mla MEAT & LIVESTOCK AUSTRALIA
mla.com.au/aboutmymla

Seasonal hubs provide resources, tips and tools organised by season to make it easy to find relevant information to support your business decisions.

mla.com.au/seasonal-hubs

Feedbase hubs provide tips and tools on soils, pastures, legumes and weed management alongside the latest R&D to increase pasture production, quality and persistence.

mla.com.au/feedbase-hub

PUBLICATIONS

MLA's *Feedback magazine* signposts producers to practical on-farm information and showcases how MLA is investing levies in research, development and marketing activities.

mla.com.au/feedback

Keep informed about the latest red meat and livestock industry news, market information, events, research and marketing with MLA's suite of e-newsletters. Mastheads include:
The Weekly • Integrity Matters • Goats on the Move • The Quarterly Feed • Global Markets Update • The Advisor.

mla.com.au/enews

Become an MLA member today

MLA membership is **free** to levy-paying producers of grass or grainfed cattle, sheep, lambs or goats

To become an MLA member call **1800 023 100**, visit **mla.com.au/membership** or scan the QR code.

mla.com.au/meatup