



meatup FORUM

For the latest in red meat R&D
Naracoorte, South Australia

MLA Welcome and market update

Dr. Michael Laurence
Meat & Livestock Australia

Overview

1. Market update
2. How to get involved with MLA RD&A
3. Updates in Animal Wellbeing

Overview

1. Market update

- 2. How to get involved with MLA RD&A
- 3. MLA role in live export transition



▲ POLICY AND STRATEGY ▲

▼ SERVICE PROVIDERS ▼



Integrity Systems
red meat customer assurance

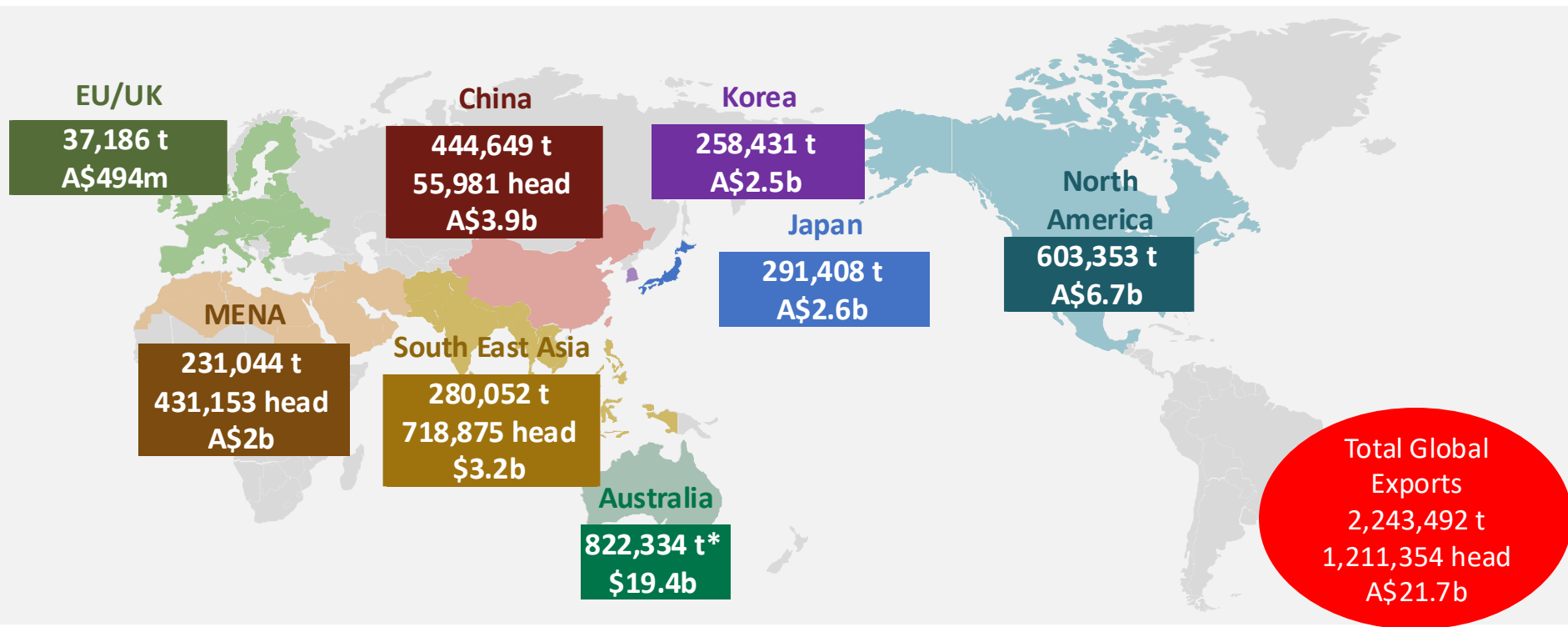
meatup
FORUM



What MLA can and can't do

- ☒ Provide research, development, adoption and marketing services for industry.
- ☒ Fund and oversee NVDs, LPA, NLIS (through Integrity Systems Company).
- ☒ Provide **research** that can support the development of policy positions.
- ☒ Collaborate widely, and with partner RDCs – AMPC and LiveCorp.
- ☒ Provide detailed and comprehensive market information to industry.
- ☒ Provide support to PICs with coordinating stakeholder engagement initiatives.
- ☐ Become involved in policy or agri-political issues.
- ☐ Take direction from state farming organisations.
- ☐ Set industry policy or policy priorities or write policy submissions.
- ☐ Advocate or lobby government representatives.
- ☐ Influence processing capacity or labour supply issues.
- ☐ Forecast saleyard and retail prices.

Australia exports red meat and livestock to over 100 countries



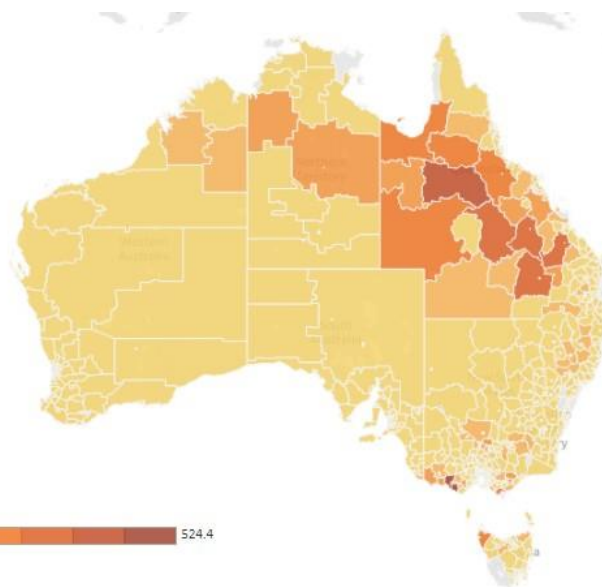
Cattle industry overview

Cattle and calves, Gross value (\$m)

National

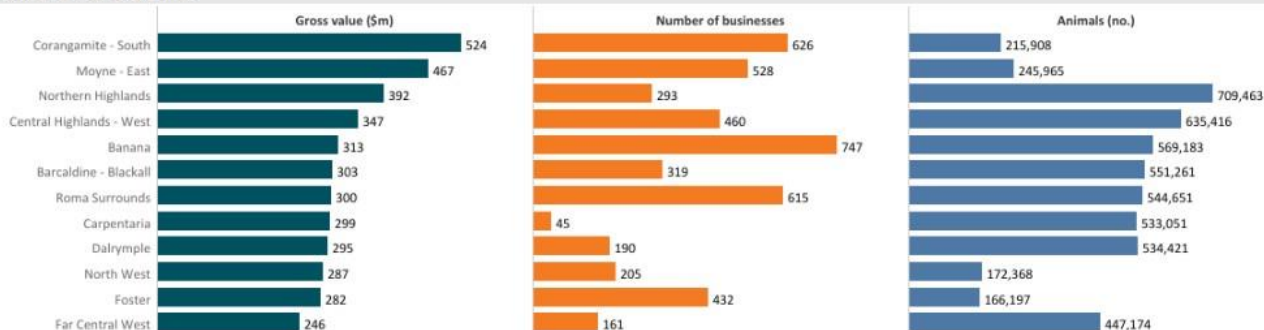
18,153 \$m

States and territories



© 2022 Mapbox © OpenStreetMap

Top SA2 regions for Cattle and calves



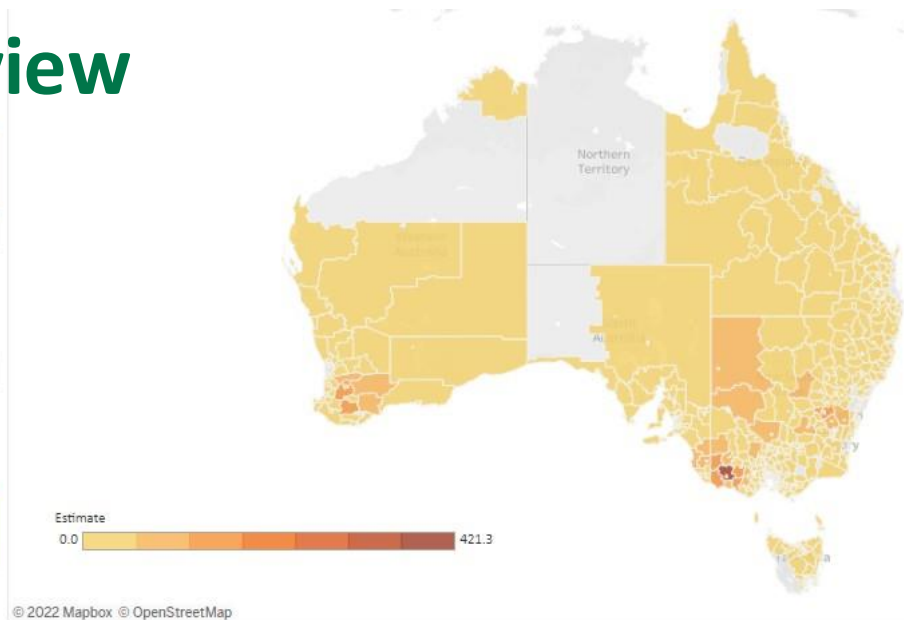
Sheep industry overview

Sheep and lambs, Gross value (\$m)

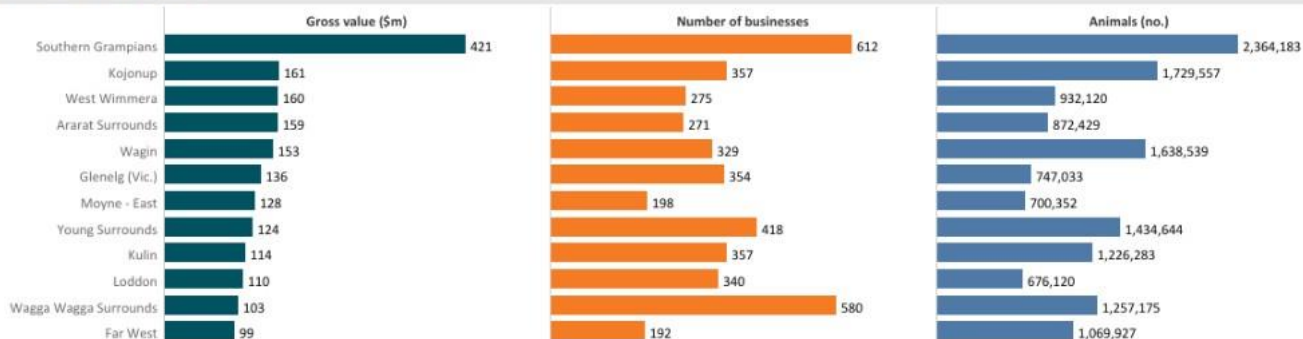
National

6,977 \$m

States and territories



Top SA2 regions for Sheep and lambs



Big opportunities ahead in trade agreements



Australia-UK FTA

	Beef	Sheep/ goat
Pre-FTA	3.7kt	13.3kt
Year 1	35kt	25kt
Year 10	110kt	75kt



Australia-India ECTA

- 30% tariff on sheep meat eliminated
- Treaty-level interim outcome with more comprehensive FTA discussions continuing



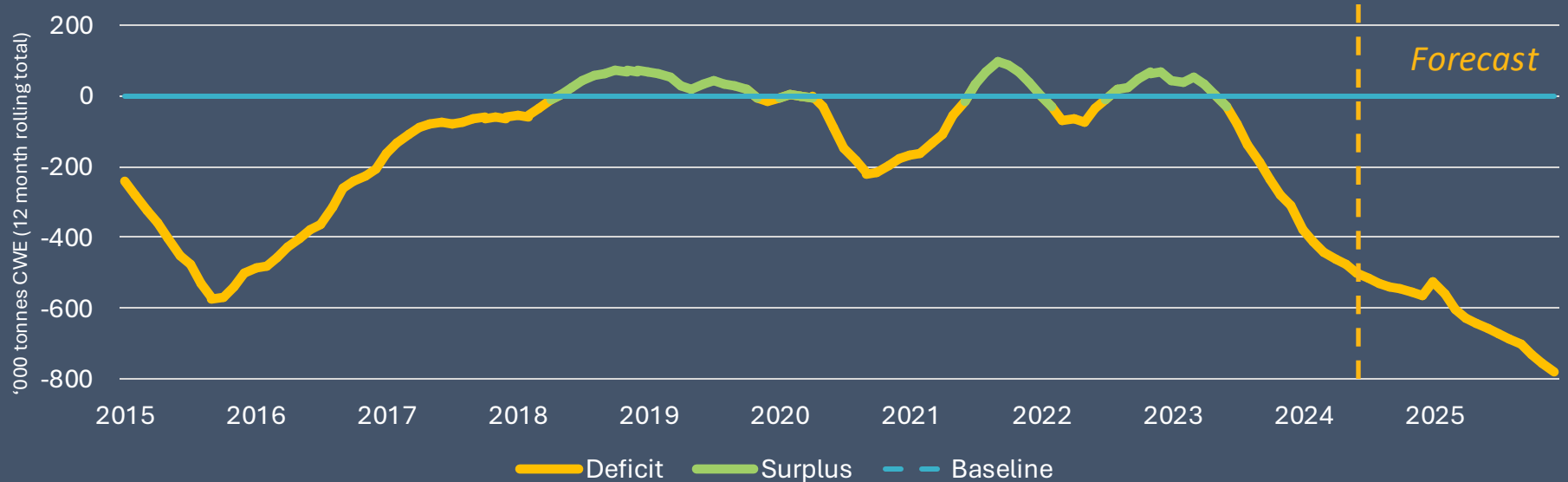
Australia-UAE CEPA

- Negotiations concluded - likely to enter into force mid-2025
- 5% tariff on frozen beef and sheepmeat eliminated (chilled tariffs already 0%)

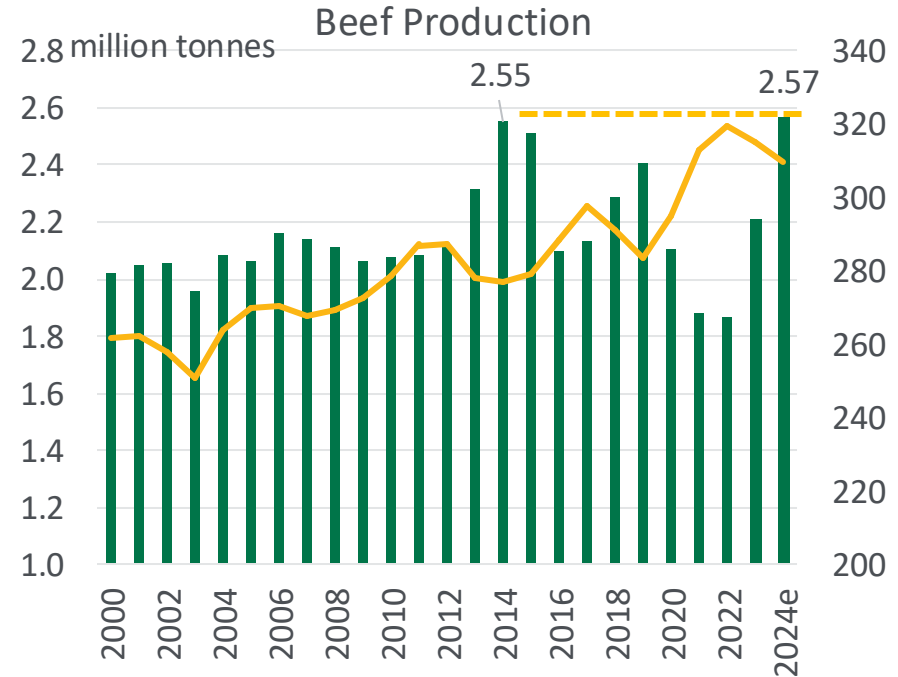
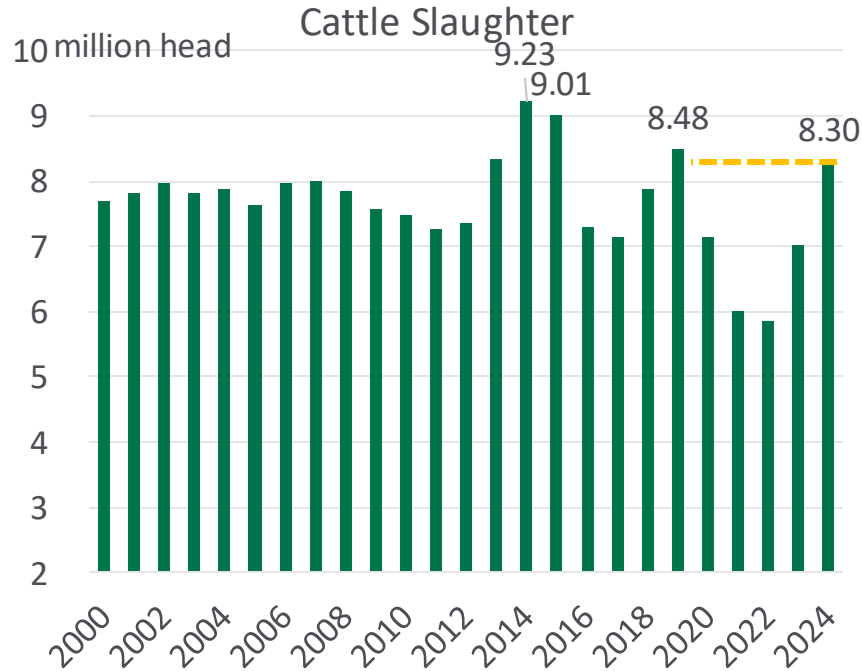
Big opportunities from US cattle herd destock



US beef net trade balance (exports minus imports)
Jan 2015 – Dec 2025f

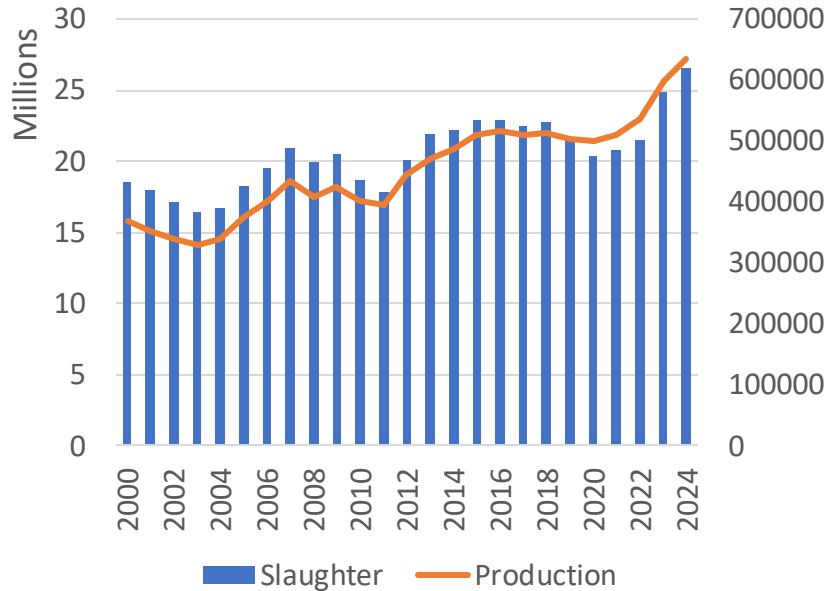


2024 in review - one of the biggest years for Australian red meat.

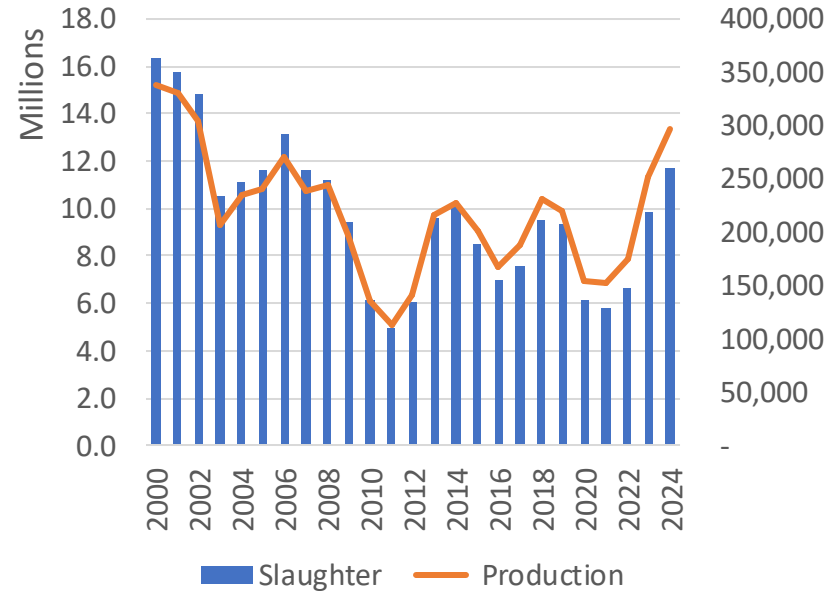


2024 in review - one of the biggest years for Australian red meat.

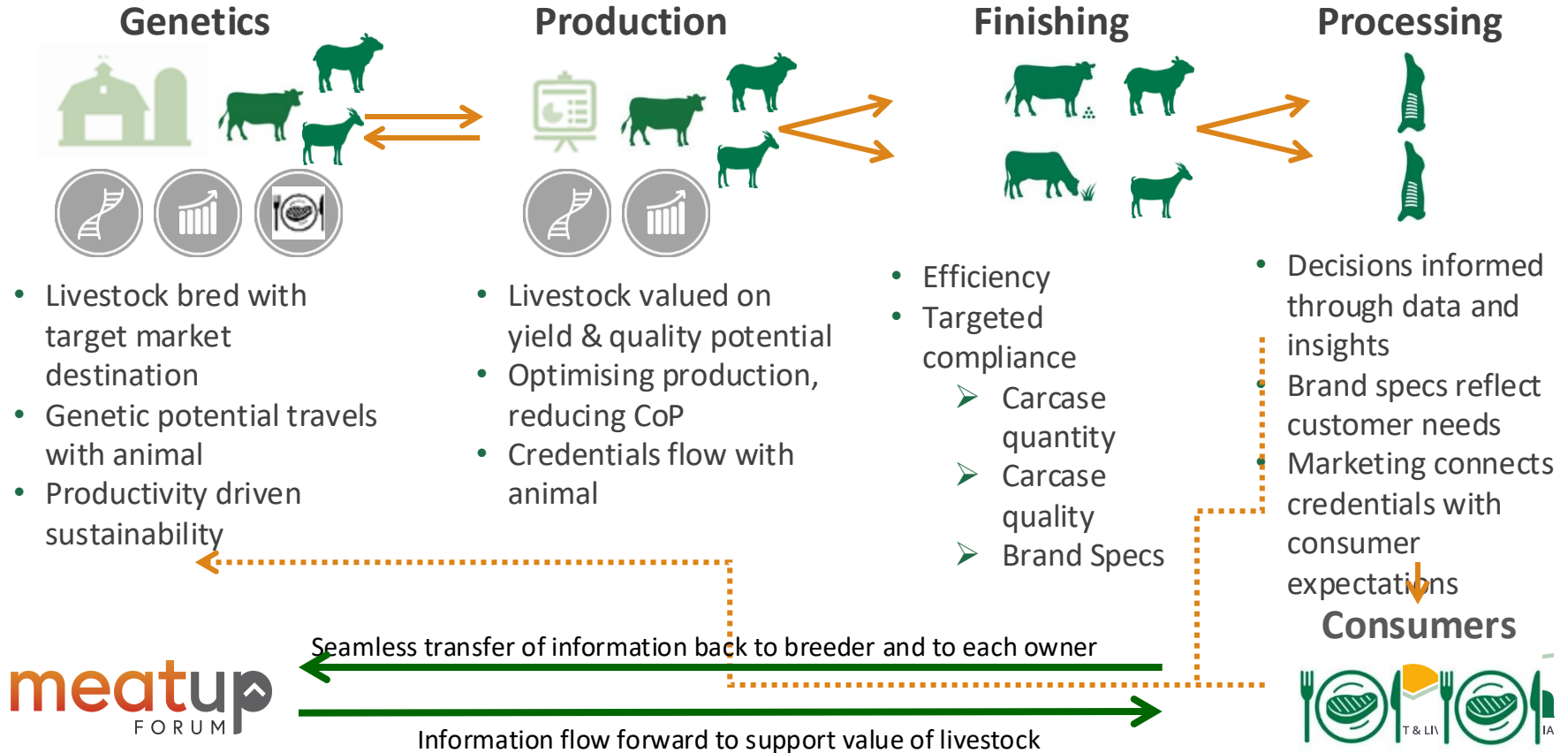
Lamb slaughter and production



Mutton slaughter and production



Value Based Marketing



Overview

1. Market update

2. How to get involved with MLA RD&A

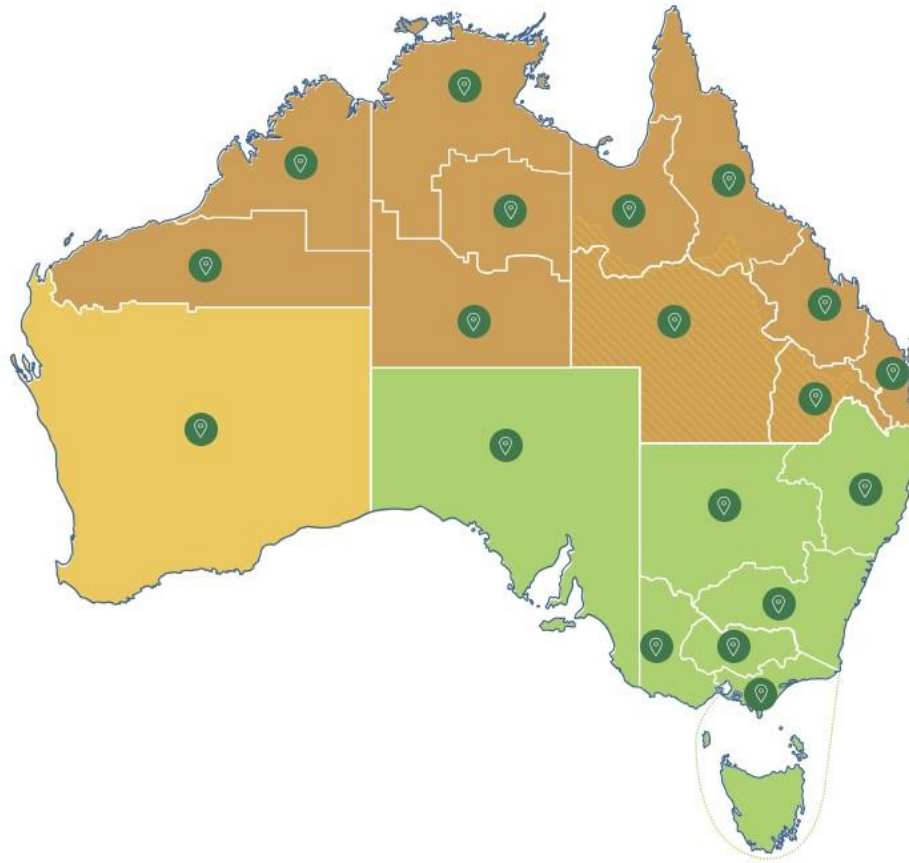
3. Animal Wellbeing Update

MLA Producer Consultation Program



The partners involved in the producer network





South Australia



Chair:

Elke Hocking

Lucindale, SA

0427 667 081

elkehocking@gmail.com

Secretary:

Meridian Agriculture

03 5341 6100

info@salrc.com.au

The Adoption Challenge

- Approx. 100,000 red meat businesses* (20,200 producers in Nth Aus).
- 28 million cattle (57% of herd in Nth Aus).
- 78.8million sheep
- 1.2million goats slaughtered in 2021
- Ambition to be Carbon Neutral by 2030
- In 2021 30% of all beef producers are using regular pain relief
- Pain relief for Mulesing; 92% merino producers and 89% non-merino producers
- Pain relief for castration 25% national sheep producers
- Pain relief for tail-docking 44% national sheep producers

*ABARES FY21 76,009 grazing businesses EVAO >\$40,000 pa.

MLA Adoption Program

Awareness Activities	Short-term training programs	Long-term practice change
BeefUp Forums (Nth Aus)	Edge Network e.g. Nutrition EDGE	Producer Demonstration Sites (PDS)
MeatUp Forums (Sth Aus)	Bred Well Fed Well (Sheep & Cattle)	Profitable Grazing Systems (PGS)
Webinars e.g. Profitability & Productivity and Websites resources e.g. FutureBeef, ParaBoss, Transport Hub	'The Toolbox' e-learning platform	-
Publications & resources e.g. case studies, videos, guidebooks, websites	-	-



FY24 Impact Summary

2023-24 highlights



>9.1M
sheep influenced by
practice change programs



>14.6M
cattle influenced by
practice change programs



647,950
goats influenced by
practice change programs



>219.4M
hectares of Australian
agricultural land influenced
by MLA adoption programs



86%
average value rating of events
across MLA adoption programs



78%
of attendees indicated intent
to change practices as a result
of MLA adoption programs



10,202
producers engaged



514
advisors engaged in
capability building programs

Total benefits* delivered to producers via MLA adoption programs

MLA adoption programs have delivered \$1.17 billion* in total net benefits to participating producers who adopted a new practice between 2015-2024. In 2023-24 this was \$74.3 million in annual net benefits to participating producers.



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

What's new

- BredWell FedWell
- Carbon EDGE



What do you learn in Carbon EDGE?

- Understand opportunities for reducing emissions and carbon storage
- Undertake a carbon account
- Develop an action plan for your business
- Modules include:
 - Greenhouse gases 101
 - Greenhouse gas accounting
 - On-farm emissions
 - On-farm sequestration
 - Carbon credits and carbon neutrality



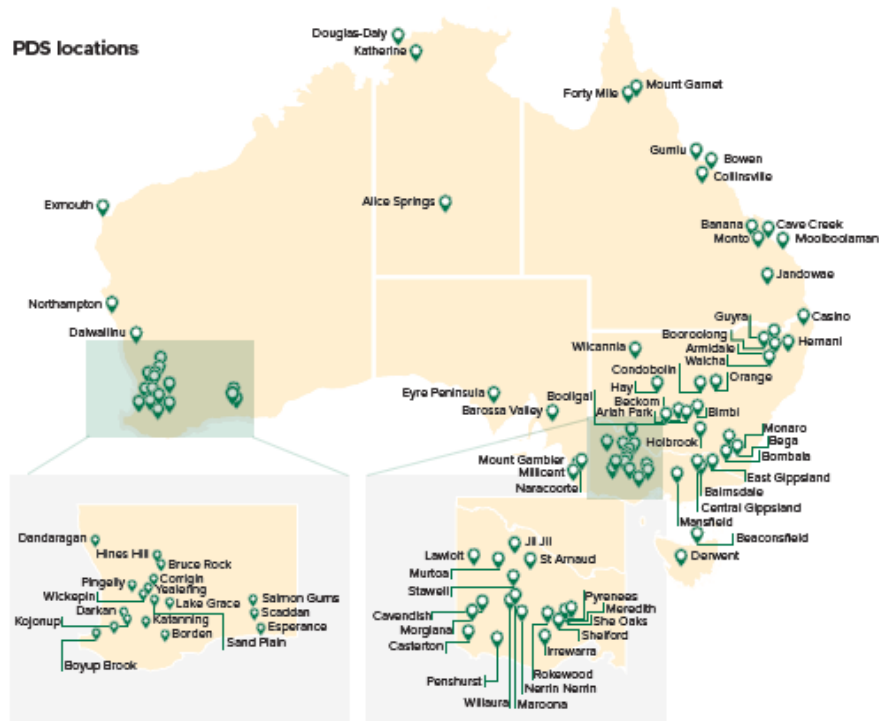
Bred Well Fed Well

- 1-day workshops
- Putting theory into practice
- Genetics and nutrition focus for sheep & cattle
- Hosted on-property with access to stud stock with EBVs or ASBVs
- Participating cattle producers, on average, receive an annual net benefit of **\$3/cow managed**.
- Participating sheep producers, on average, receive an annual net benefit **\$0.65/ewe managed**





PDS locations



51 Active Levy & Co-contributor PDS projects nationally

14 Integrated R&D PDS projects nationally

Overview

1. Market update
2. How to get involved with MLA RD&A

3. Animal Wellbeing Update

Generating supply chain value

Will Atkinson

Meat & Livestock Australia

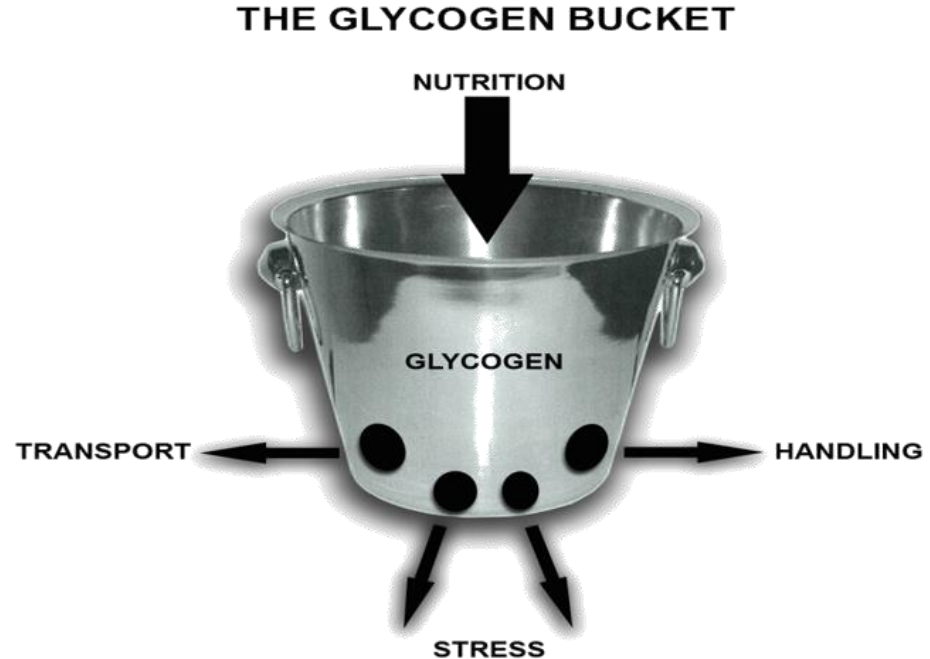
Overview

- Drivers of eating quality – Beef and Sheepmeat
- Performance benchmarking
- What is your target market

Drivers of eating quality

Maximise glycogen levels

- Nutrition
- Mixing, drafting
- Animal health
- Heifers in oestrus
- Weather events
- Loading/unloading



Beef - The MSA Index

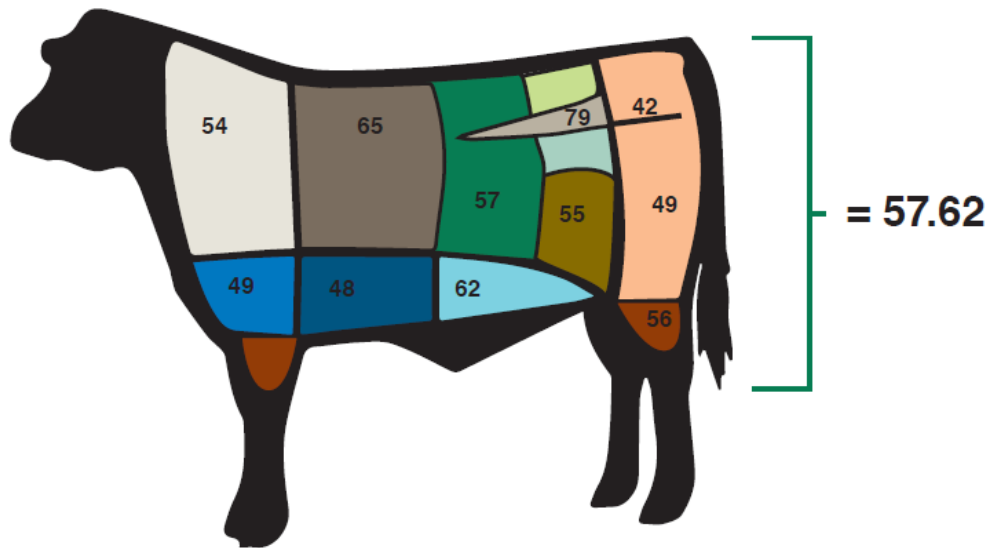


Illustration for example purposes only

- A **single number** to indicate the overall quality of a carcass
- A weighted average of 39 eating quality scores of the primals
- Benchmarking tool to measure performance.



Beef - Key drivers of the MSA Index

Carcase Input	Size of effect on the MSA Index (units)	Relative Importance
HGP Status	-5	Very High
Milk-fed Vealer	4	Very High
Saleyard	-5	Very High
MSA Marbling	0.15	High
Hump Height	-0.7	High
Ossification	- 0.6	High
Rib Fat	0.1	Medium
Hot Standard Carcase Weight	0.01	Low
Gender	0.3	Low



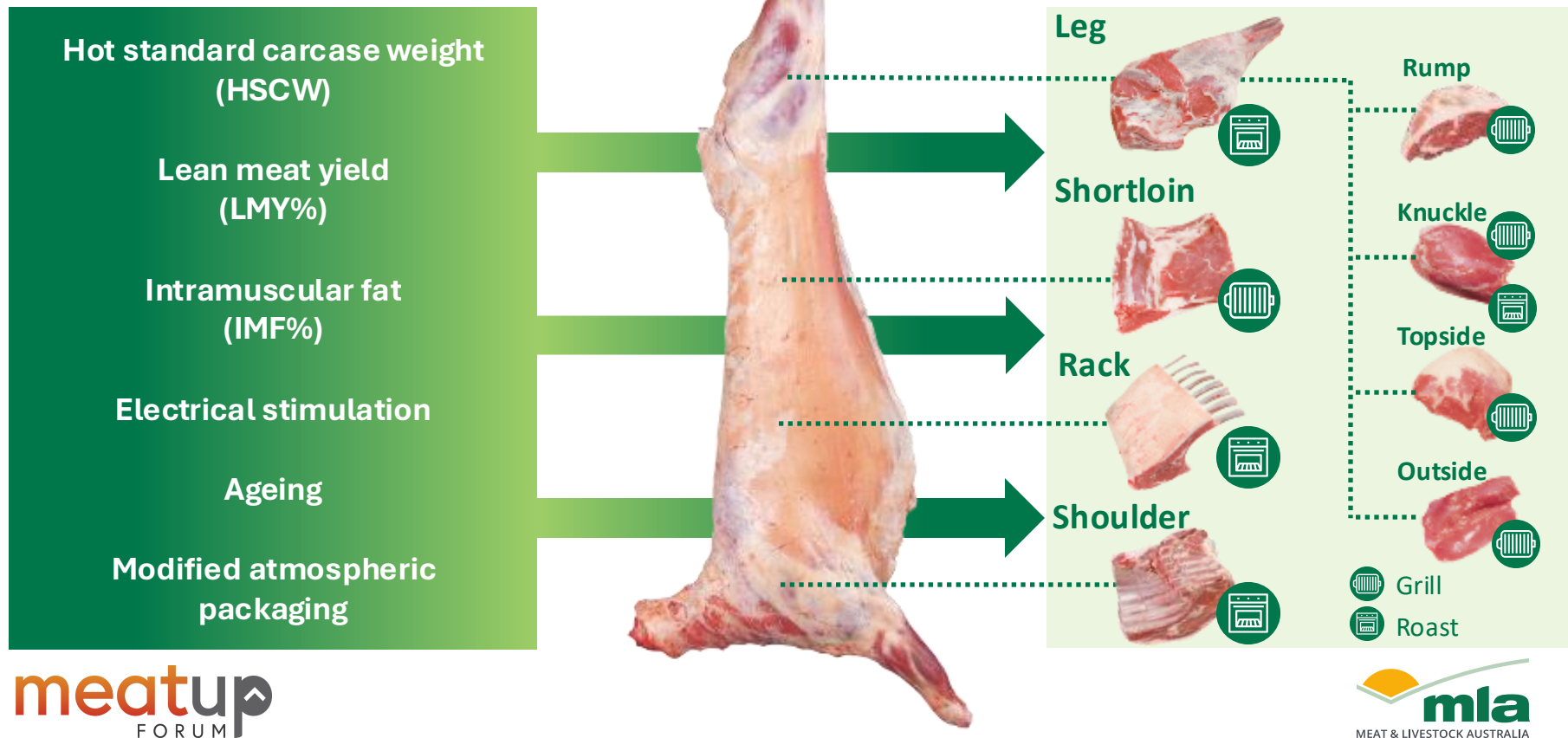
MSA Sheepmeat Model

- Recent development based on over a decade of R&D
- Based on untrained consumer sensory scores (gold standard)
- Enabled by objective measurement technology
- Relationship to traits that explain eating quality variation



The MSA Sheepmeat Model

Inputs



Performance benchmarking

How are you performing?

Finishers

- myMSA
- myFeedback – all carcase data
 - Animal disease and defect

Breeder/Backgrounders

- Performance from the feedlot?
- Through myFeedback



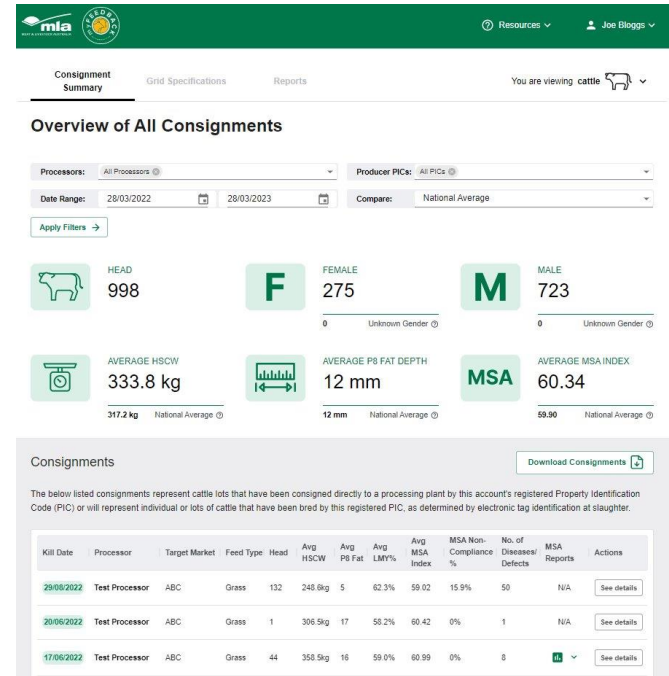
What is myFeedback

One system, more data, better insights

- Combining carcase, eating quality and disease & defect data in one single access point (NLIS, MSA, AHA, NLRS)
- System access will be available for all participating cattle and sheep producers, processors and brand owners.

Benefits for Producers

- Understand compliance to market specs and benchmark livestock performance
- Identify opportunities for proactive disease management & prevention
- Access to “Solutions to Feedback” to help improve performance





Animal Diseases and Defect by Carcase Traits

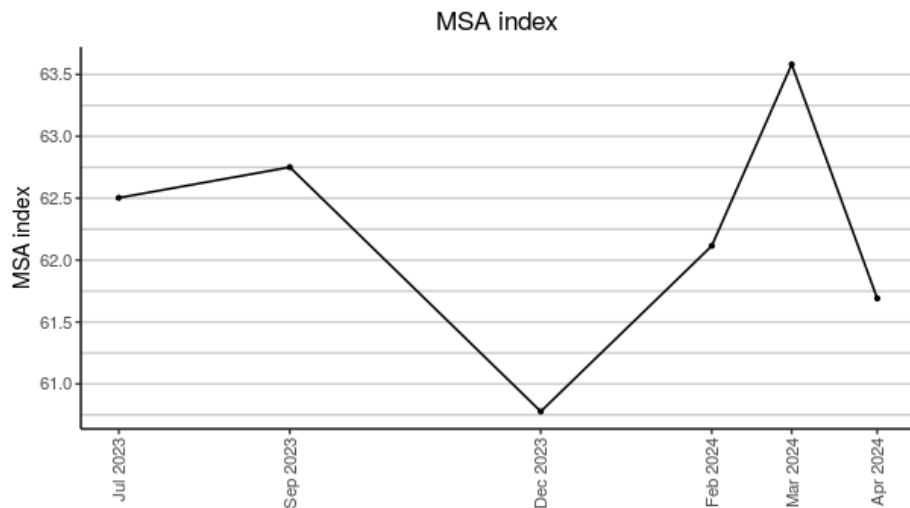
Selected Trait: MSA Index

Health Conditions	More Info	No. Head	Average MSA Index
Nephritis	Info	1,147	62.65
Healthy		11,314	63.00
Pneumonia	Info	3,163	63.15
Hydatids	Info	535	63.20
Abscess	Info	639	62.73
Fluke	Info	740	62.71



Benchmarking your performance

- Access benchmarking data in myMSA



Compliance

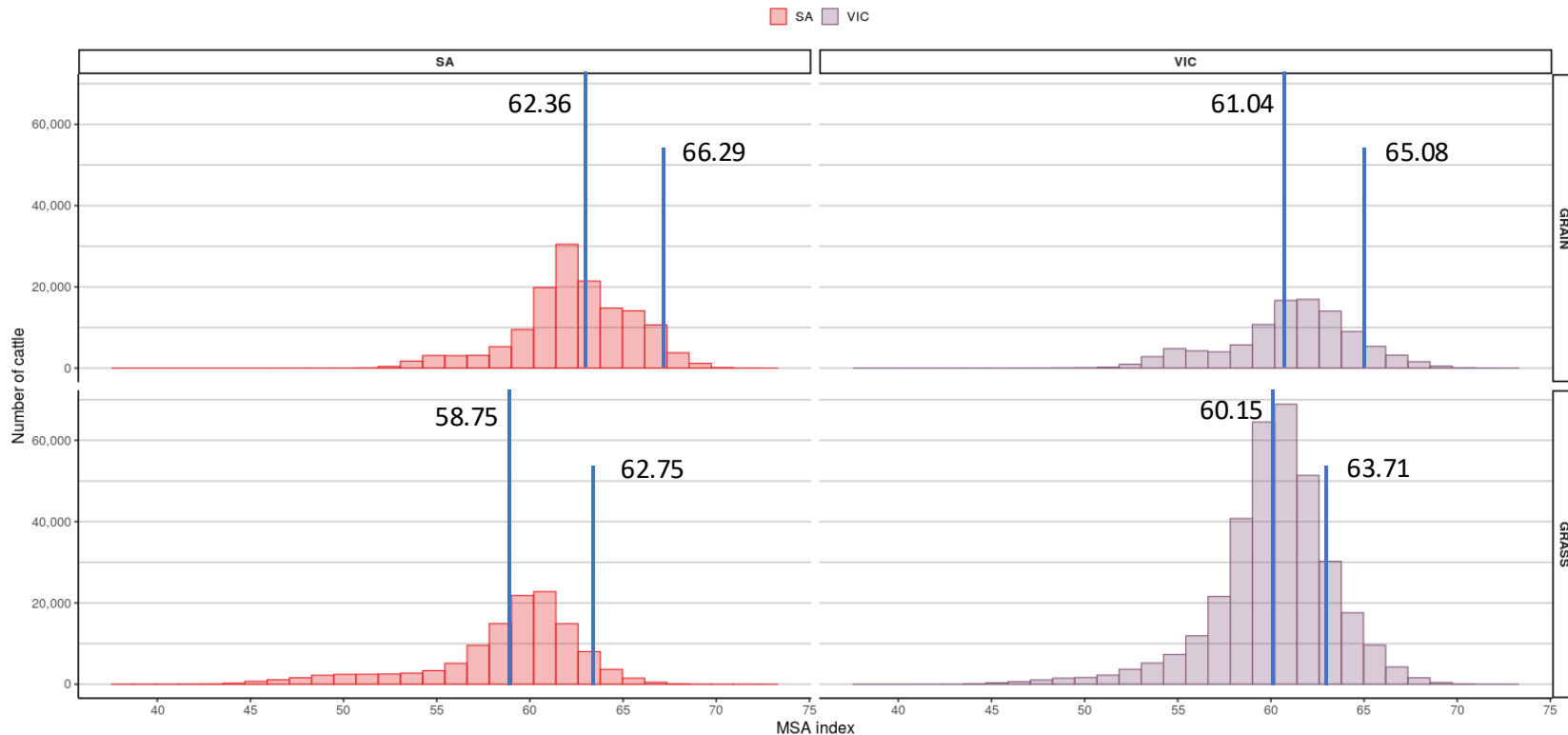
	Your results (n)	Your results (%)	NSW (n)	NSW (%)
Total carcasses	310		927957	
Non-compliant	16	5.2%	35673	3.8%
Non-compliant pH	4	1.3%	29008	3.1%
Non-compliant rib fat	11	3.5%	6613	0.7%



Benchmarking your performance



Benchmarking your performance



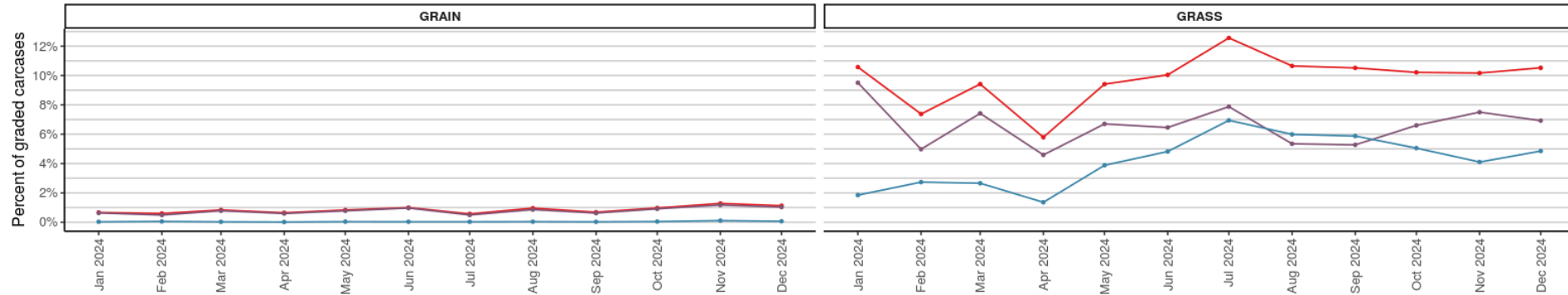
Reducing non-compliance

MSA compliance

- Pre-slaughter requirements
- pH < 5.71
- Rib Fat $\geq$ 3mm
- Adequate fat coverage across all primals

Monthly non-compliance by feed type

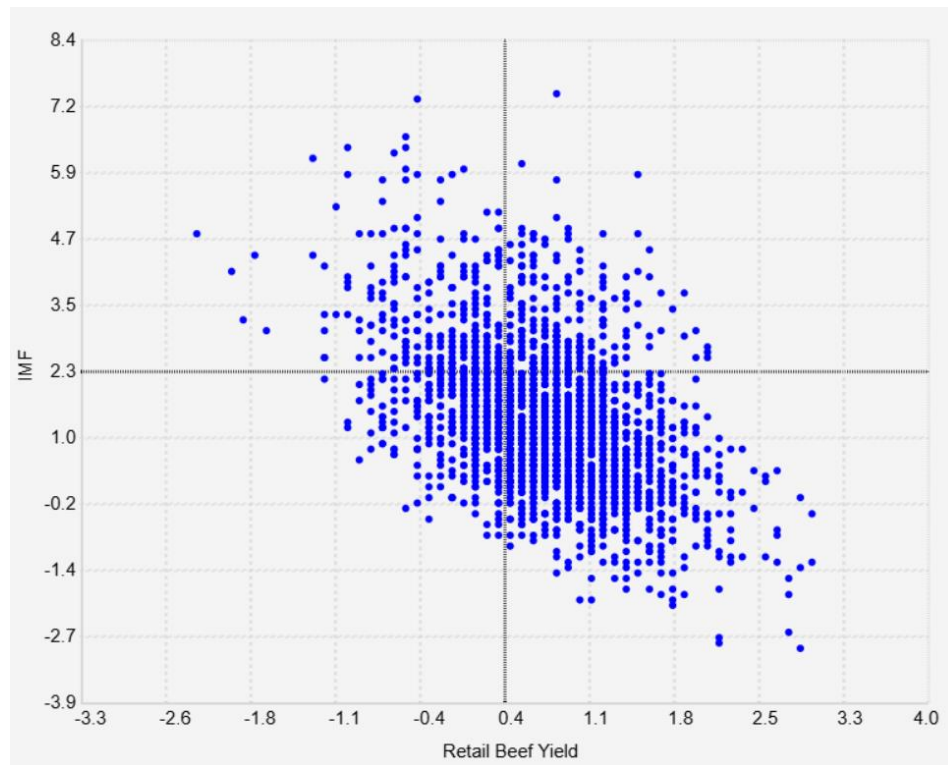
Non-compliant pH Rib fat



What is your target market?

What is your target market?

- **Align your breeding objective**
 - Bred Well, Fed Well
 - Don't chase extremes or single traits
 - Balance is key
- **Trading**
 - What do you know about your livestock?
 - What information do you gather?



Traits driving the outcomes

Market	Domestic	Export
HGP	N	N
Sex	M	M
HSCW (kg)	240	320
TBC	N	N
Hump	60	80
Ossification	120	200
MSA Marb.	320	600
RF	6	12
MSA Index	62.24	62.53

CARCASE
IMAGE

Understand the market requirements

MSA Specifications

- Compliance to pH and rib fat
- MSA Index *or* Boning group requirements

Establish and maintain relationships

- Feedlots
- Processors
- Buyers/Agents

Company Specifications

- Meat colour
- Fat colour
- HSCW
- P8 Fat



Take home messages

Drivers of eating quality

- Nutrition and stress management for glycogen reserves
- MSA Sheepmeat model for individual carcass grading of sheepmeat

Performance Benchmarking

- Understand your performance compared to where you want to be
- Utilise the tools available to help pull the right levers on farm

Target Market

- Know the target market you are aiming for to get the most value out of your production system.

Tools and resources

Links

- [myMLA](#)
- [myFeedback](#)
- [Solutions to Feedback Library](#)
- [myFeedback Video Guides](#)

Resources

- [Beef Eating Quality Insights](#)
- [Beef Tips and Tools](#)
- [MSA Sheepmeat Factsheet](#)

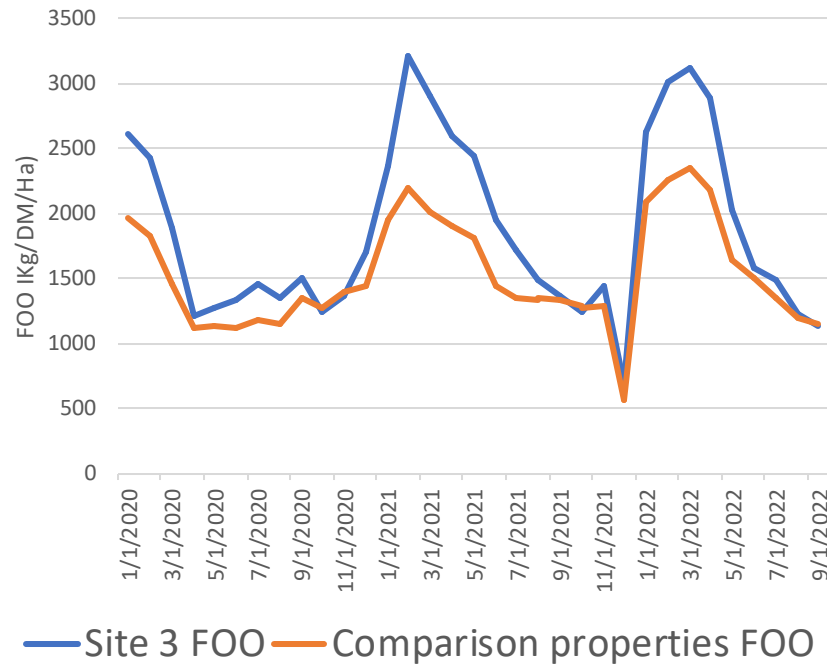
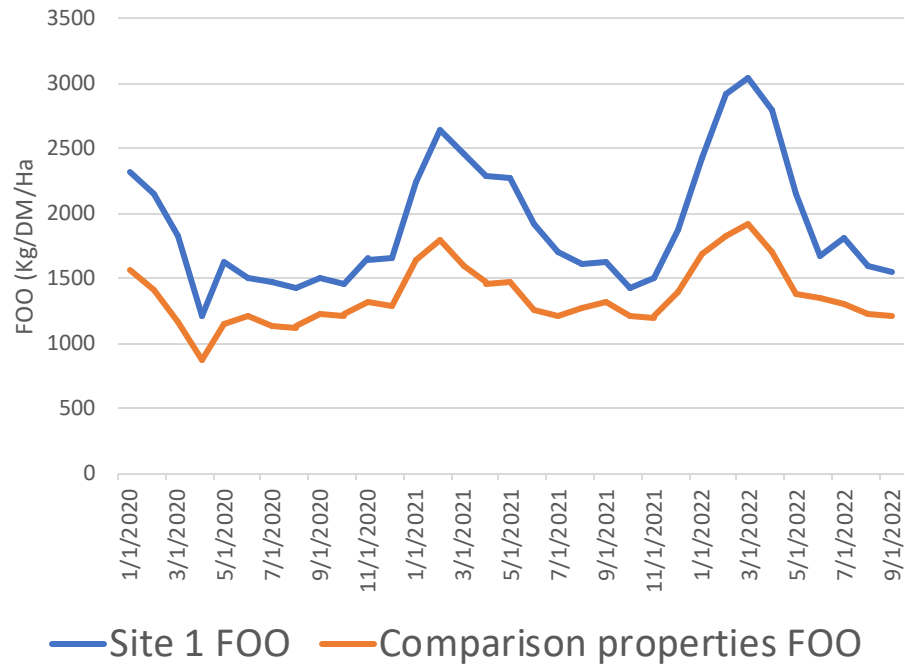
Containment feeding – The good, the bad and the ugly

Deb Scammell
Talking Livestock

The Good.....

Ground Cover





Feed on Offer comparison

Individual management





**Net Benefit = \$5.30 -
\$8.00 / ewe**

You Are In
Control!

Setting up a system that works!!

Feeding Systems





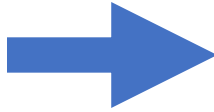






The Bad.....

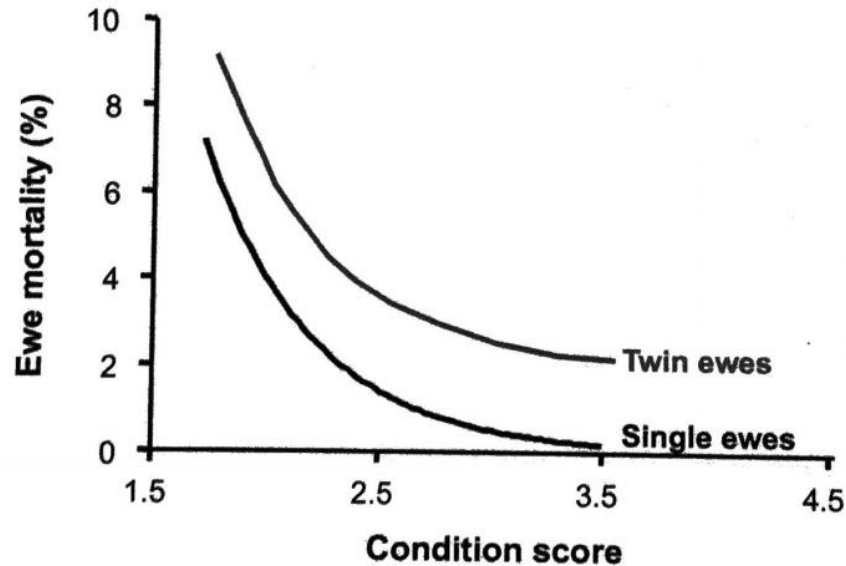
Condition Score
Spread



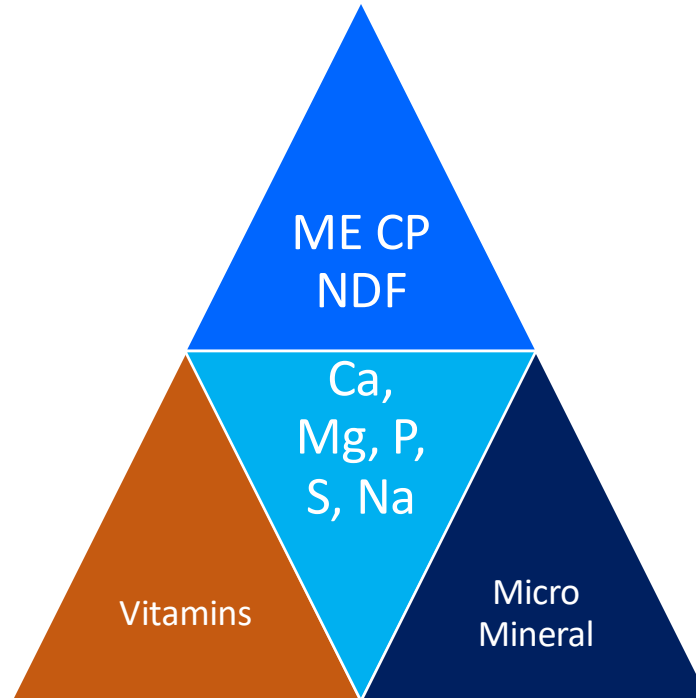
Large mob sizes

Inadequate
trough space

Mortality of Merino ewes in late pregnancy in relation to condition score



Livestock essential nutrients



Energy Requirements

TABLE 1a.
Energy Required by Ewes @ Condition Score 3 to maintain weight

Maintenance energy (MJ/d) for ewes under paddock conditions							Confinement Fed	
day of pregnancy	small frame (45kg) maintain CS 3		medium frame (50kg) maintain CS 3		large frame (60kg) maintain CS 3		medium frame (50kg) maintain CS 3	
	single	twin	single	twin	single	twin	single	twin
dry	7.8	7.8	8.3	8.3	9.9	9.9	6.7	6.7
50	8.1	8.2	8.6	8.7	10.1	10.3	6.9	7.2
70	8.3	8.7	9.1	9.4	10.5	10.9	7.4	7.7
100	9.3	10.3	10.3	11.5	11.8	13.2	8.3	9.6
130	11.6	14.4	12.8	15.9	14.8	17.9	10.9	11.7
days lactating	maintain CS 3		maintain CS 3		maintain CS 3		maintain CS 3	
	single	twin	single	twin	single	twin	single	twin
10	17.7	22.0	19.2	24.0	21.9	28.7	ask for advice on confinement feeding ewes and lambs	
30	19.2	24.1	20.8	26.5	23.4	29.8		
50	15.8	19.5	17.2	21	19.4	24.2		



Fibre





The Ugly.....

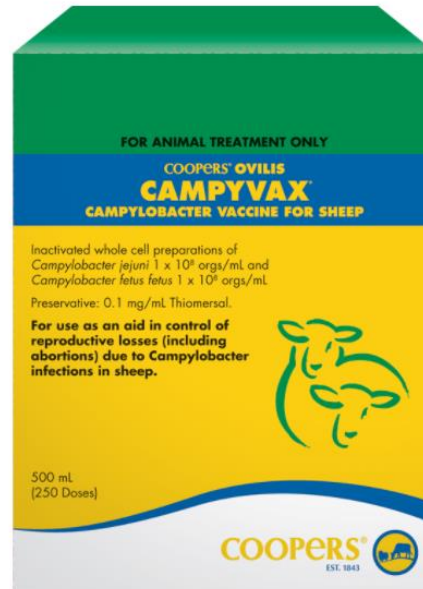
Fat Ewes



Metabolic issues



Campylobacter



Other health issues??

Take home messages



Containment is a great tool, for ewe and pasture management.



Success can be great but requires planning, correct nutrition and monitoring.



Manage mineral balance and potential health issues.

Tools and resources

MLA: <https://www.mla.com.au/extension-training-and-tools/producer-demonstration-sites/containment-feeding/>

Barossa Improved grazing group: <https://biggroup.org.au/>

Livestock SA - <https://livestocksa.com.au/events/webinars>

Morning tea

30 minutes

The power of on-farm data: What and when

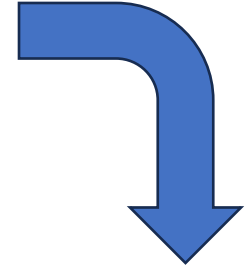
Sally Martin
Sheep MetriX

What is the power of on-farm data?

- What data will benefit your business / enterprise?
- What and when you collect data? Will influence how useful it is.
- How you use the data is where you will find the power.....
 - Finding the good and/or poor performers – then what do we do with them?
 - The timing of our decisions.
- Can you use the data more than once?

RFID / EID

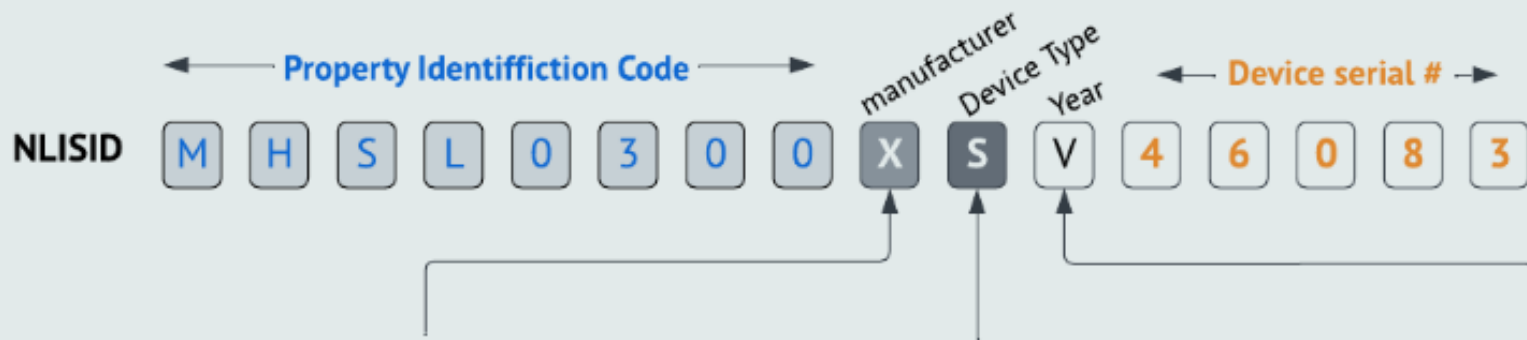
The eID tag is the enabler.



Some eID Terms

- NLIS – National Livestock Identification
- VID – Visual tag identification (tag number)
- eID – Electronic Tag (RFID)
- Stick Reader
- Indicator – scale head; weigh scale
- Panel reader
- Bucket file - eID and VID paired in excel
- Connectivity – do you need this?
- Digital literacy.....





Manufacturer code (1 letter)

X = Allflex Australia
L = Leader Products
M = Datamars
A = Shearwell
R = Enduro

Device type (1 letter)

S = Sheep (RFID breeder)
T = Sheep (RFID post-breeder)
K = Goat (RFID breeder)
L = Goat (RFID post-breeder)

Year (1 letter)

Q = 2019	V = 2024
R = 2020	W = 2025
S = 2021	X = 2026
T = 2022	Y = 2027
U = 2023	Z = 2028

Tags



Colour	Red	Blue	Black	White	Orange	Green	Purple	Yellow
Year	2022	2023	2024	2025	2026	2027	2028	2029

- eID tags options
 - Allflex – Rapid Tag
 - Datamars – Zee Tag
 - Leader – Multitronic
 - Shearwell – eID
 - Enduro
- **Tag placement** – super important
- Put your order in **after pregnancy scanning**
 - Tag numbering – Year + Number eg 230001



Hardware

- Stick readers
- Panel readers
- Indicator
- Handlers/weigh crates



What data should you collect?

- Depends on your breeding or production objective
- What type of enterprise(s) are you running?
 - Meat Focused
 - Fibre Focused
- Only collect data you are going to use
- Be able to compare across years/seasons/enterprises/time
 - Per head
 - Per hectare
 - Per kg
 - g/head/day



Breeding objective

- It is really important to capture your breeding objective and have a clear goal on how you are going to use your data.
- SMART
 - Specific
 - Measurable
 - Attainable
 - Relevant
 - Time Based

Breeding Objective				
Traits	Increase	Maintain	Decrease	Measure
Fleece Weight		✓		Maidens
Micron			✓✓	Maidens
Growth Rates	✓✓✓			All up to 300 days
Mature Size		✓		Joining Wts
Reproduction	✓✓✓			Preg; Wet & Dry
Muscle & Fat	✓	✓		Rams
Worms			✓✓	Rams
Wrinkle			✓✓✓	Marking

Ram Team Manager & Flock Profile



Reflects the
genetic merit
of the rams
you used 5 to
7 years ago

Today

Reflects how
your progeny
will be
performing in
5 to 7 years

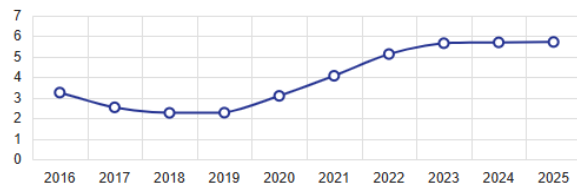
2020

2025

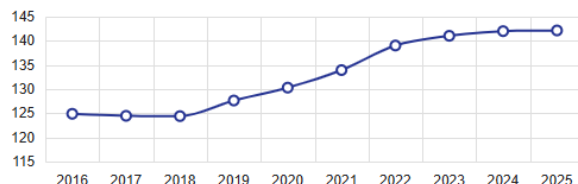
2030

Ram Team Manager – genetic trends

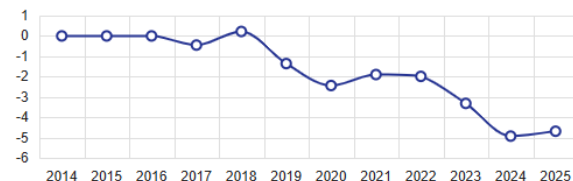
Post Weaning Weight (kg)



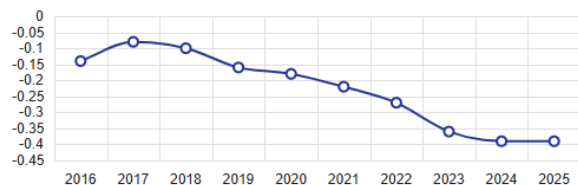
Sustainable Merino (score)



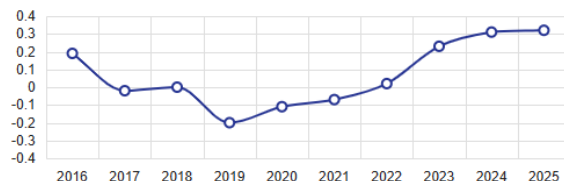
Yearling Worm Egg Count (%)



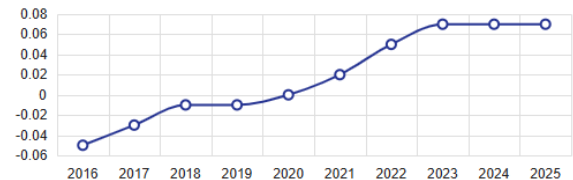
Early Breech Wrinkle (score)



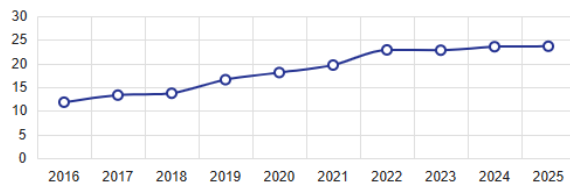
Yearling Eye Muscle Depth (mm)



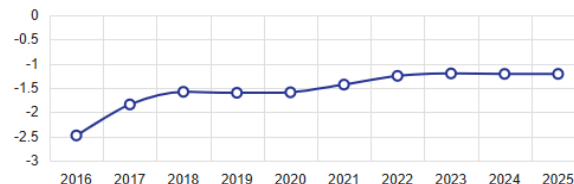
Weaning Rate (score)



Yearling Clean Fleece Weight (%)



Yearling Fibre Diameter (µm)



When to collect data?

- When do you need data to make a decision
 - Classing/Selection
 - Joining; Pre lambing; Pre-sale
- What does your calendar look like normally?
- Can you fit data collection into your current program?
- Do you have the gear and capacity to DIY?
- Do you need to get someone in to do it for you?



Month	2024	2025	2026	2027
January	Joining (24 Drop)	Joining (2025 Drop)	Joining (26 Drop)	Joining (2027 Drop)
February				
March				
April	Main Shearing (Collect GFWs on 2023 drop) + Preg Scan	Main Shearing (Collect GFWs on 2024 Drop + Preg Scan	Main Shearing (Collect GFWs on 2025 drop) + Preg Scan	Main Shearing (Collect GFWs on 2026 Drop) + Preg Scan
May				
June	Lambing (24 Drop) + Marking (EBWR, Age, BCOV, Paddock)	Lambing (25 Drop) + Marking (EBWR, Age, BCOV, Paddock)	Lambing (26 Drop) + Marking (EBWR, Age, BCOV, Paddock)	Lambing (27 Drop) + Marking (EBWR, Age, BCOV, Paddock)
July				
August				
September	Weaning (2024 Drop) + Classing	Weaning (2025 Drop) + Classing	Weaning (2026 Drop) + Classing	Weaning (2027 Drop) + Classing
October				
November				
December				

Month	2023	2024	2025	2026	2027
January	Main Shearing (Tip shear on 22 drop)	Joining (24 Drop)	Main Shearing (Tip shear on 2024 Drop)	Joining (26 Drop)	Main Shearing (Tip shear on 2026 Drop)
February	Preg scan		Preg scan		Preg scan
March					
April	Lambing (23 Drop) + Marking (EBWR, Age, BCOV, Paddock)	Main Shearing (Collect GFWs on 2023 drop) + Preg Scan	Lambing (25 Drop) + Marking (EBWR, Age, BCOV, Paddock)	Main Shearing (Collect GFWs on 2025 drop) + Preg Scan	Lambing (27 Drop) + Marking (EBWR, Age, BCOV, Paddock)
May					
June		Lambing (24 Drop) + Marking (EBWR, Age, BCOV, Paddock)		Lambing (26 Drop) + Marking (EBWR, Age, BCOV, Paddock)	
July	Weaning (2023 Drop)		Weaning (2025 Drop)		Weaning (2027 Drop)
August	Main Shearing (Collect GFWs on 2022 Drop)		Main Shearing (Collect GFWs on 2024 Drop + Tip shear on 2025 Drop)		Main Shearing (Collect GFWs on 2026 Drop + Tip shear on 2027 Drop)
September	Classing	Weaning (2024 Drop) + Classing	Classing	Weaning (2026 Drop) + Classing	Classing
October					
November		Joining (2025 Drop)		Joining (2027 Drop)	
December					

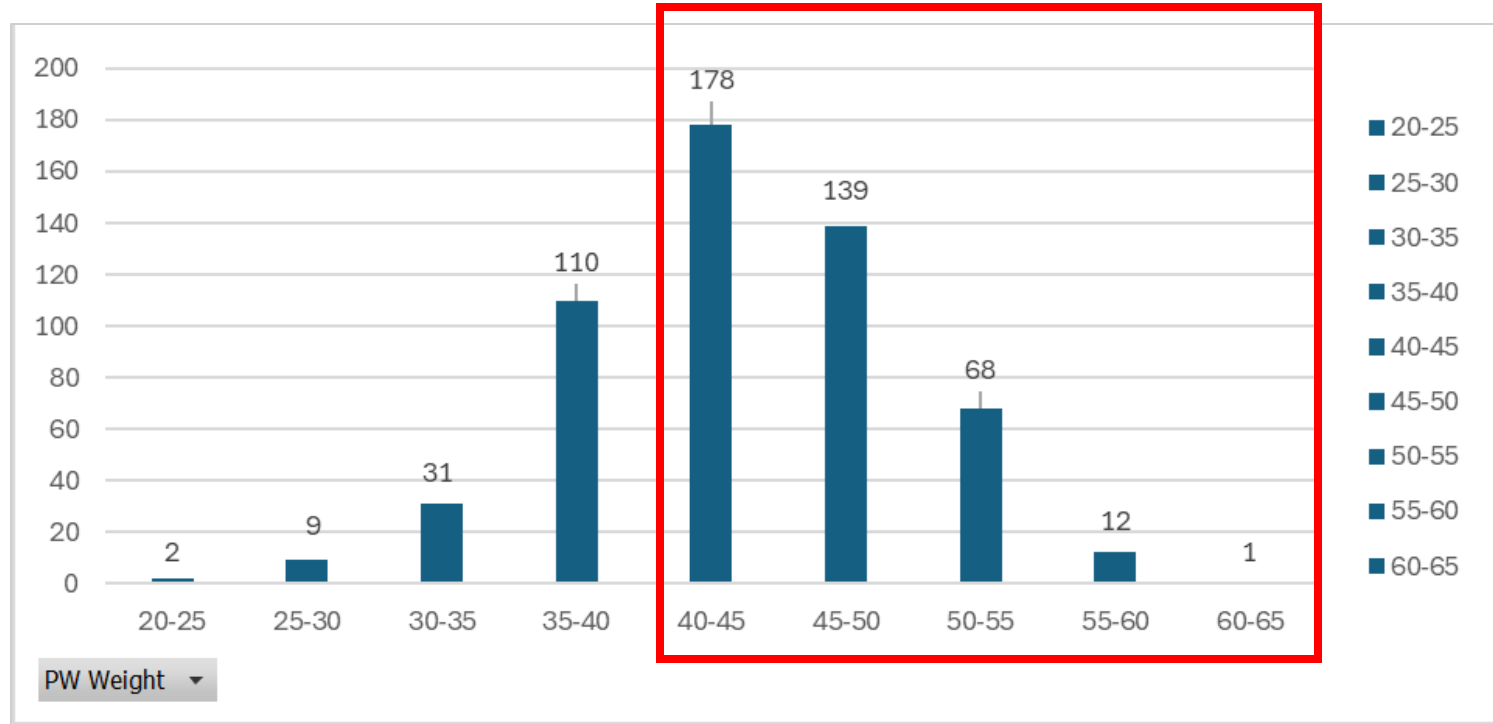
When to collect data?

Ewe Lamb Group	Count	Ave. Body Weight (kg)	ADG Weaning to 28/02/2025 (kg/hd/day)
Ewe Lamb Lambs	39	37.2	0.175
Purchased in ewes	124	47.4	0.153
MA Dam Lambs	383	42.8	0.100
Total / Average	546	43.4	0.118

- **Example – Joining ewe lambs**

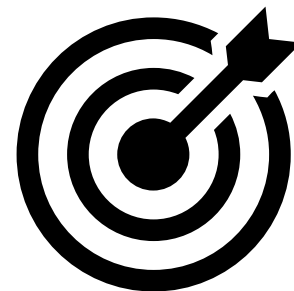
- Look at your calendar – what month will you join them?
- Weaning – collect a weaning weight
- Growth rates – set dates to weigh lambs and monitor growth rate
- Joining weight
- Preg scan weight
- Pre lambing weight

Are we meeting our targets?



Data collection timing and protocols

- **Based around your calendar of operations you should have**
 - When you carry out current management/husbandry
 - This can then inform when you collect the data on the traits that are important to you breeding objective
 - And when you need the data to make decisions eg classing/mating
- **Protocols**
 - Body weights – 2 hours off feed, collect as quickly as possible
 - Fleece – min 9-10 months of age; 5 mths wool FD; 6 mths wool GFW
 - Be consistent eg mid side sample – pin bone or midside; condition scoring
 - Visual Scores – follow the score guide



Data capture without scanning a tag

- At lamb marking capture the tag number sequence for each mob
 - Example record birth type, dam age, paddock
 - Tags 24**0001** to 24**0250** – Twins out of Maiden ewes; Hill Paddock
 - Tags 24**0251** to 24**0700** – Single out of MA ewes; Dam Paddock
- Add these columns in your bucket file – BT, Dam Age, Paddock

	A	B	C	D	E	F
1	EID	VID	YOB	BT	DAM AGE	BT PDK
2	940 110029951161	220001	2022	2	Maiden	HILL
3	940 110029951162	220002	2022	2	Maiden	HILL
4	940 110029951163	220003	2022	2	Maiden	HILL
5	940 110029951166	220251	2022	1	MA	DAM
6	940 110029951167	220252	2022	1	MA	DAM



Data capture example cont.

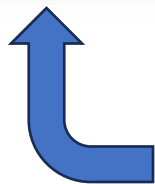
- The data captured at marking can be used later – you can even draft on this information
 - Example
 - When you class the ewes you can draft and class them separately
 - Twins out of maidens, twins out of MA, single etc
 - Classing the twins first so they are not disadvantaged due to size
- Data that will require scanning a tag at marking
 - Collect the above +
 - Sex
 - Breech scores
 - Age score (eg 1 – 5)



Using the data



Class	Count	WT	CFW	FD	FLC Val	RP MP+ Index
Top	112	62.1	5.1	17.2	\$104.59	110.4
2nd	112	58.9	4.8	17.6	\$92.29	105.6
3rd	261	56.2	4.6	17.8	\$85.89	100.7
4th	187	55.8	4.5	18.0	\$81.28	94.2
CULL	74	52.8	4.5	18.6	\$74.84	88.0
Total/Ave	746	57.0	4.7	17.8	\$87.41	100.0



meatup
FORUM




MEAT & LIVESTOCK AUSTRALIA

Data use multiple times eg Preg Scanning

- Manage pre lambing; lambing paddock allocations
- Link across years
 - = Collate over time eg 0, 1, 2, 2, 001220
- How responsive is my flock (+ with condition score at joining)
- Birth type (on lambs)
 - Born in single or twin paddock
- Paddock analysis – lambing and weaning %
- Cross reference to WET & DRY @ Marking



Financial benefits of scanning for multiples

- Selling the dry sheep
- Better allocation of feed
 - Less feed to singles
 - More feed to multiples
- Better paddock to twins
 - + ewes lambs
- Use birth type when selecting your replacement ewes
- ROI = 474%

Management options	Scanning for multiples	\$/ewe
Sell the passengers	✓	\$1.85
Feed allocation:		
✓ to pregnant ewes	✓	\$0.80
✓ to multiples	✓	\$1.00
Paddock allocation	✓	\$0.95
Replacement selection	✓	\$0.95
Total value per ewe	\$5.55	

Source: AWI & MLA(2014)

Questions from clients

- How to upload data
 - Minor details eg headings – case sensitive
 - FD, fd, micron or BT, birth type, Birth Type
- Using the data
 - Pulling data together – multiple sources
 - Reporting – what format do you want it in?
- Essential
 - Have an idea of what you want to achieve or
 - What question(s) are you trying to answer
 - Then make a plan



Take home messages

- You don't have to do everything yourself.
- You do need to be clear why you want to collect data & when you need it.
- Keep it simple, start small and build confidence.
- Stage your approach, there are varying levels of Tech.
- Look for other ways to use the same data.
- Review progress over time.

Tools and resources

- SheepMetriX – eID Implementation on Farm Workshop –
www.sheepmetrix.com.au/eid-courses
- Excel for eID – Back to basics
<https://www.youtube.com/watch?v=zVZN0qfKiXs&t=157s>
- Excel for eID – using your data effectively
<https://www.youtube.com/watch?v=Fq5C0op6NKk>
- Excel for eID – building your data over time
<https://www.youtube.com/watch?v=7OJv5FwOpHE>

Mum's not angry, just disappointed

Prof. Wayne Pitchford
Davies Livestock Research Centre
University of Adelaide

Mum's not angry, just disappointed



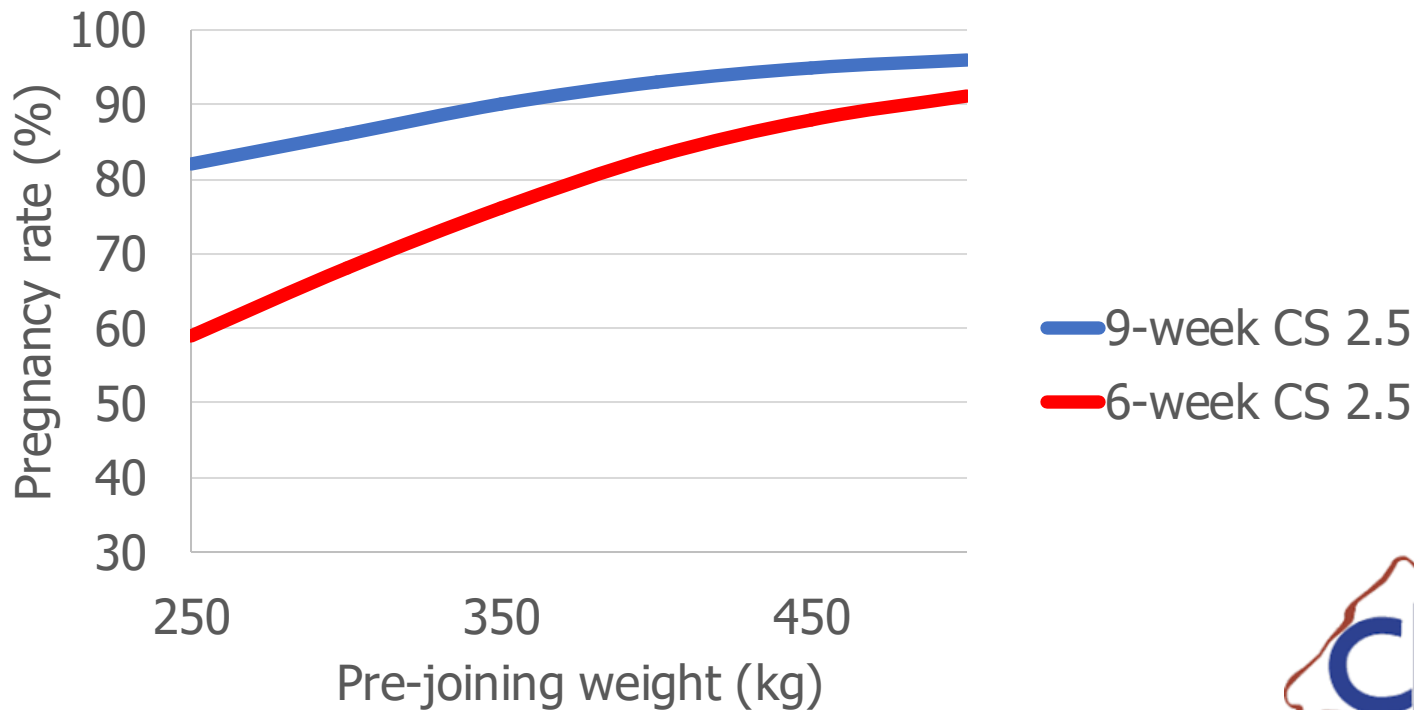
Female slaughter rate hits lowest level since 1996

02 March 2023



Source: MLA and ABS

Beef CRC – pregnancy and weight

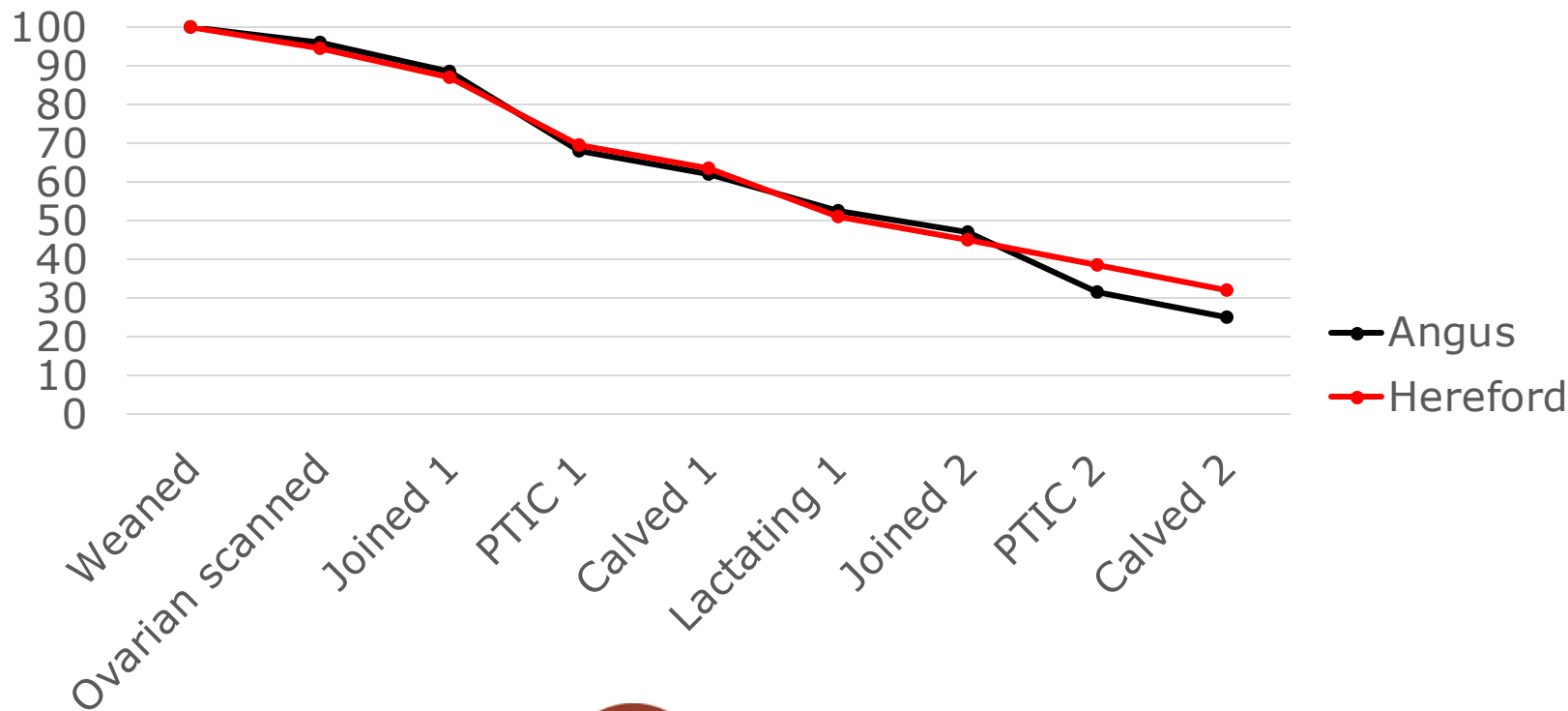


Target weight and condition at 400d

		Rib Fat (mm)								
		2	3	4	5	6	7	8	9	10
Weight (kg)	250	49	52	54	57	59	62			
	300	59	61	64	66	68	71	73	75	77
	350	68	70	72	74	76	78	80	82	83
	400	76	78	79	81	83	84	86	87	88
	450	82	84	85	86	88	89	90	91	92
	500			89	90	91	92	93	94	94

Pregnancy rates after 6 week joining

Female loss



Optimising heifer development and management to increase whole herd profit

B.GBP.0038

14,229 heifers

25 cohorts

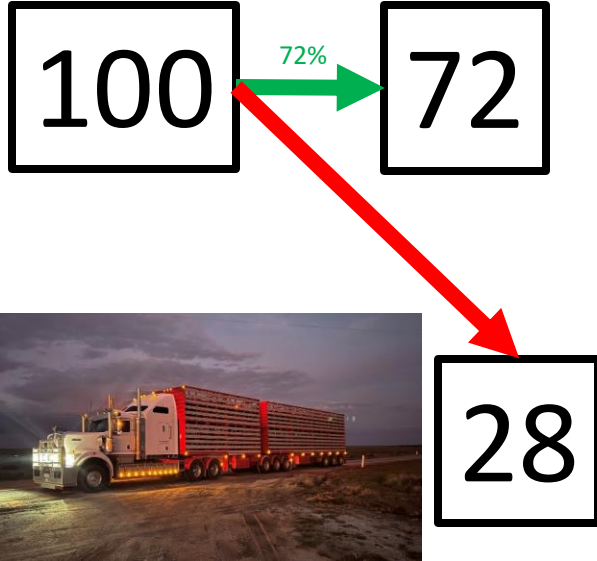
9 farms

4 states (SA, Tas, Vic, NSW)

2 breeds (Angus, Hereford)

Weaner
heifers

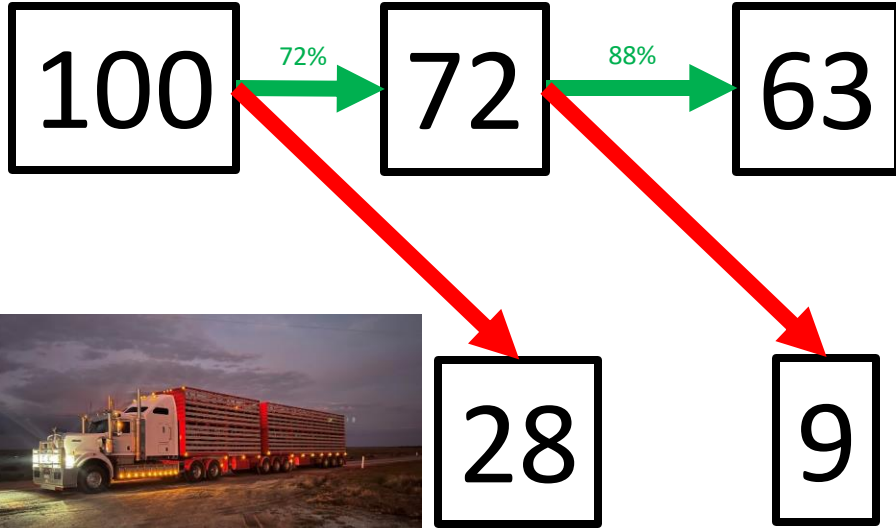
PTIC1



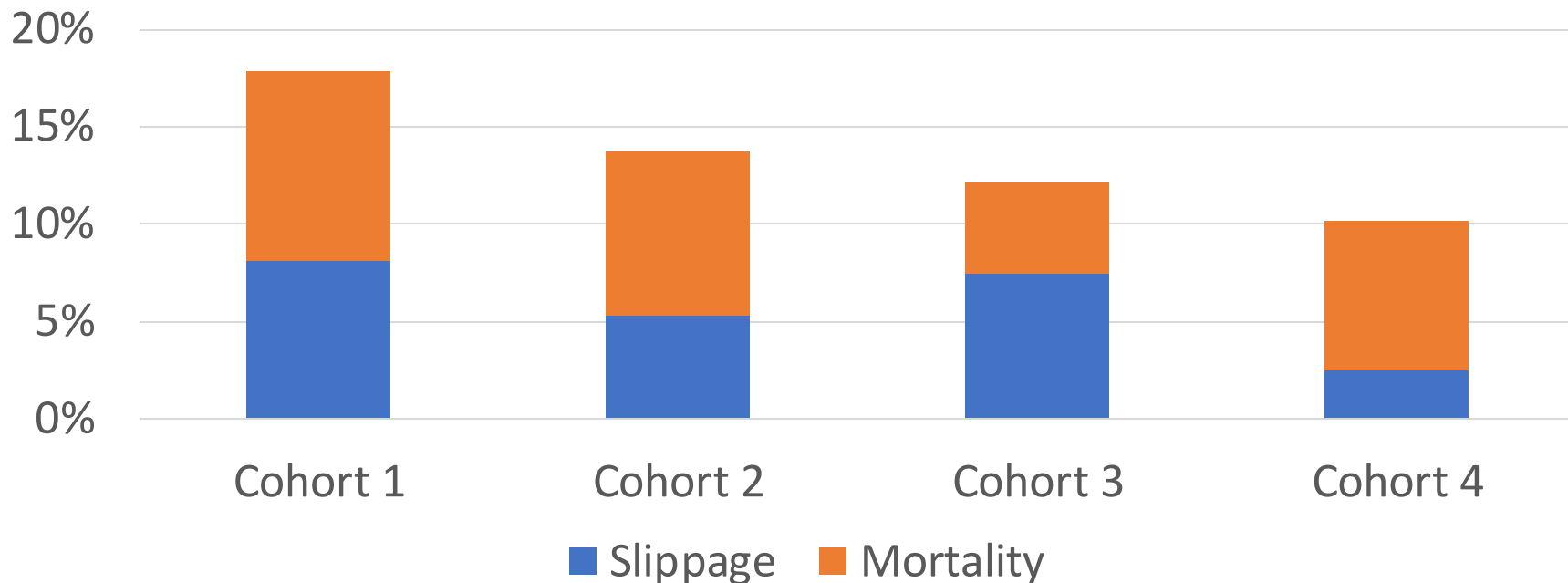
Weaner
heifers

PTIC1

Calved &
lactating

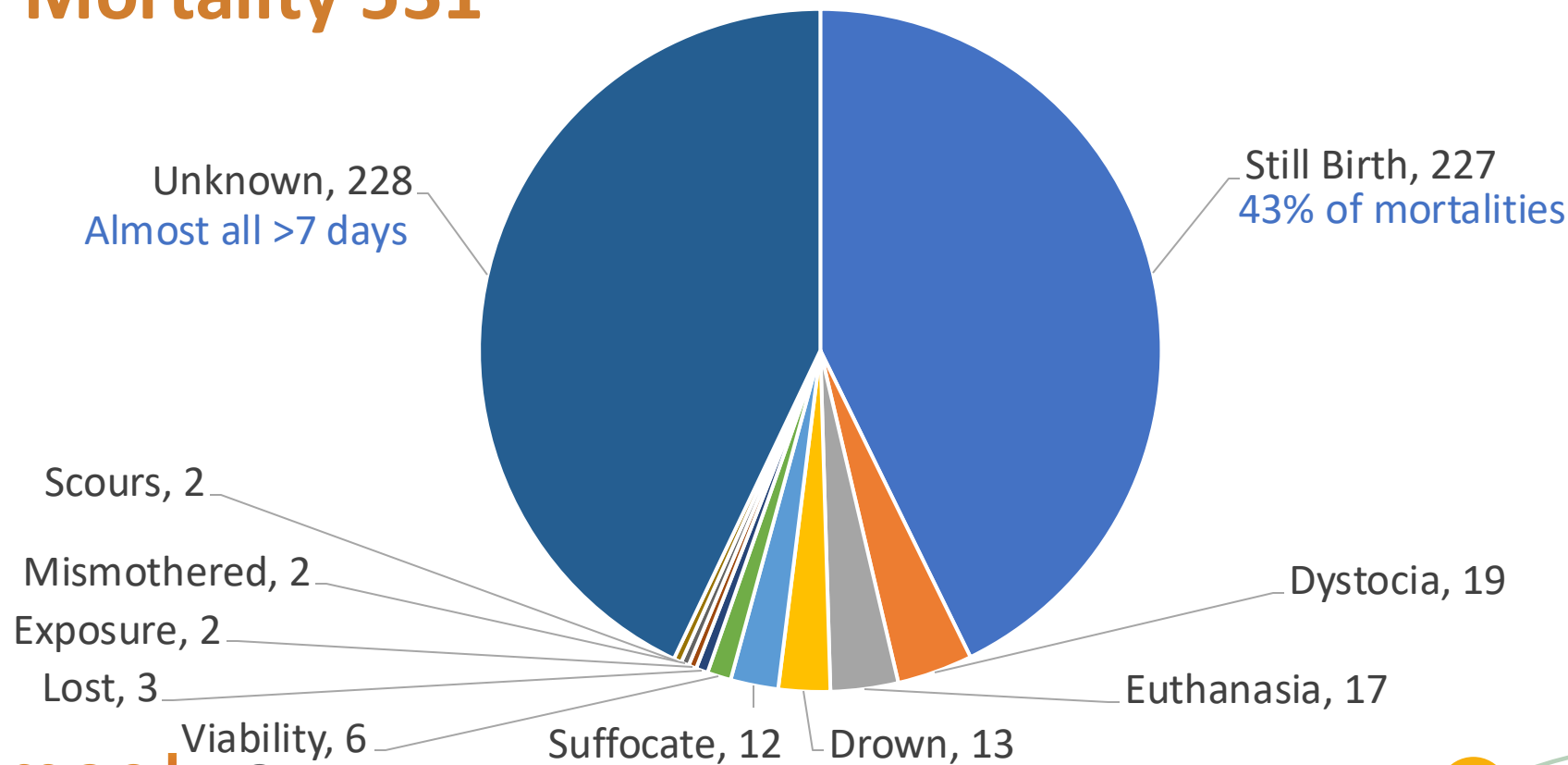


PTIC 6160, Slippage 344=5.6%, Mortality 531=7.1%



Slippage hard to record in large herd
and likely more like Cohort 4

Mortality 531

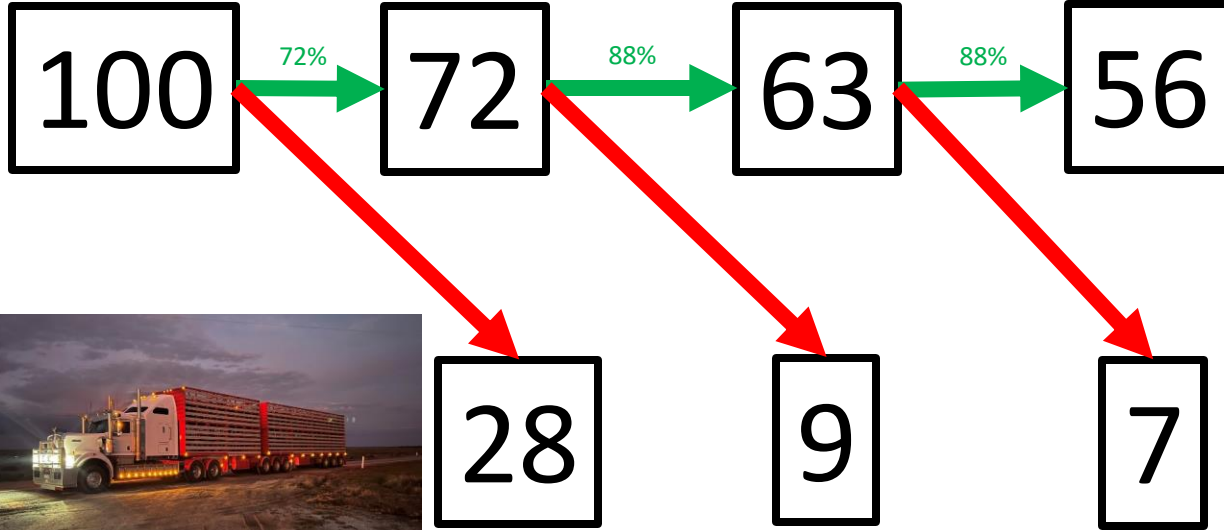


Weaner
heifers

PTIC1

Calved &
lactating

PTIC2



Wet
And
Pregnant
Early



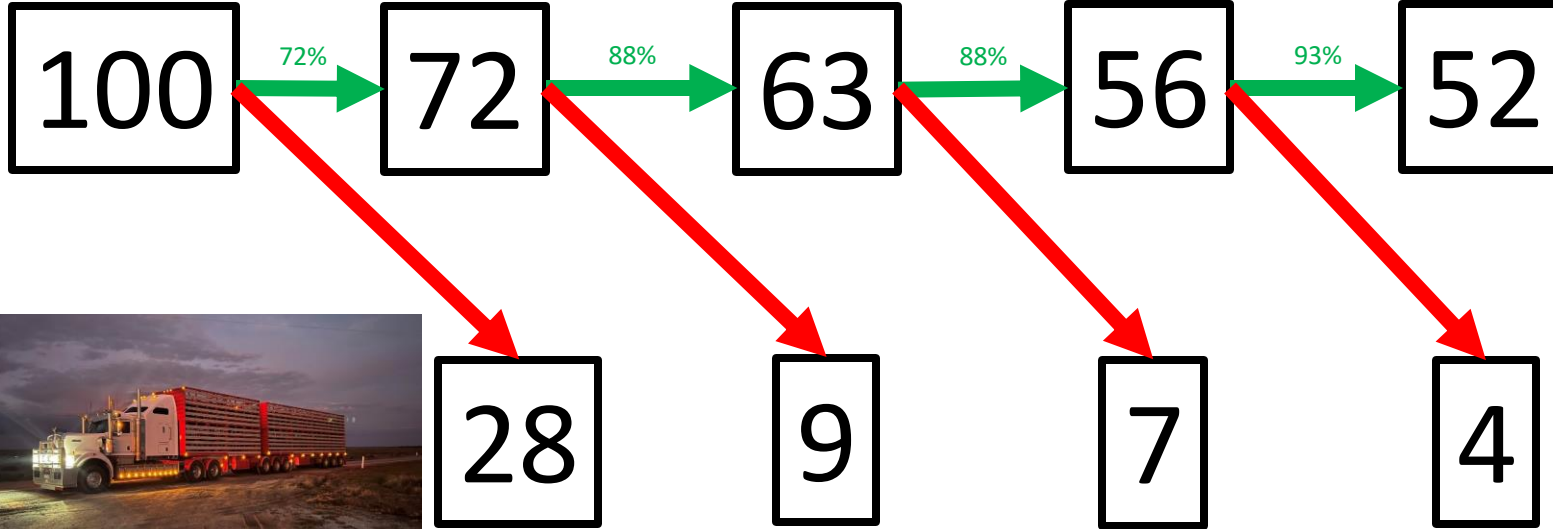
Weaner
heifers

PTIC1

Calved &
lactating

PTIC2

C&L2



Weaner
heifers

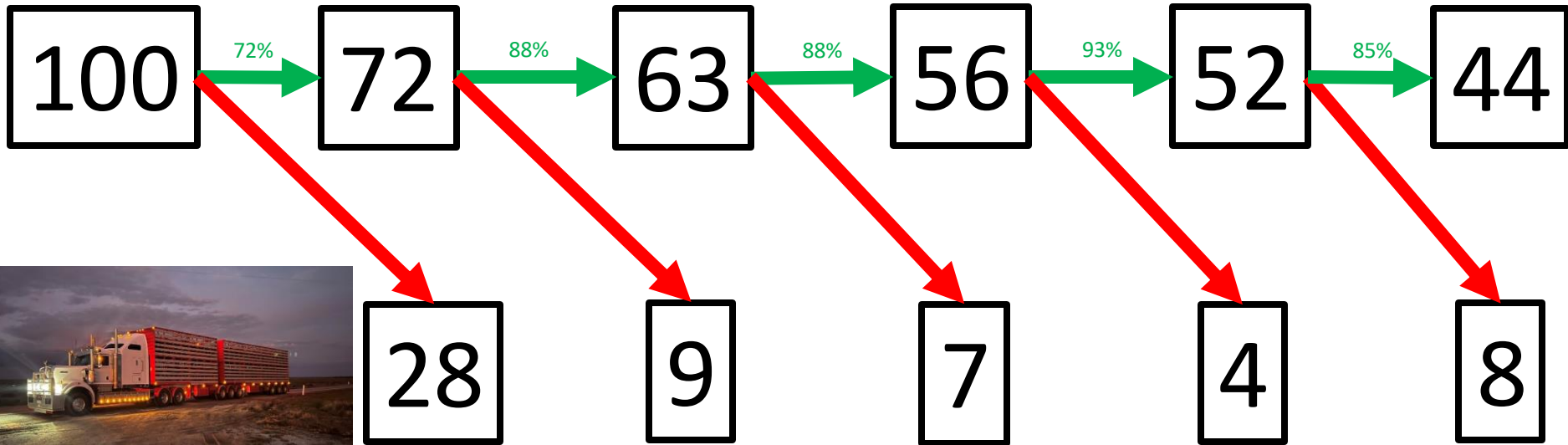
PTIC1

Calved &
lactating

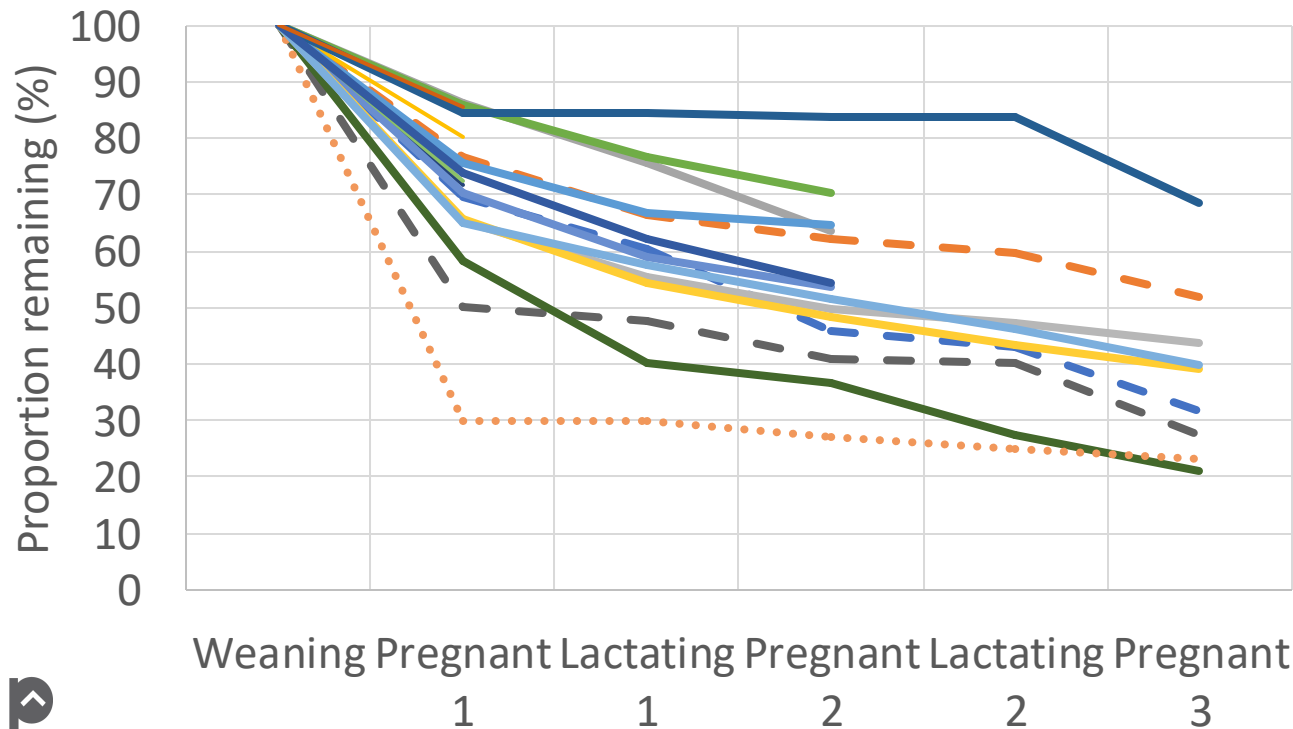
PTIC2

C&L2

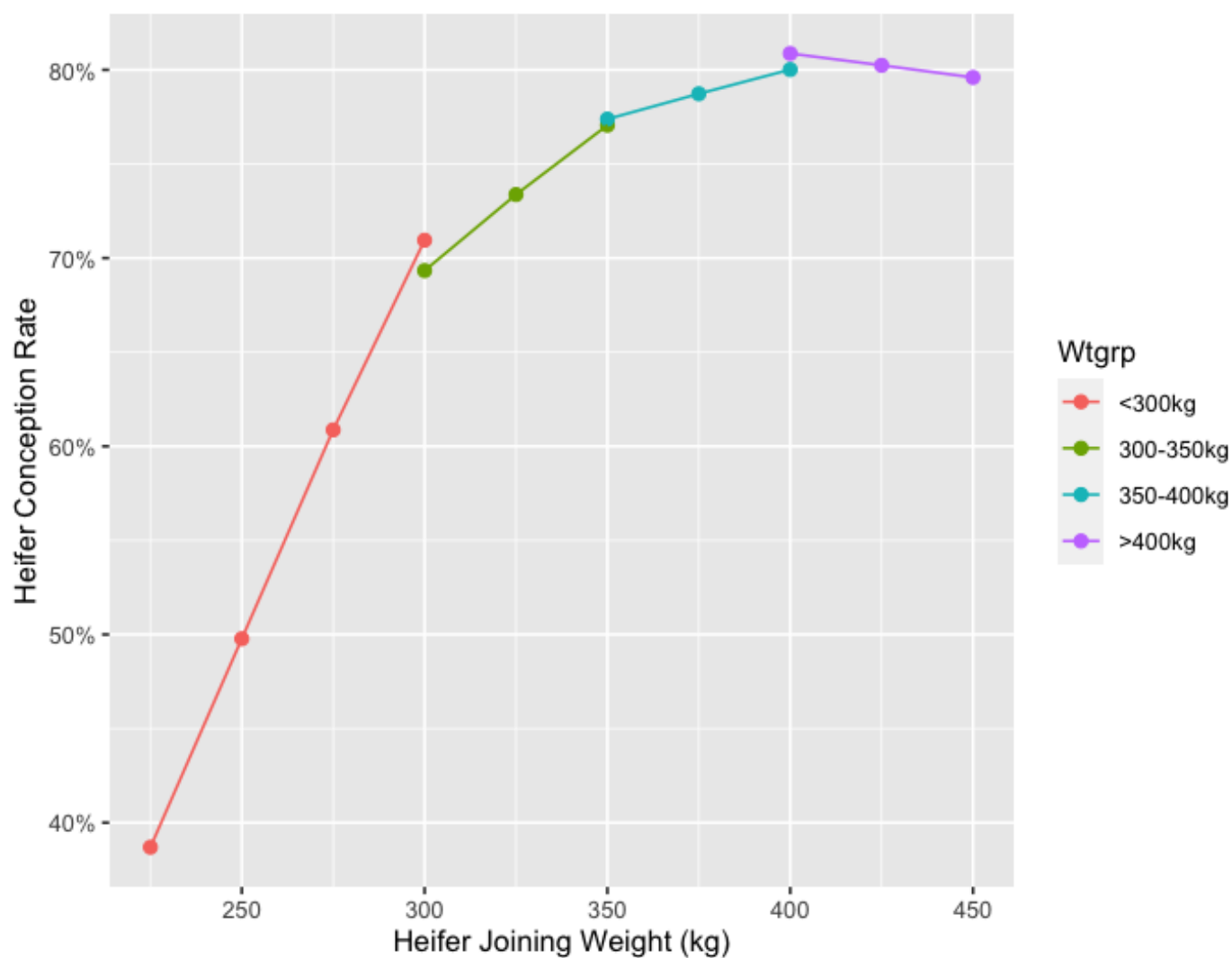
PTIC3



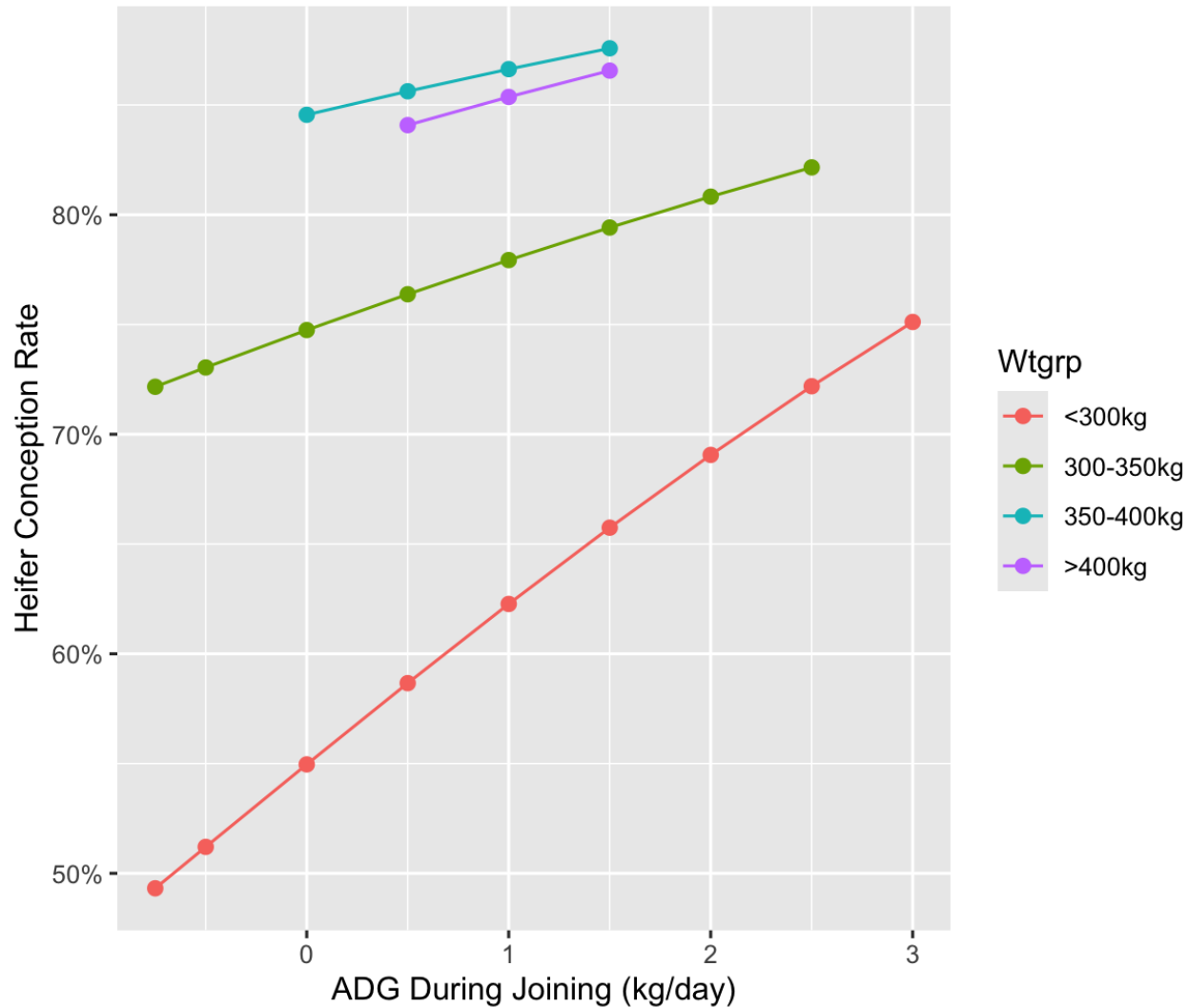
Drop out rates based on 6 week joining

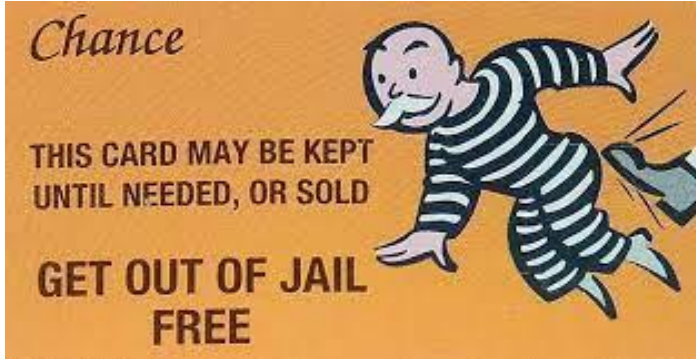


Weight



Gain

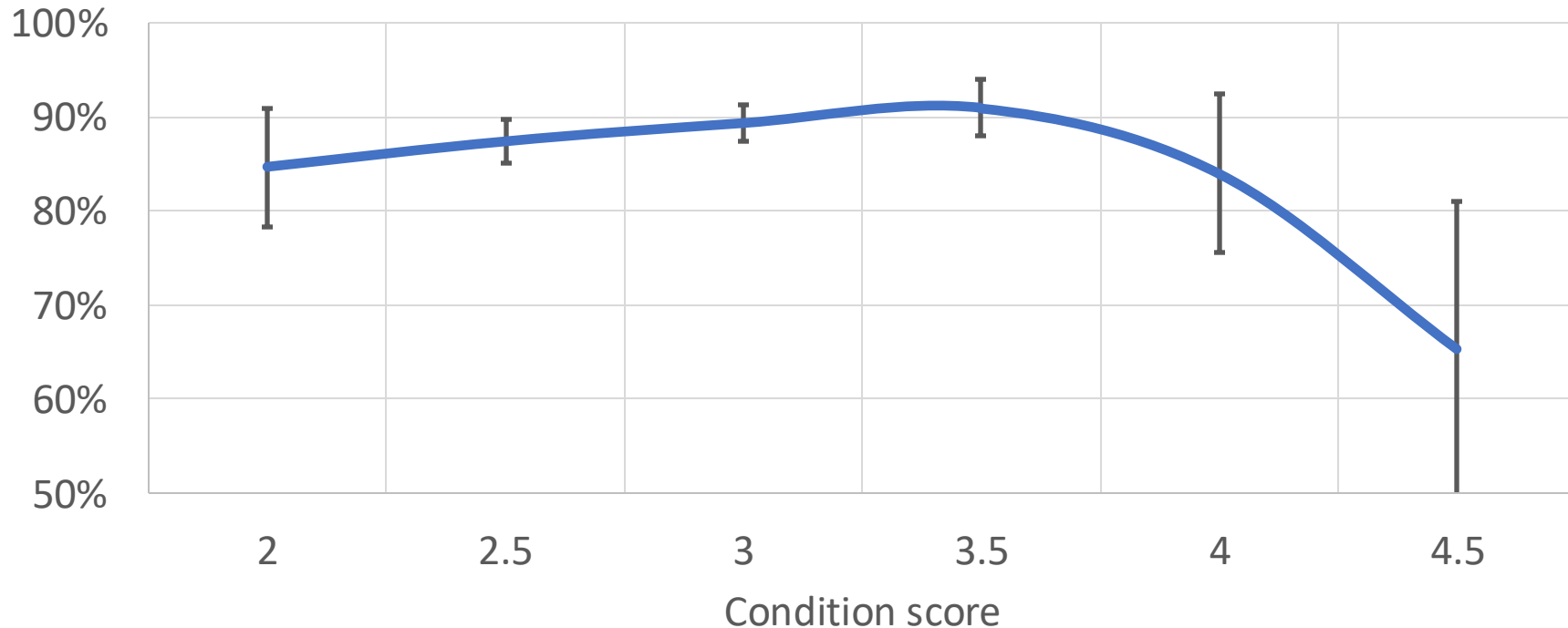




6 weeks later calves

- 30 kg lighter at weaning (155 vs 185 = 16%)
- 20 kg lighter carcasses (@7.50 = \$150)

BCS effect on 6 week rebreeding preg. rates

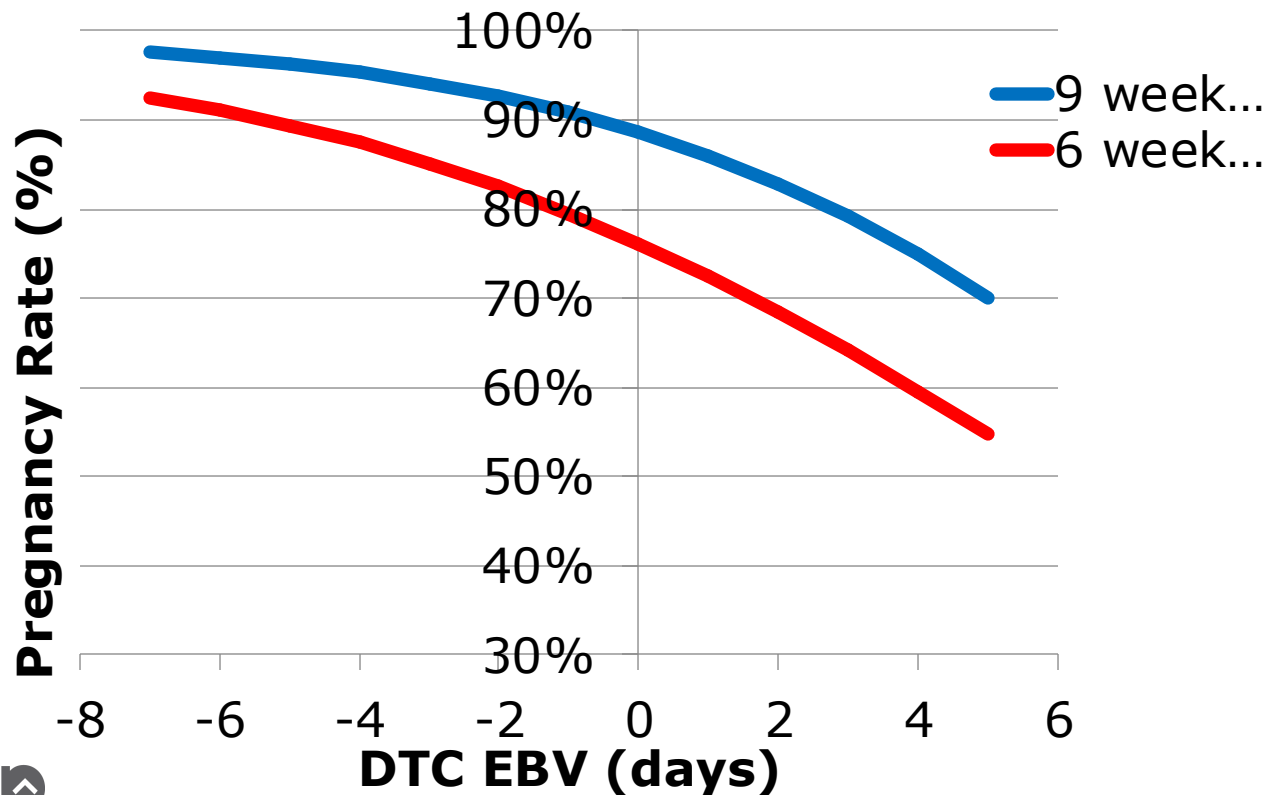


Take home messages – cows

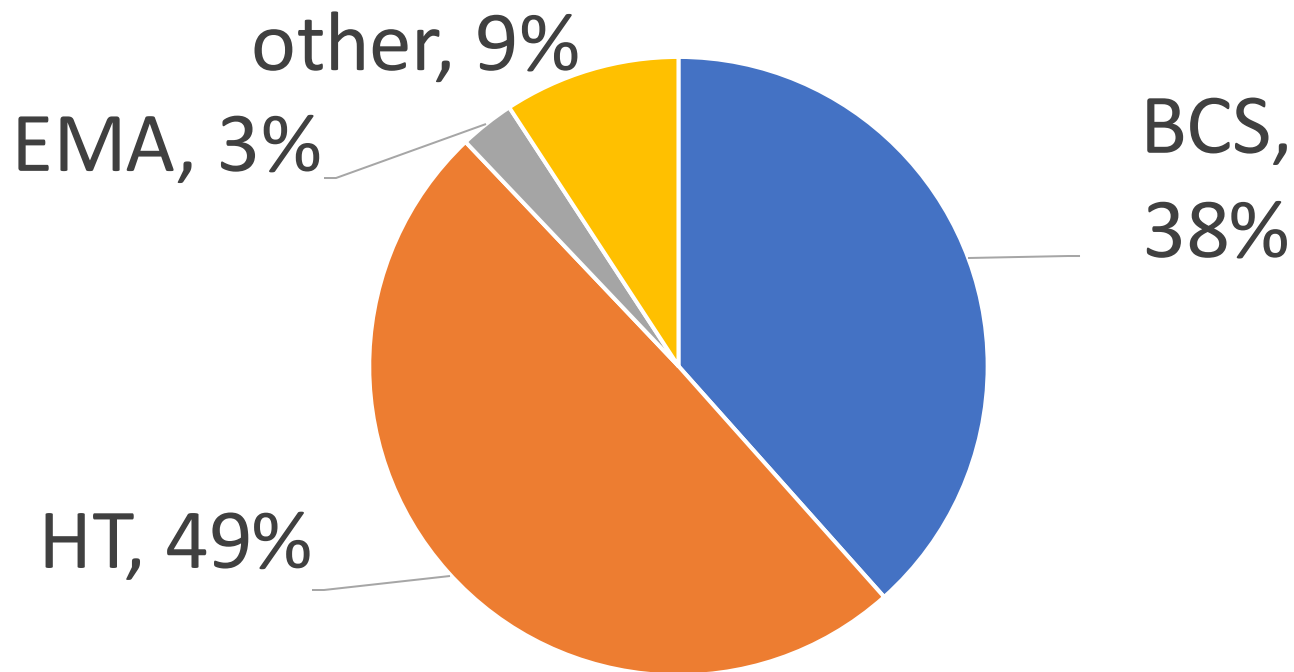
- ✓ Productivity losses significant
- ✓ Winter joining heifers >350kg
- ✓ Spring joining heifers >300kg
- ✓ Grow well, calve in BCS3
- ✓ Young herd more resilient
- ✓ Over-join, fetal aging, sell surplus PTIC



CRC – Relationship with Days to Calving EBV



Genetic variation in cow weight is associated with ...



Take home messages – bull EBVs



Primary

Calving ease
Carcass weight
Days to calving
Body condition score

Secondary

Scrotal size
Mature cow weight
Fat depth
Muscle depth

g	EBV	CE Dir	CE Dtrs	GL	BWT	200	400	600	MCW	MBC	MCH	Milk	DTC	SS	DOC	NFI-F	CWT	EMA	RIB	P8	RBV	IMF	CLAW	ANGLE	LEG	\$A	\$
al	EBV	+1.5	+0.9	-10.0	+5.9	+57	+107	+147	+140	+0.42	+9.6	+21	-5.1	+4.3	+29	+0.44	+71	+12.8	-1.4	-1.6	+1.4	+3.6	+0.70	+0.72	+0.88	\$244	
	(Acc)	(75%)	(70%)	(99%)	(99%)	(98%)	(98%)	(98%)	(96%)	(83%)	(89%)	(93%)	(61%)	(98%)	(99%)	(74%)	(90%)	(88%)	(88%)	(88%)	(82%)	(87%)	(98%)	(98%)	(97%)	(-)	
	Perc	62	75	2	88	27	16	8	8	15	23	23	43	4	21	72	45	4	80	73	6	23	22	6	13	14	

PDS Project – what did we do?

- 19 beef businesses (18,600 breeding cows) Limestone coast region of SA
- 2020 drop (R): monitored from weaning through to second calving in 2023.
- 11 property visits



Collaboration – technical expertise

- Research staff, Vets, Livestock consultants
- Access to up-to-date research and technical information



MFMG



Producer
Demonstration Site



THE UNIVERSITY
of ADELAIDE



Elke Hocking
Consulting

millicent veterinary clinic



TLC

TAILORED
LIVESTOCK
CONSULTING



T PRANCE RURAL CONSULTING



zoetis

meatup
FORUM



Combined producer heifer data

Reference weight average 660kg

Year of drop	Joining year (join length)	Av. lwt 1st joining	% SRW	Heifer conception %	Calving month & year	% calves born alive to cows calved	% assisted at calving	Heifer mortality %	Weaning % (to joined)
2018 (P)	2019	349kg	53%	76%	2020	93%	6.4%	1.3%	68%
2019 (Q)	2020	353kg	53%	80%	2021	90%	6.6%	0.4%	59%
2020 (R)	2021	372kg BCS 3.3	56%	81%	2022	93%	8%	0.8%	67%
2021 (S)	2022	380kg	58%	84%	2023	94%	4%	0.6%	74%

Monitor mob 2020 drop (R) heifer preg rates

- Autumn calving – 80%
- Winter calving – 79%
- Spring calving – 86%

2021 drop (S) heifers:

- Autumn calving – 85%
- Winter calving – 80%
- Spring calving – 86%

Combined producer second calving data

Reference weight average 660kg

Year of drop	Joining year (join length)	Av. lwt 2 nd joining & BCS	% SRW	Cow conception %	Calving month & year	% calves born alive to cows calved	% assisted at calving	Cow mortality %	Weaning % (to joined)
2017 (N)	2019	518kg	80%	88%	2020	96%	1%	1.3%	82%
2018 (P)	2020	534kg	82%	88%	2021	94%	1%	0.5%	85%
2019 (Q)	2021	550kg	85%	88%	2022	98%	0.7%	0%	85%
2020 (R)	2022	523kg	85%	92%	2023	98%	0%	0.6%	89%

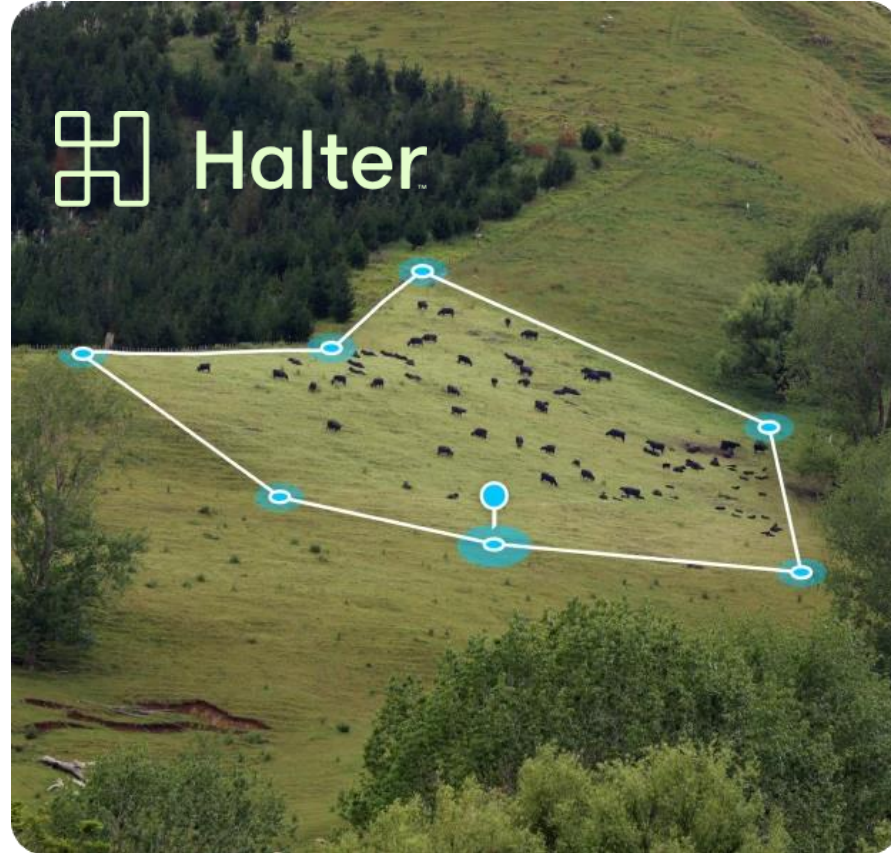
- Despite most producers wanting to lift conception rates in second calving cows, baseline data indicates it was already good
- Calves born alive to cows was high PTIC 90-94% (heifers) and 94-98% (second calvers).



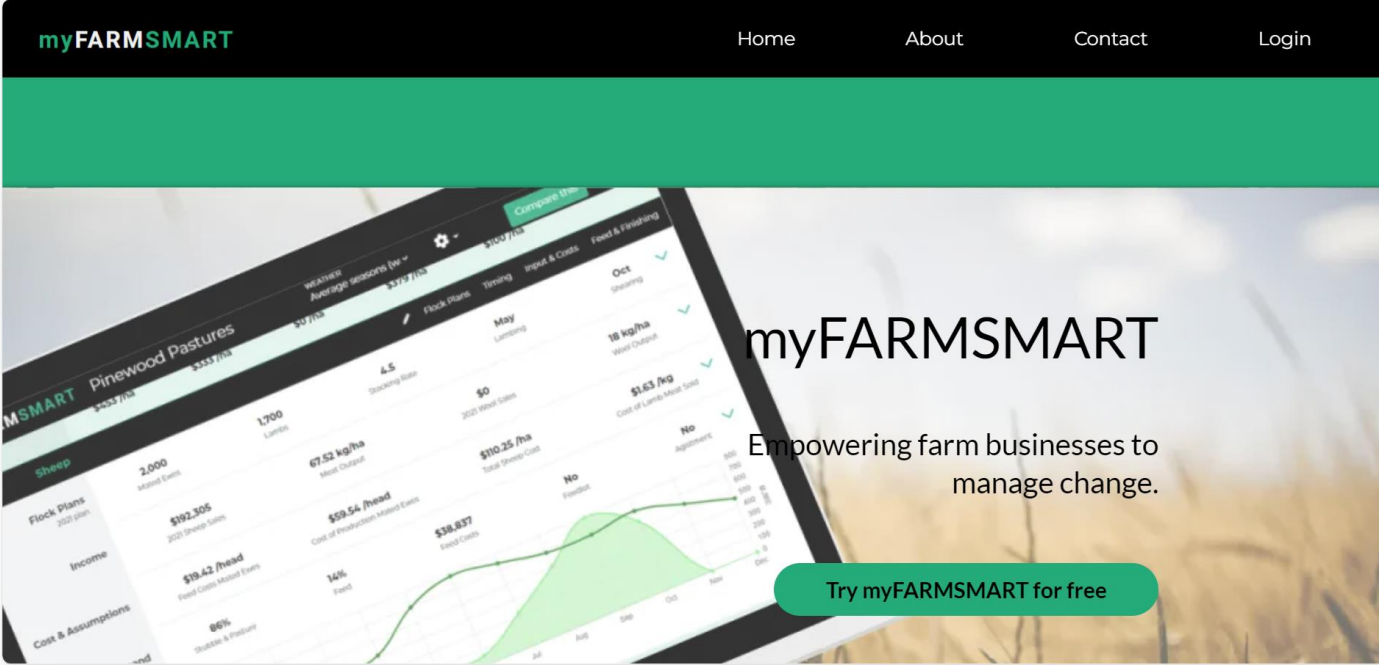
Profitable & Resilient Southern Beef Herds

- Long-term learning pathway for southern beef producers – MBfP 2.0
- Upskill 200 producers and reach up to 100,000 breeding cows
- Stacked extension and adoption program that has a proven impact
- Cow health team focused on quantifying issues and lifting performance
- 20 livestock advisors upskilled (including new entrants)
- Greater capacity of producers and advisors to better manage risk and make more informed decisions
- Legacy supported learning package with a community of trained advisors

Profitable & Resilient Southern Beef Herds



WA Calving time and business planning



The image displays the myFARMSMART website interface. The top navigation bar includes links for Home, About, Contact, and Login. The main content area features a dashboard with various farm management metrics and a line graph. The dashboard includes sections for Sheep, Flock Plans, Income, and Cost & Assumptions. The line graph shows a trend over time, with a green area under the curve. The text "myFARMSMART" is prominently displayed in the center, followed by the tagline "Empowering farm businesses to manage change." and a button that says "Try myFARMSMART for free".

myFARMSMART

Empowering farm businesses to manage change.

Try myFARMSMART for free

Virtual Farm Tour – Addressing the Autumn feed gap

John Kidman

Nick Clarke

Todd Woodard

Lunch

60 minutes

Moneyball for sheep

James Starling

Feeding through lambing

Sam Clothier

Toby Hassell

Deb Scammell

Sam Clothier

Business: GW & CJ Clothier and Son's

Farming: 800ha at Woolumbool

Enterprise: Sheep, trade cattle and laying hens

Toby Hassell

Business: Piccaninny

Farming: 1100ha near Beachport

Enterprise: Beef and Sheep









Questions?

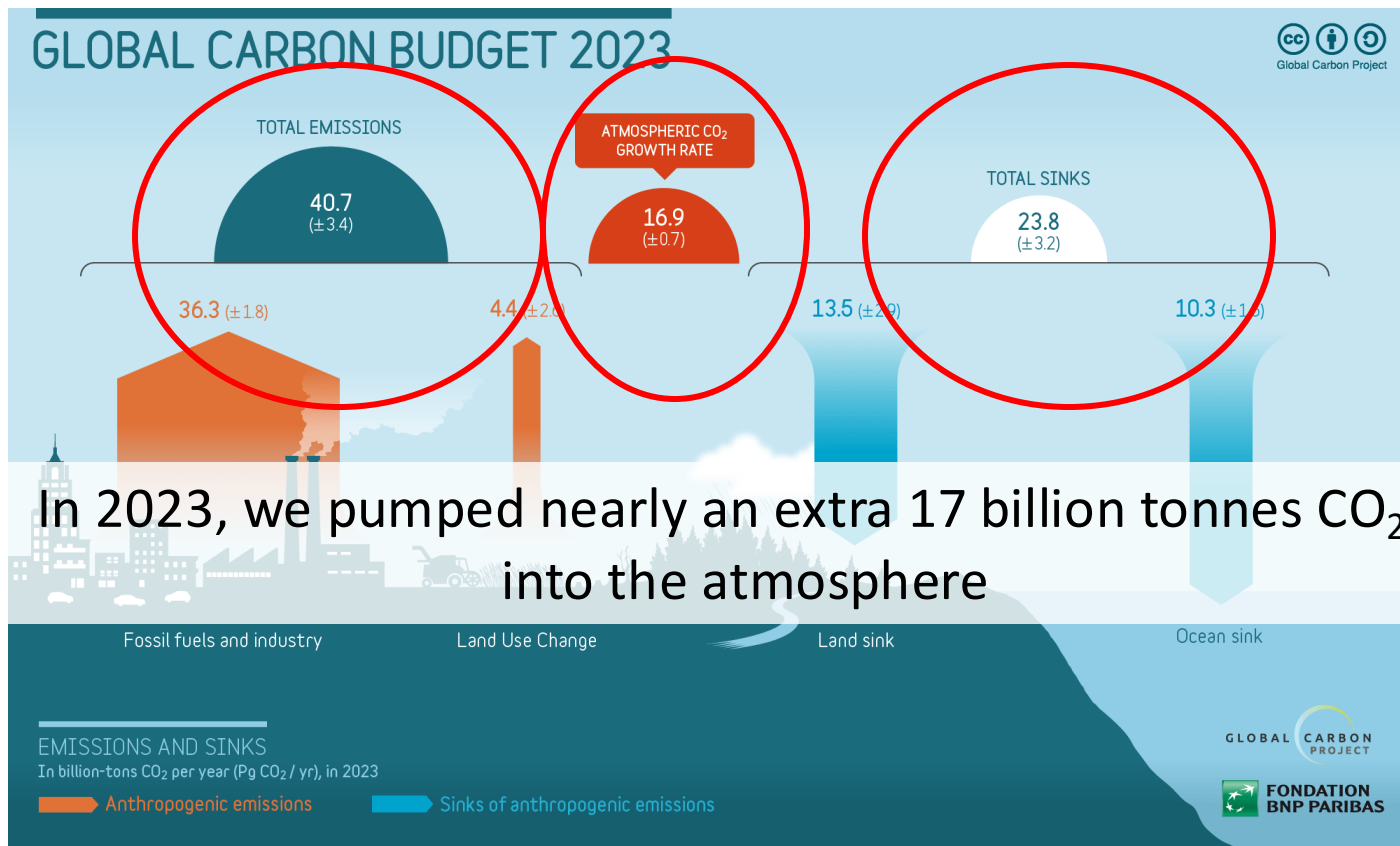
Take home messages

- Prevent ewes being hungry
- Look at nutritional requirements
- Look at balance of nutrition
- Different feeding methods work for different people

Pathways for on-farm reductions in carbon emissions

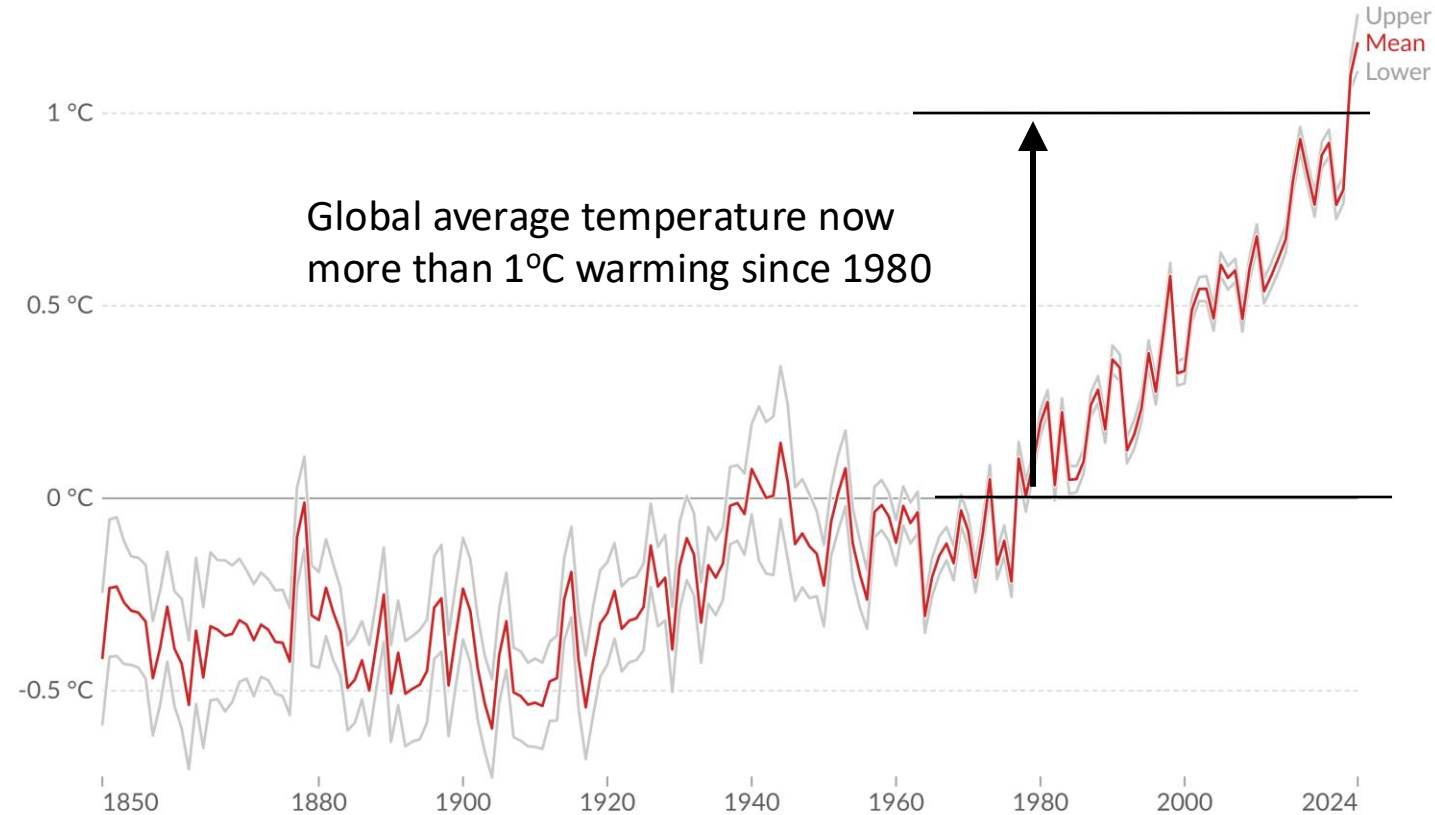
Dr. Karen Christie-Whitehead

Why do we need to reduce GHG emissions?



Average temperature anomaly, Global

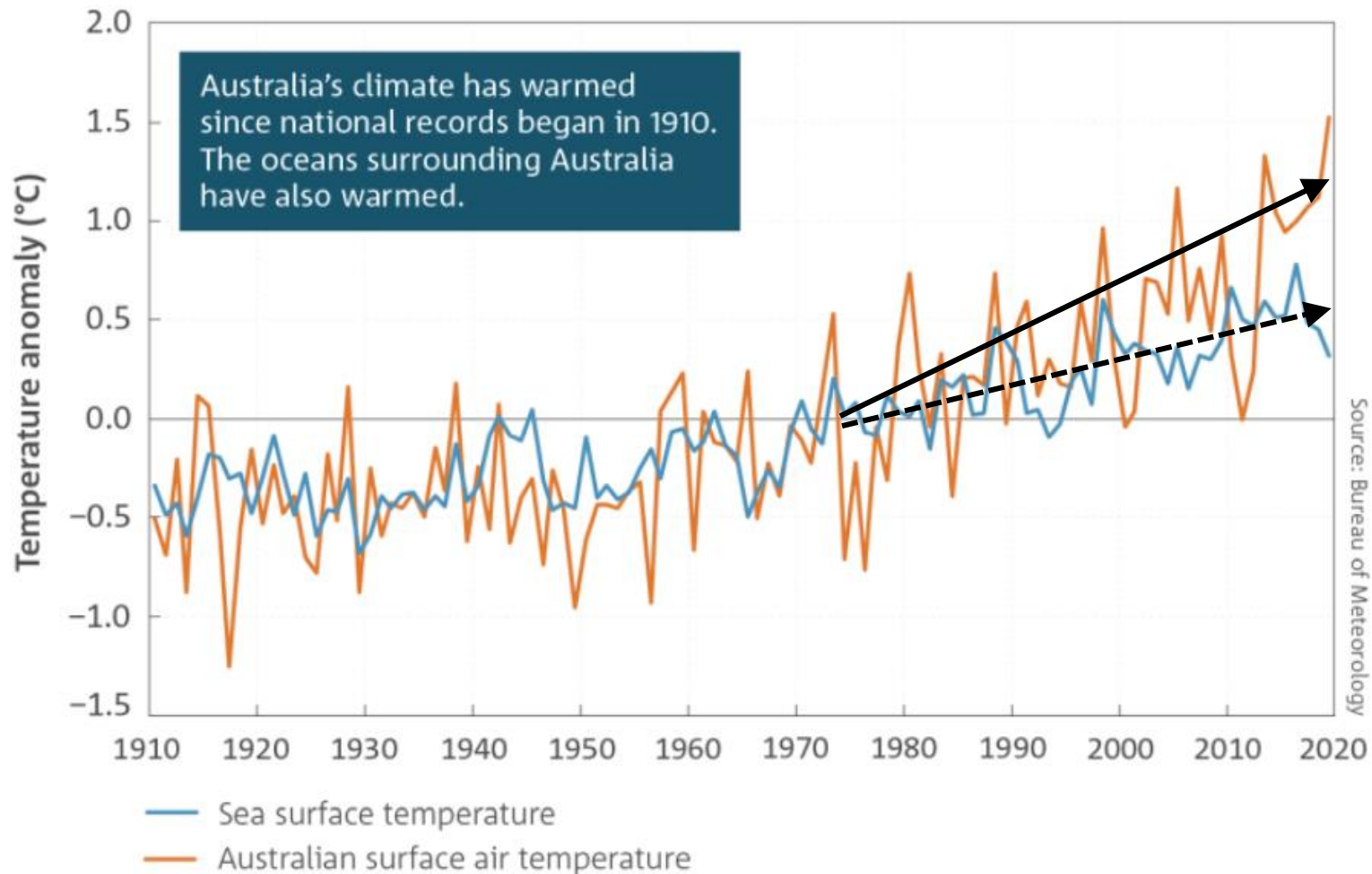
Global average land-sea temperature anomaly relative to the 1961-1990 average temperature baseline.



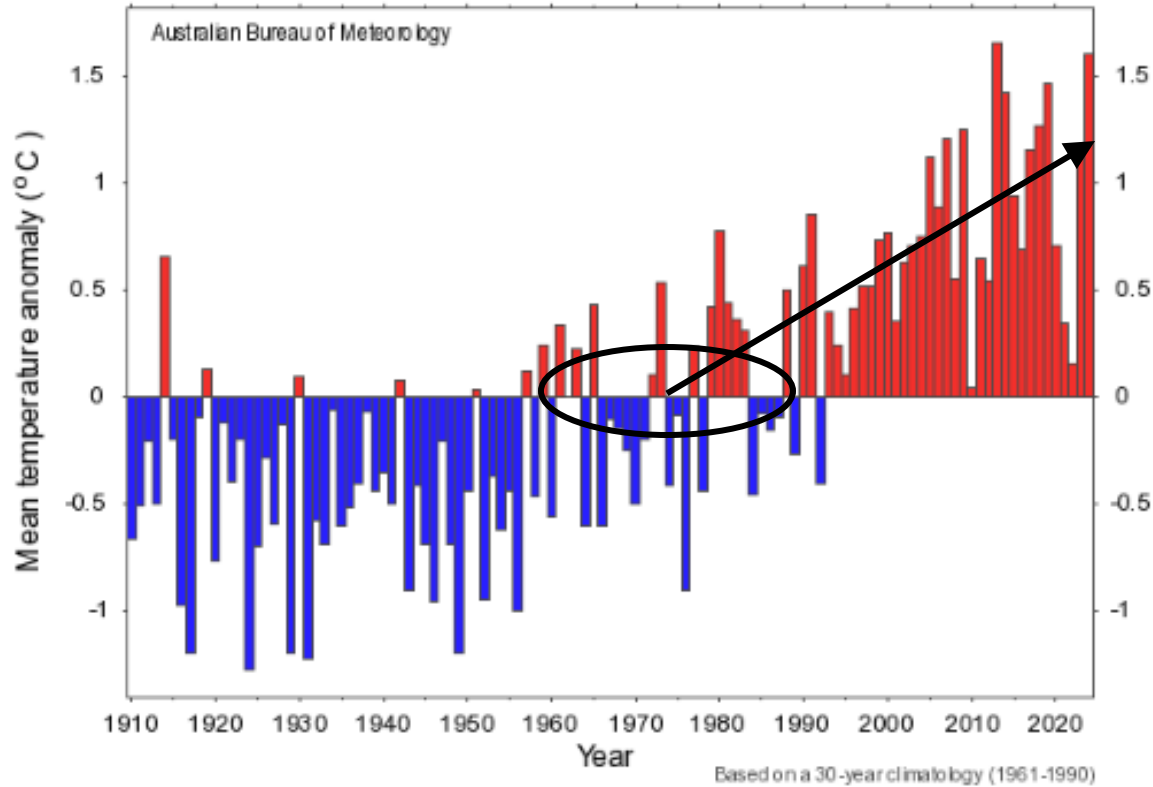
Data source: Met Office Hadley Centre (2024)

OurWorldinData.org/co2-and-greenhouse-gas-emissions | CC BY

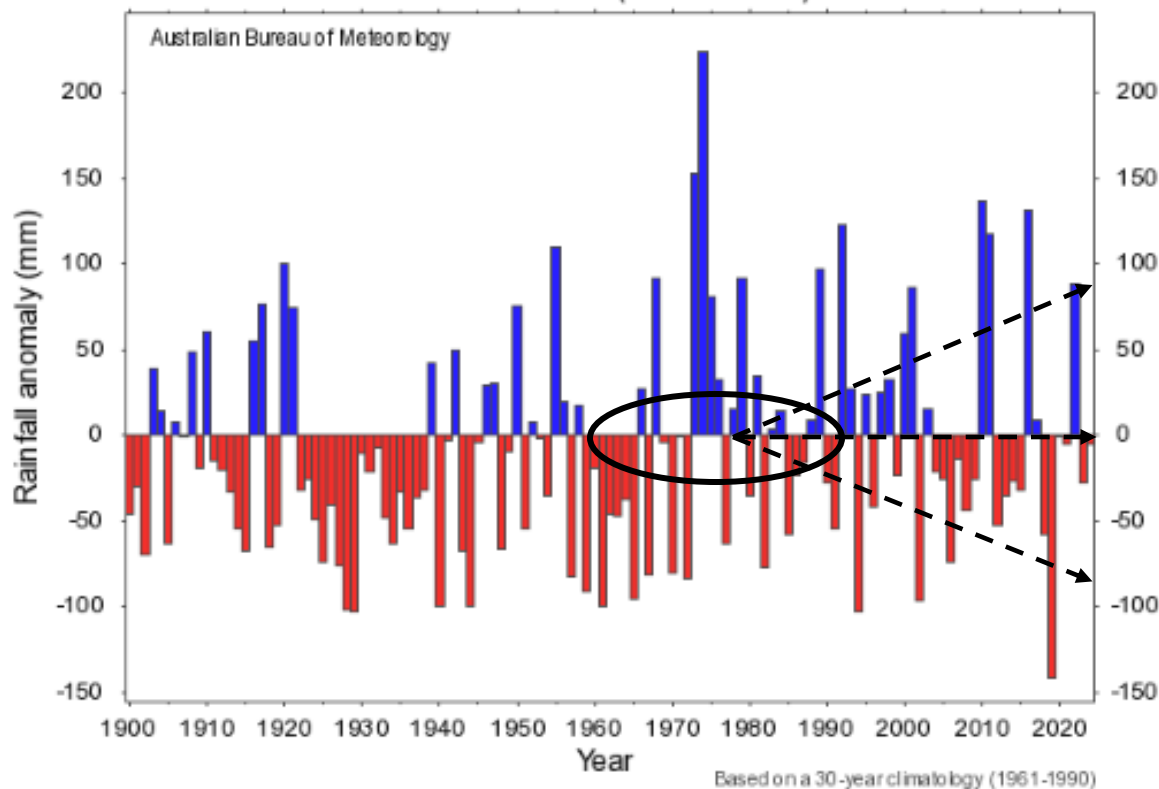
Note: The gray lines represent the upper and lower bounds of the 95% confidence interval.



Annual mean temperature anomaly South Australia (1910 to 2024)



Annual rainfall anomaly South Australia (1900 to 2024)

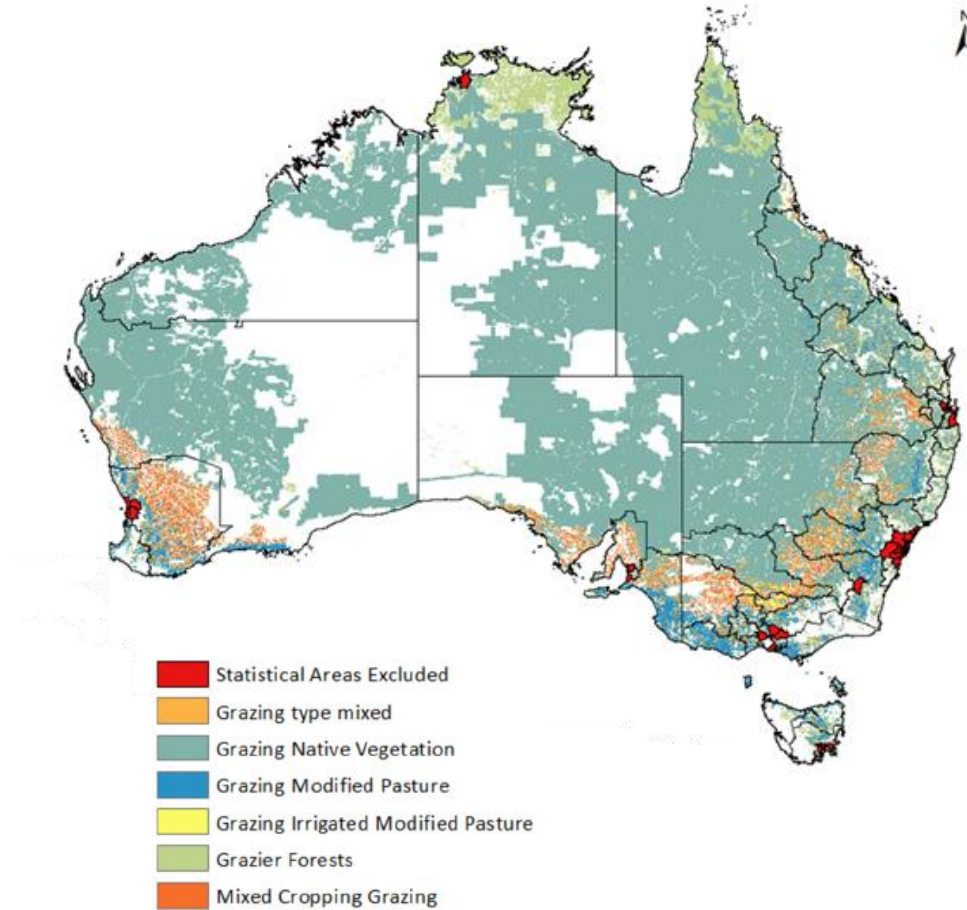


Why do we need to reduce GHG emissions?

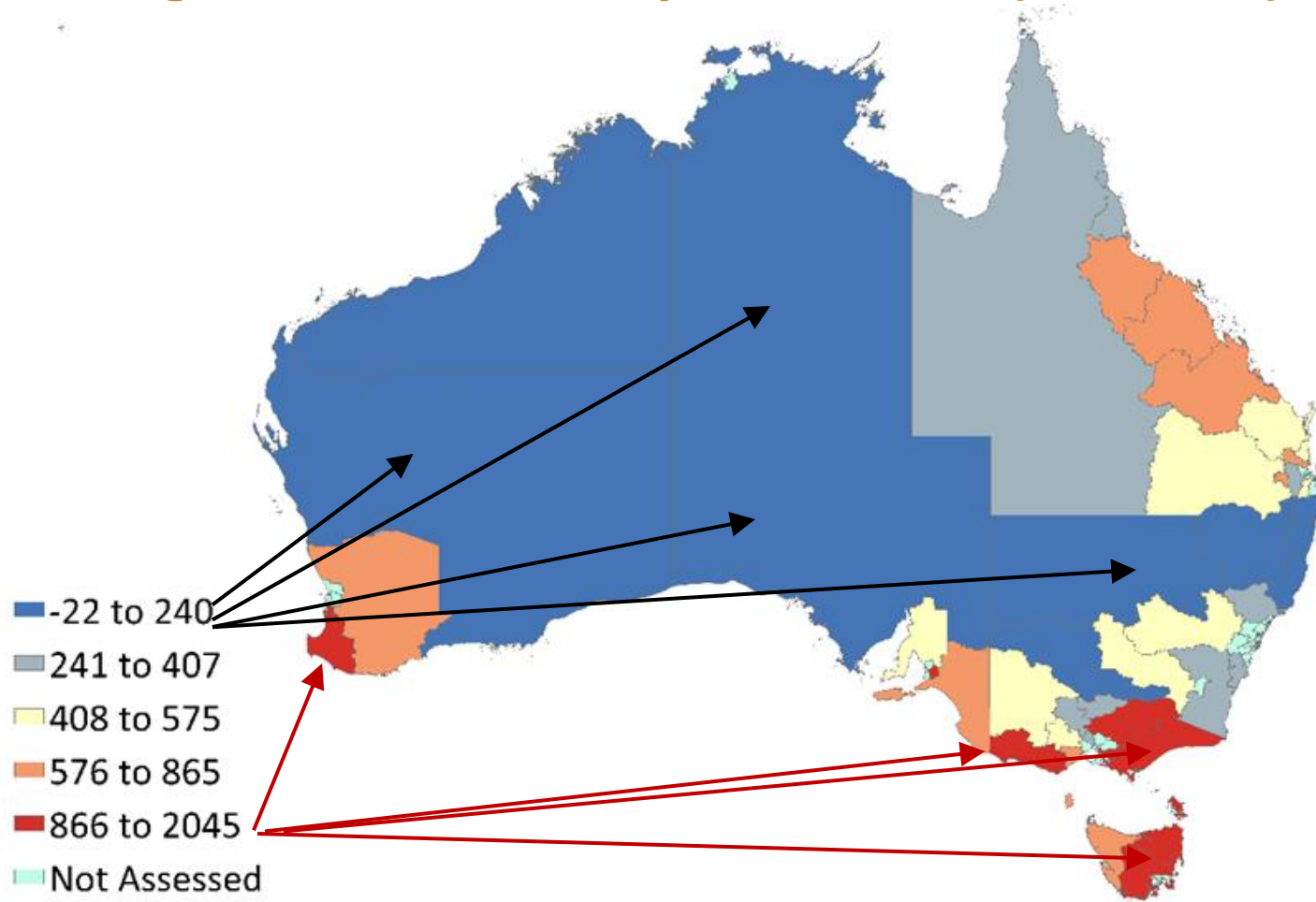
- Greenhouse gas emissions are lost “opportunities”
- Methane represents a lost energy source that could be rediverted into product
- Optimising key inputs such as nitrogen-based fertilisers to reduce nitrous oxide and carbon dioxide emissions
- Maximising stock productivity
- Loss of tree carbon -> animal welfare (shade/shelter) for your stock, habitat for native animals, vegetation biodiversity, aesthetics
- Loss of soil carbon -> lower nutrients, lower water-holding capacity
- Access to markets, social licence, risk of being ‘taxed’ for export products, price premiums, bank loans etc

Is the livestock sector *en route* to net zero?

- 46 statistical (SLA4) areas examined
- 99.5% of Australia's red meat enteric methane emissions
- Estimated livestock/soils emissions and grasslands emissions/sinks from national inventory data (**net source**)
- Estimated changes in tree vegetation carbon sequestration using FLINTpro (**net sink (or source if being lost)**)
- Difference is **net emissions**



Average net emissions per hectare (2010-20)



Net GHG emissions (Mt CO₂-e)

240

190

140

90

40

-10

2010/11

2011/12

2012/13

2013/14

2014/15

2015/16

2016/17

2017/18

2018/19

2019/20

Enteric

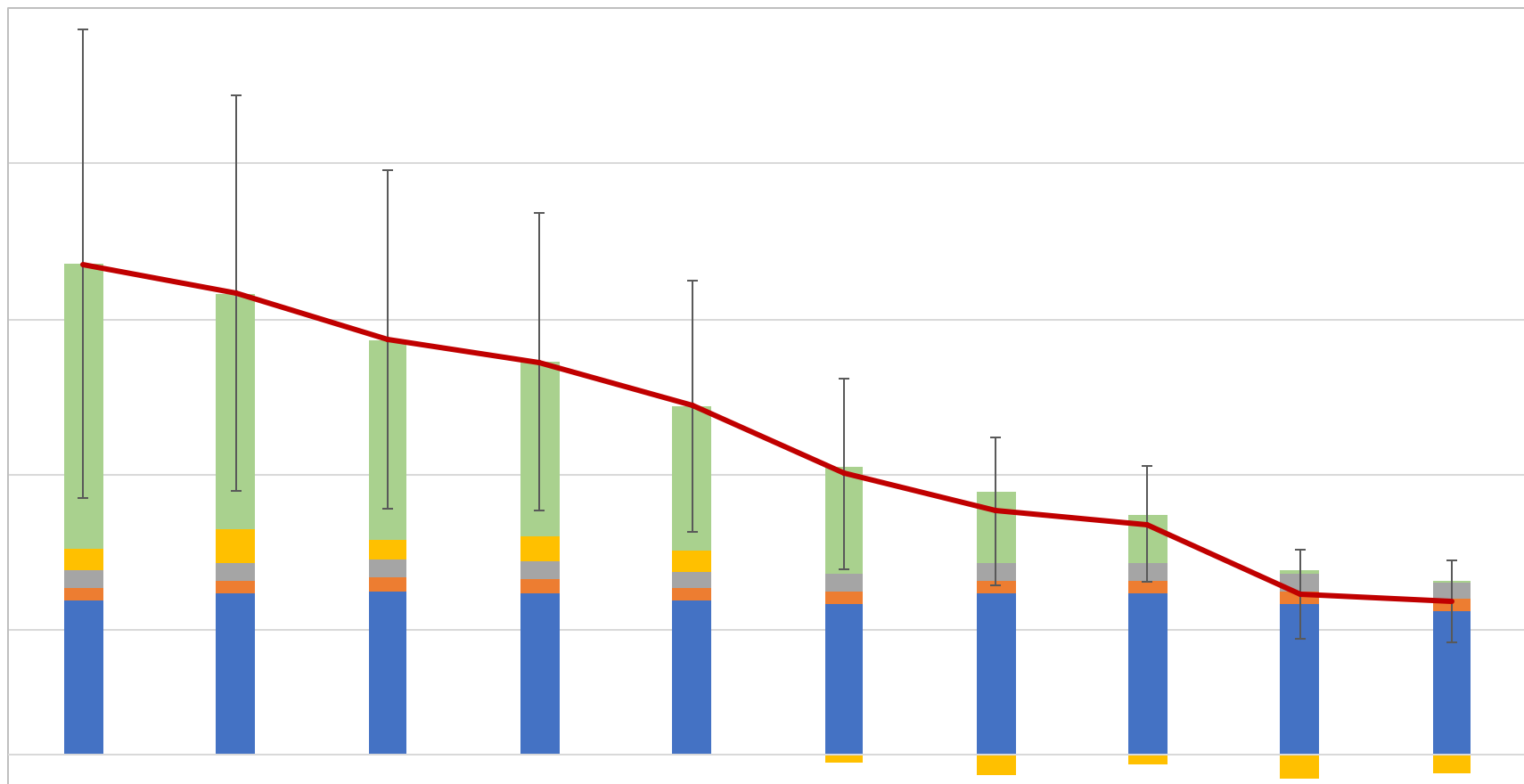
Manure

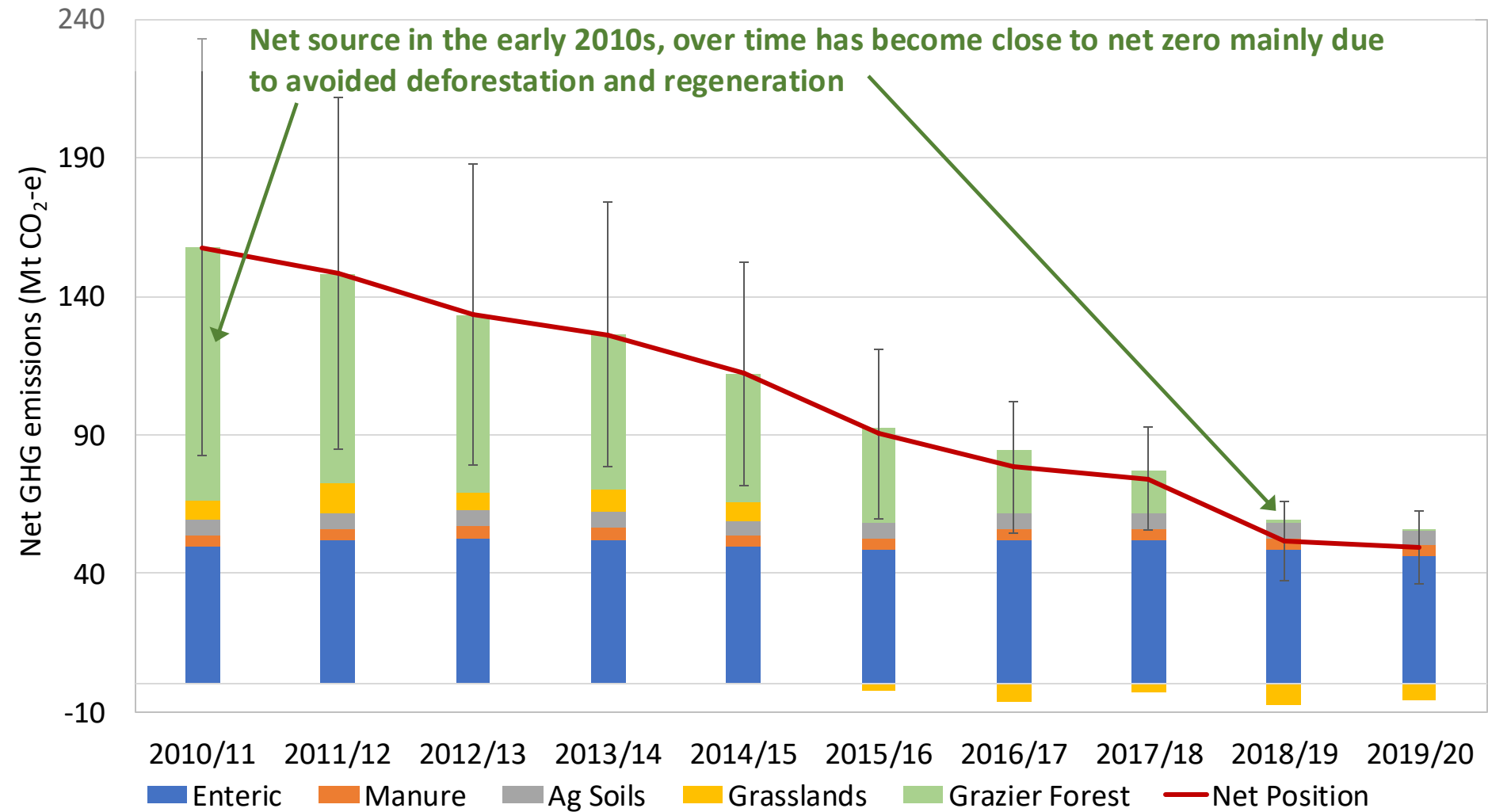
Ag Soils

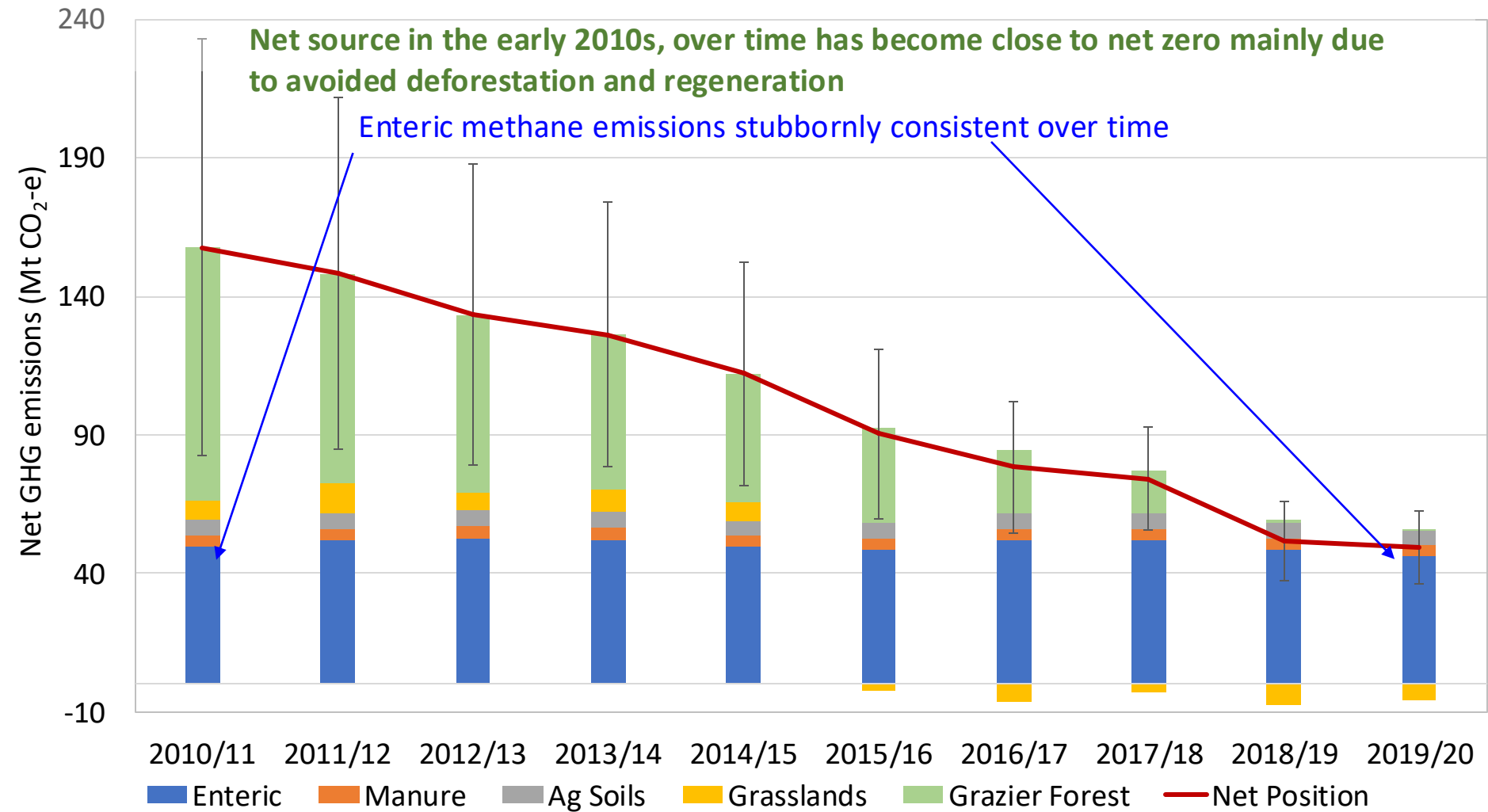
Grasslands

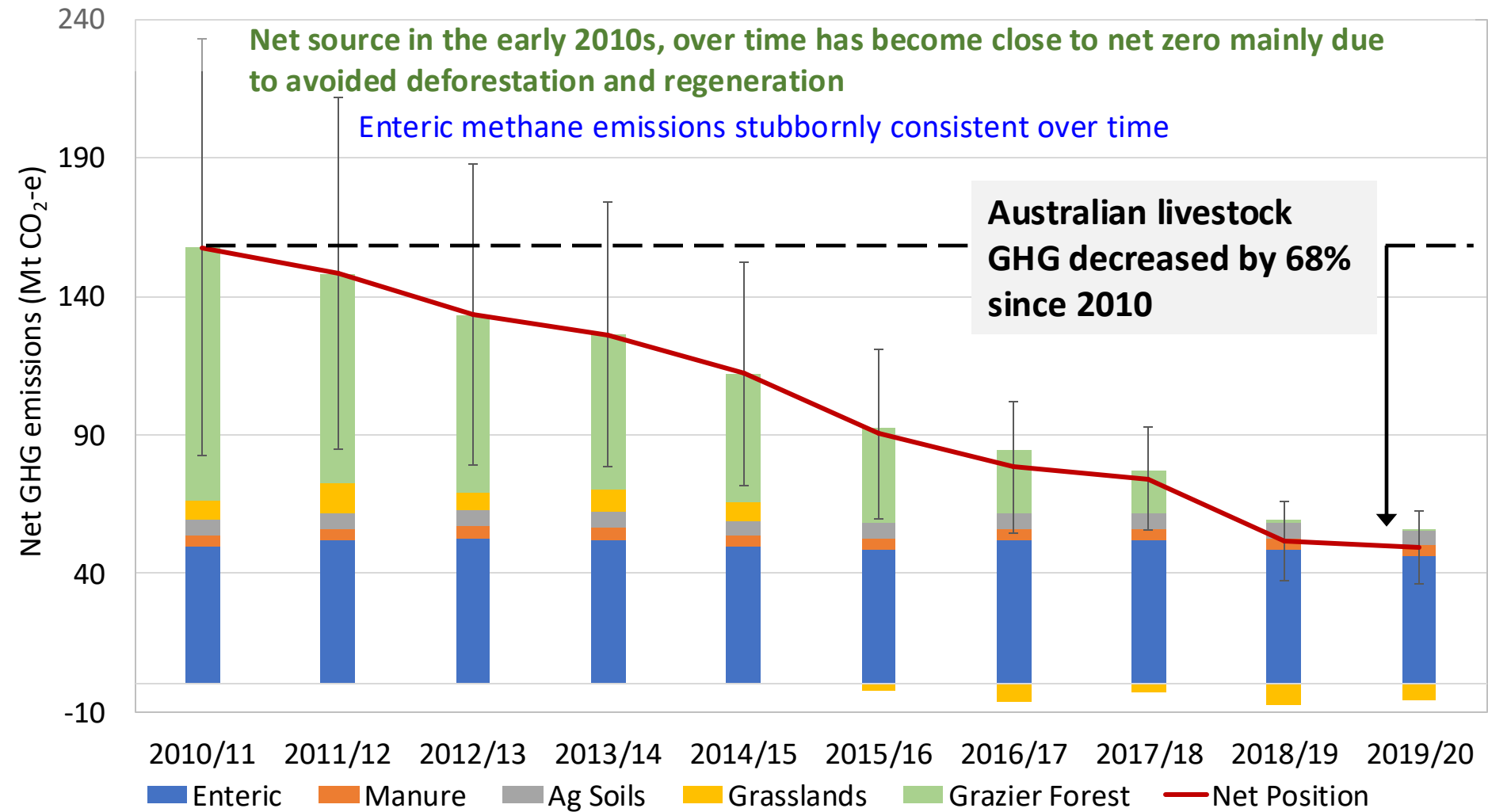
Grazier Forest

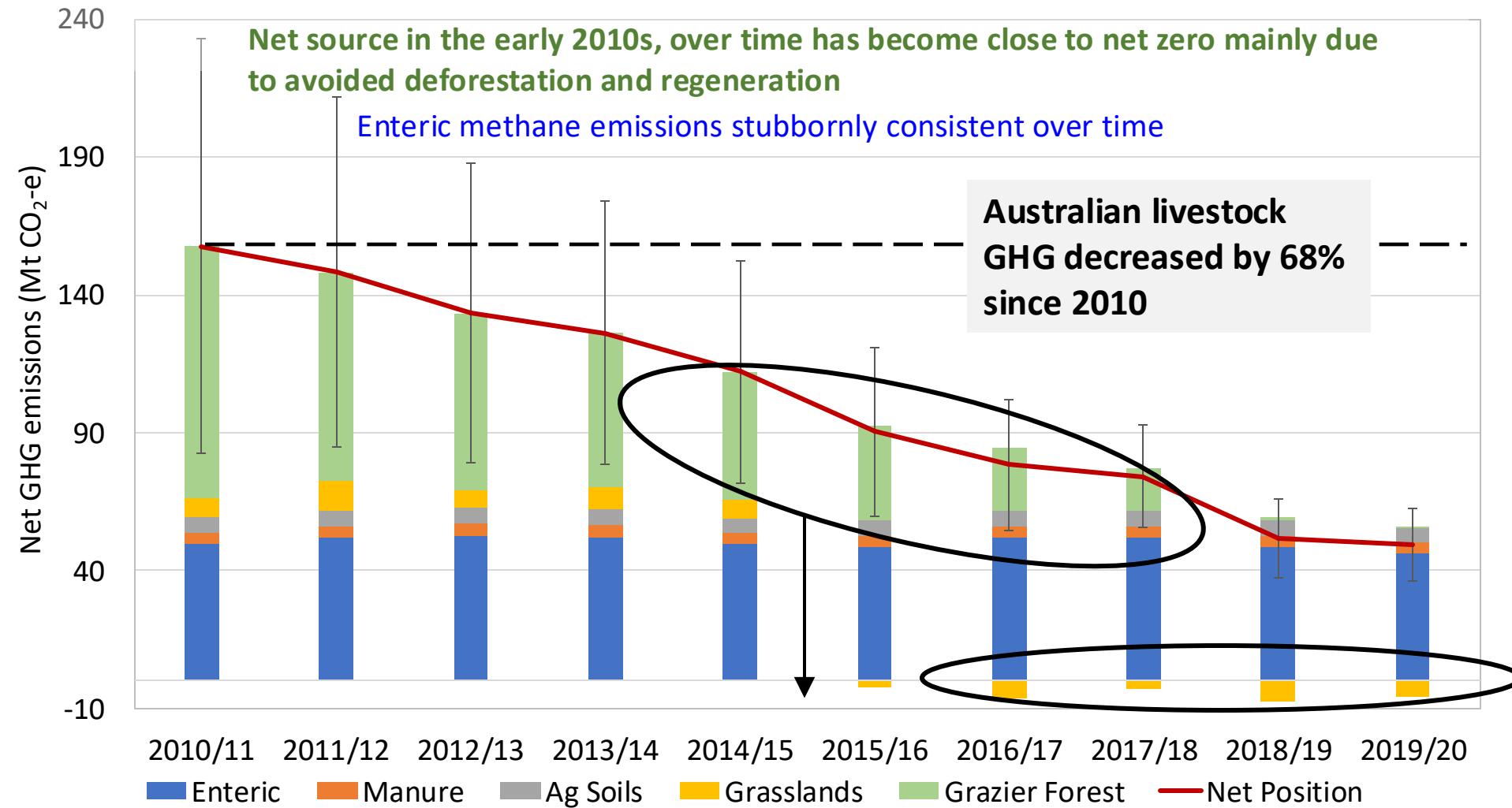
Net Position

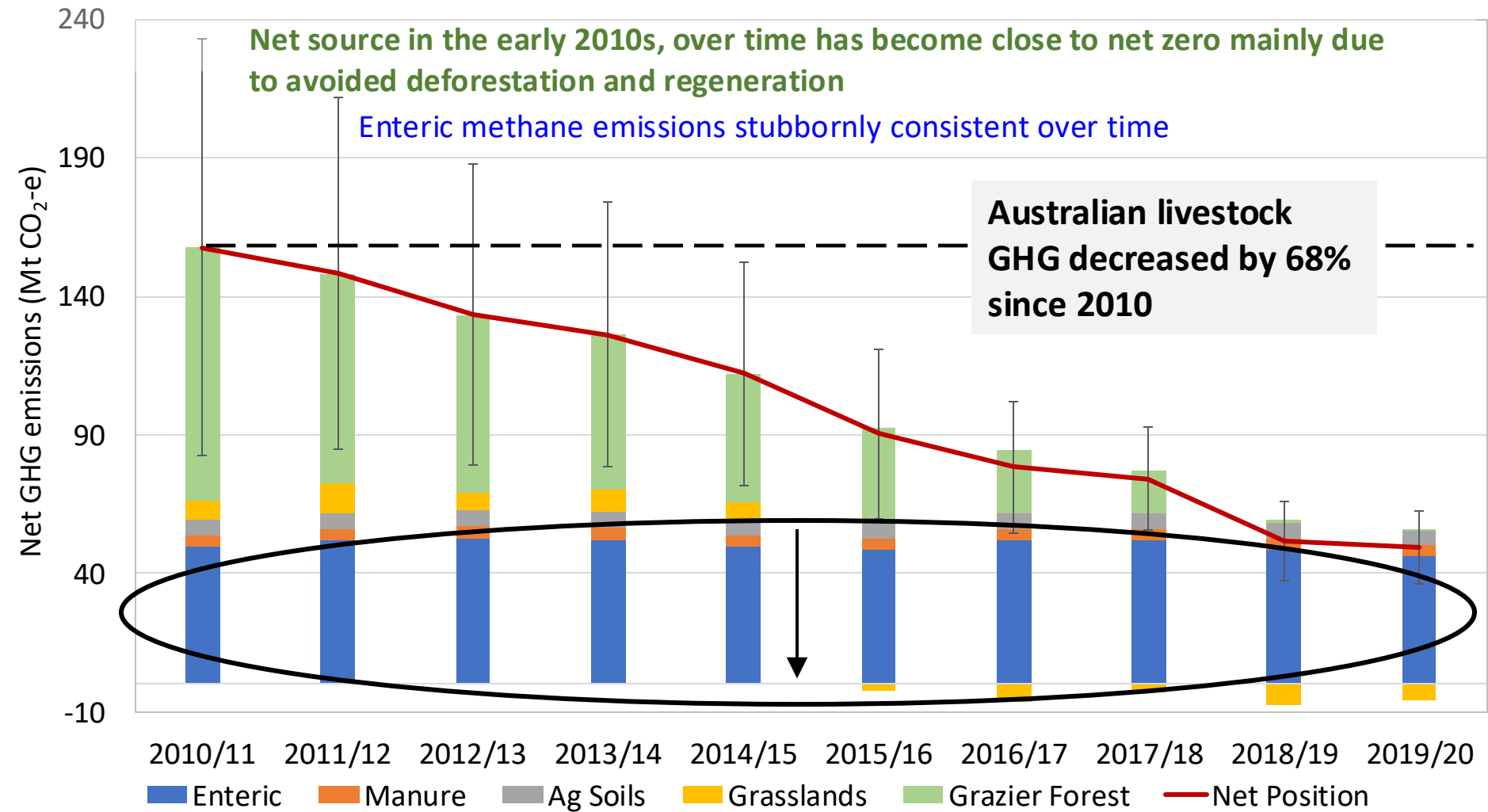








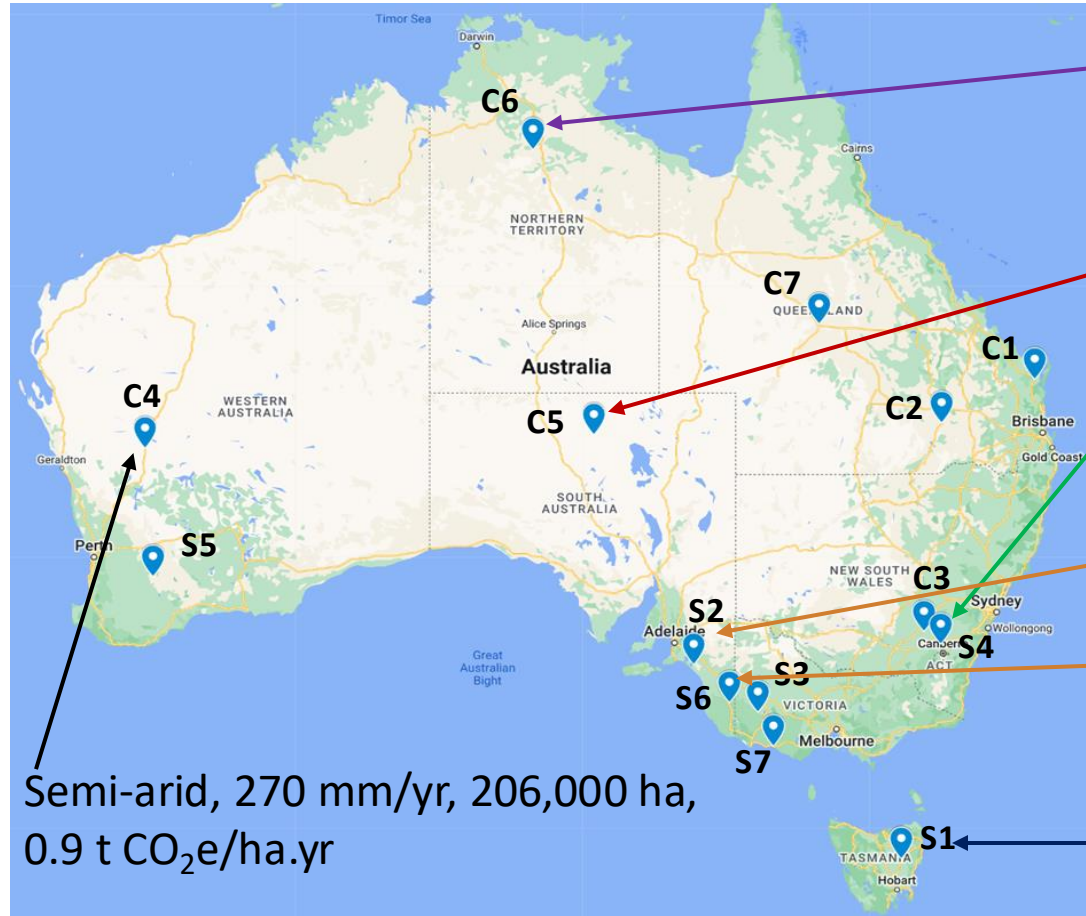




Sustainable Pathways to CN30

- Aim:** Explore a range of interventions to reduce net farm GHG emissions while improving production, profit and biodiversity relative to current baseline
- Methods:**
- Long-term 30-year simulations; 6 cattle and 7 sheep farms
 - Biophysical models (GrassGro and CLEM)
 - Tree carbon sequestration (FLINTpro)
 - Biodiversity in tree vegetation (LOOC-B)
 - Greenhouse gas emissions (SB-GAF)
 - Simple pasture/carbon model- $> \pm 5\%$ change in pasture production led to a soil carbon change
 - Economics (gross margin)
 - Low and high carbon ACCU prices (+ biodiversity \$)
 - Low and high meat prices for meat (10-yr 25th & 75th median \$)
 - Single price for wool production (10-yr 50th median \$)
 - Common prices for some inputs (fertiliser, fuel, husbandry, levies), farm-specific for others (pasture management)

Sustainable Pathways to CN30



Humid tropics, 670 mm/yr,
231,000 ha, 2.7 t CO₂e/ha.yr

Arid, 150 mm/yr, 498,000 ha,
0.5 t CO₂e/ha.yr

Temperate, 800 mm/yr,
250 ha, 8.2 t CO₂e/ha.yr

Mediterranean, 470 mm/yr,
900 ha, 6.3 t CO₂e/ha.yr

Mediterranean, 630 mm/yr,
2,000 ha, 2.8 t CO₂e/ha.yr

Cool temperate, 500 mm/yr,
7,777 ha, 7.8 t CO₂e/ha.yr

Semi-arid, 270 mm/yr, 206,000 ha,
0.9 t CO₂e/ha.yr

Sustainable Pathways to CN30

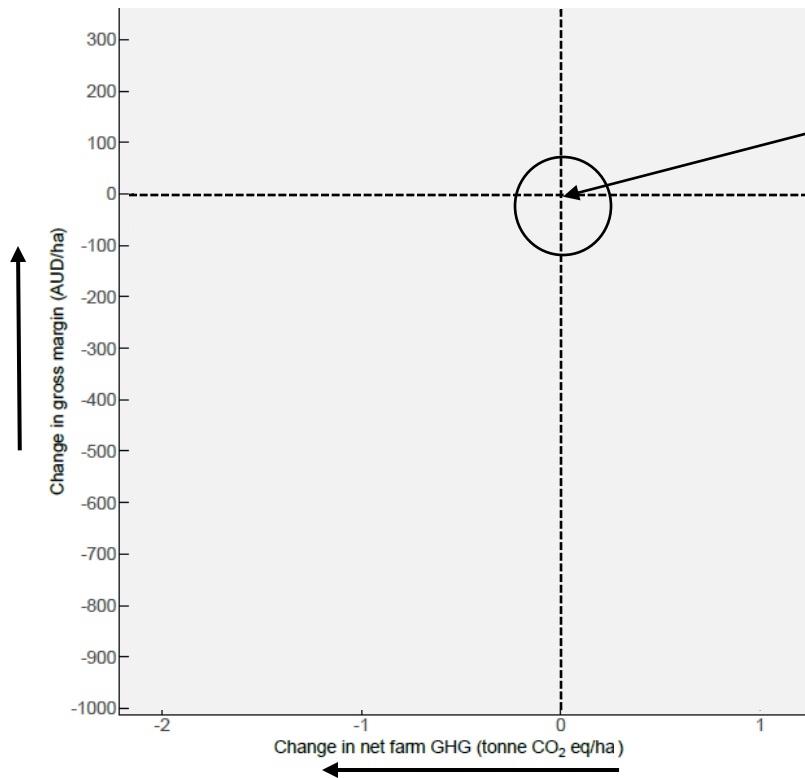
Common-themed across all farms

- 10% tree plantation: 10% grazing area removed and planted to environmental plantings, model decreased livestock numbers by ~ 10%
- 10% and 50% LWG: increased the daily LWG of non-replacement animals from birth to sell sooner but at same LW as baseline. 10% assumed through better grazing and genetics, 50% required additional supplementation
- 10% and 25% methane reduction: assumed all weaned stock consuming anti-methanogenic pastures
- 18% and 37% methane reduction: assumed all weaned stock fed either 3NOP or *Asparagopsis* daily with a grain supplement

Sustainable Pathways to CN30

Farm-specific examples (generally only done on a single farm):

- Reduce to single-lambing ewes combined with decreasing wool micron
- Fencing off riverbanks or creek beds to allow natural regeneration of native tree species for carbon and biodiversity improvements
- Significant increase or decrease in herd size (rangeland cattle farms)
- Altering lambing dates
- Wildlife-proofing boundary paddocks to remove browsing pressure (deer, wallabies etc)- using this extra pasture to increase weaning rates or stocking rates
- Feedlotting longer over summer/autumn
- Altered grazing regimes (30-day or 120-day rotations)
- Replacing inorganic MAP fertiliser with compost
- Altering finishing ages/weights of young stock
- Altering purchase age/time for replacement ewes
- Alternative options to build soil carbon through pasture and grazing management

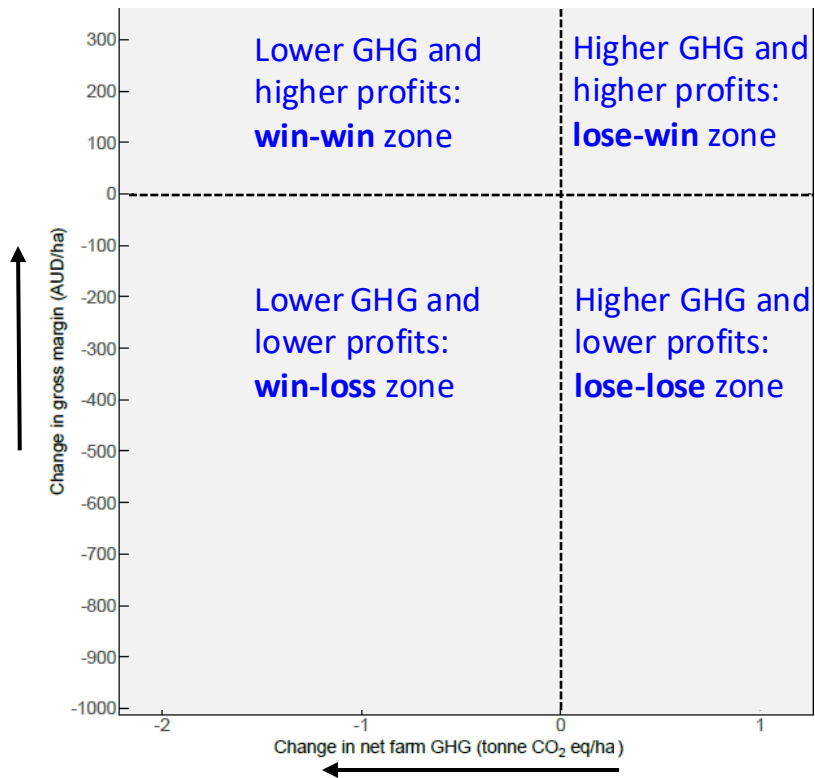


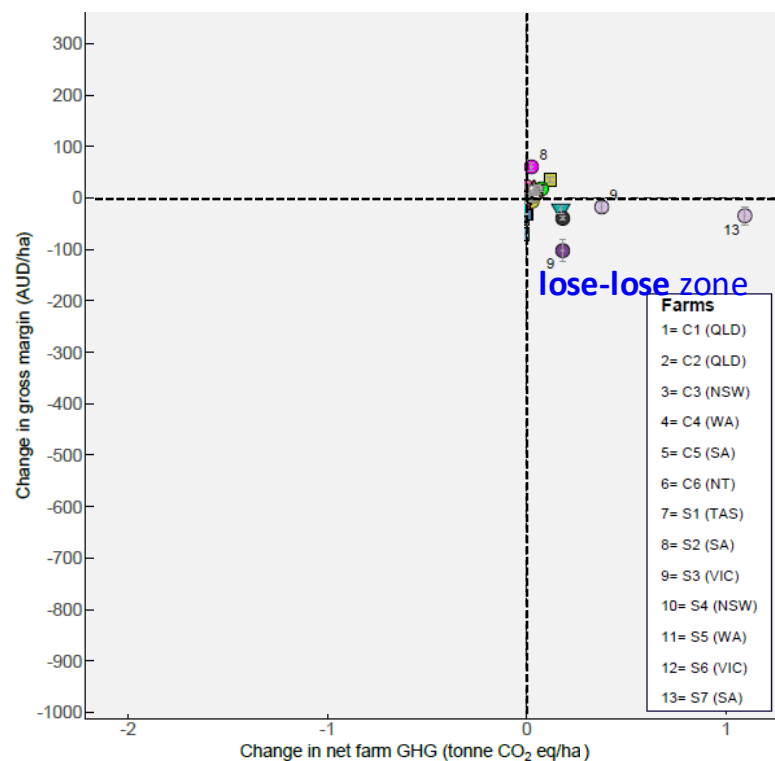
Baseline position of each farm
(profit and net GHG emissions)



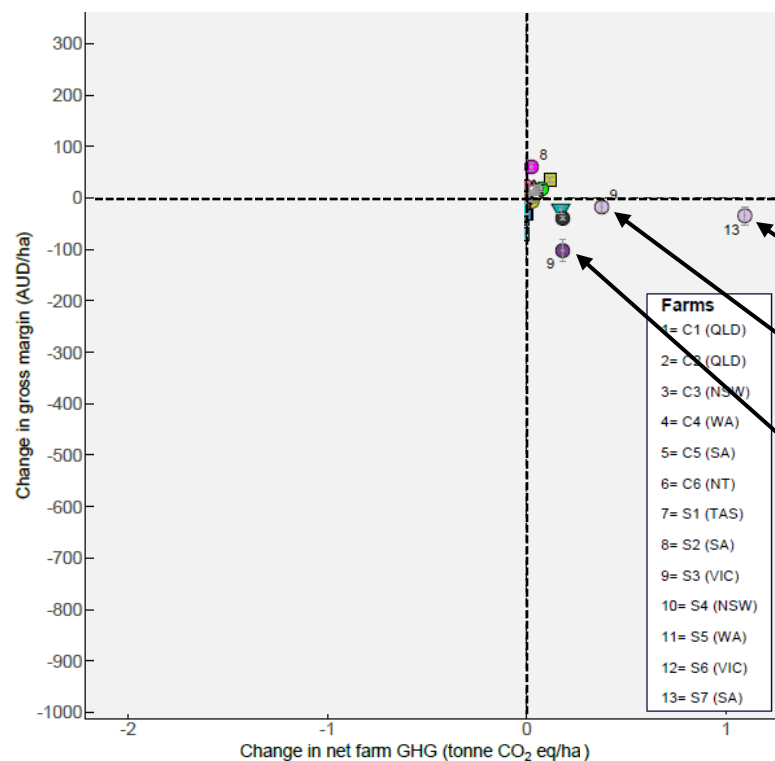
High meat, carbon and biodiversity \$

Low meat, carbon and biodiversity \$



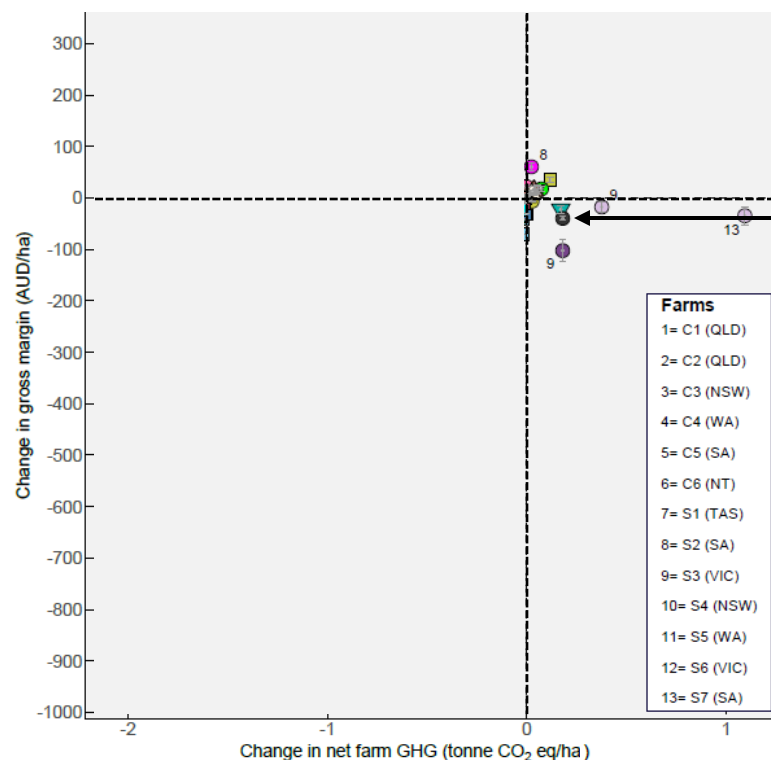


- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |



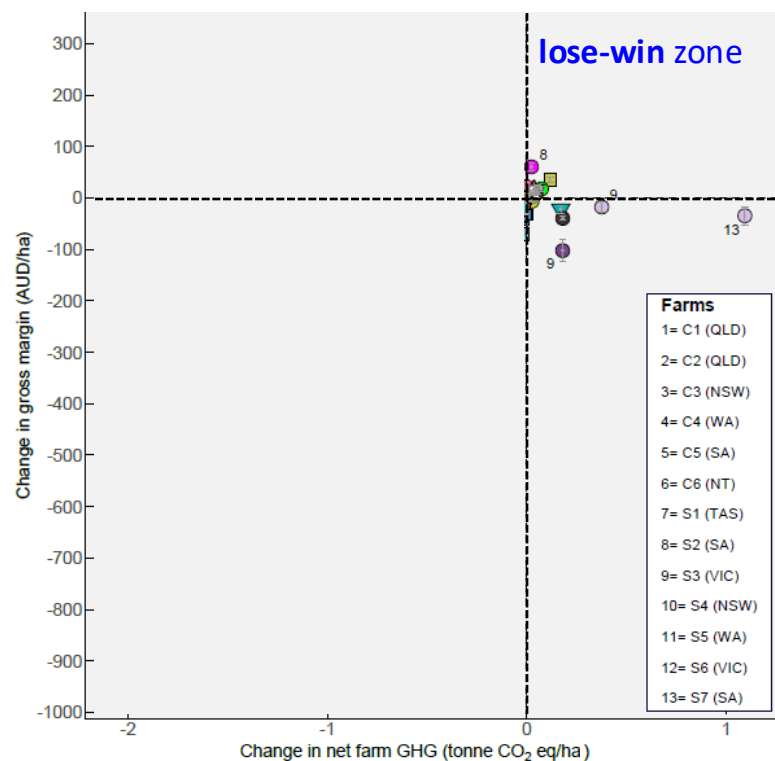
Altered grazing regimes, especially if they do not result in additional pasture production (i.e. loss of soil carbon) and/or decline in livestock production

- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |

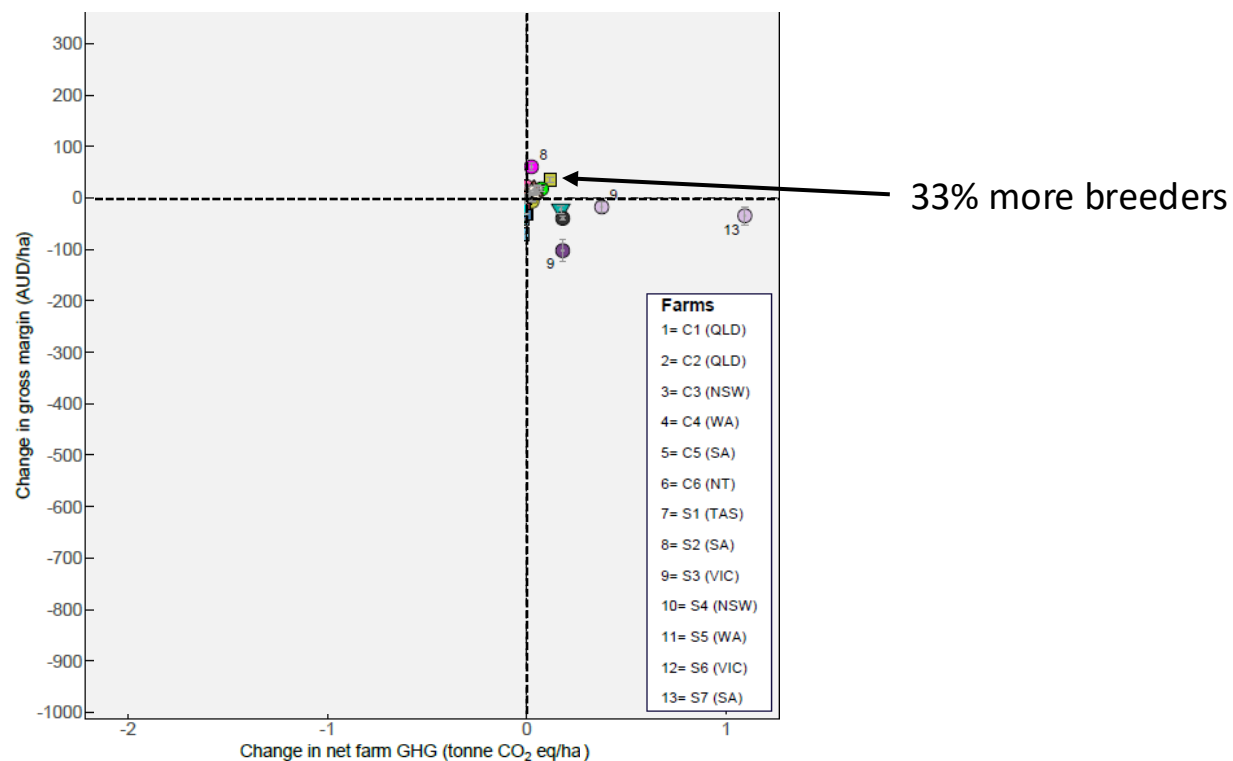


Replacing MAP fertiliser with compost

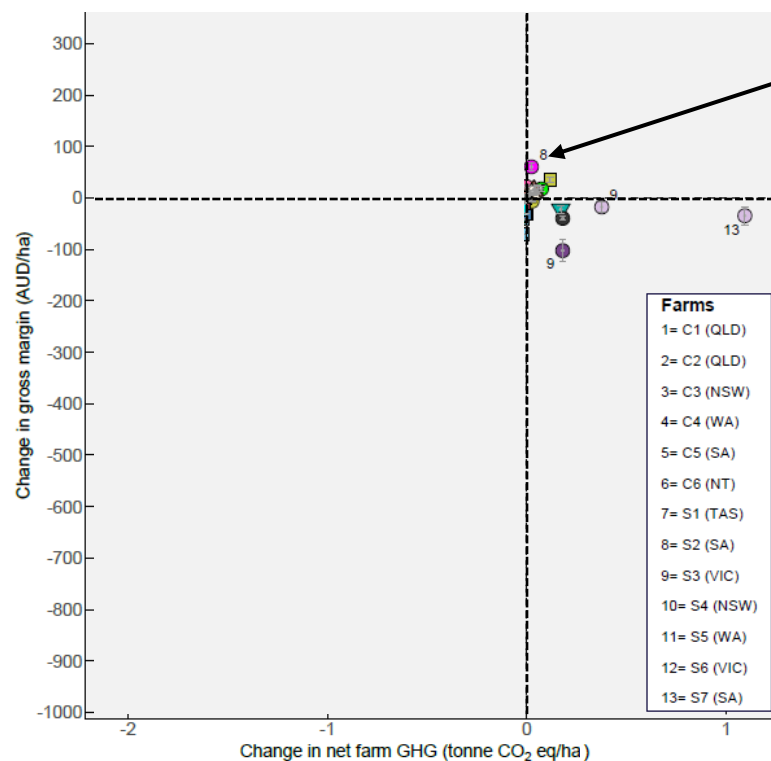
- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |



- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |

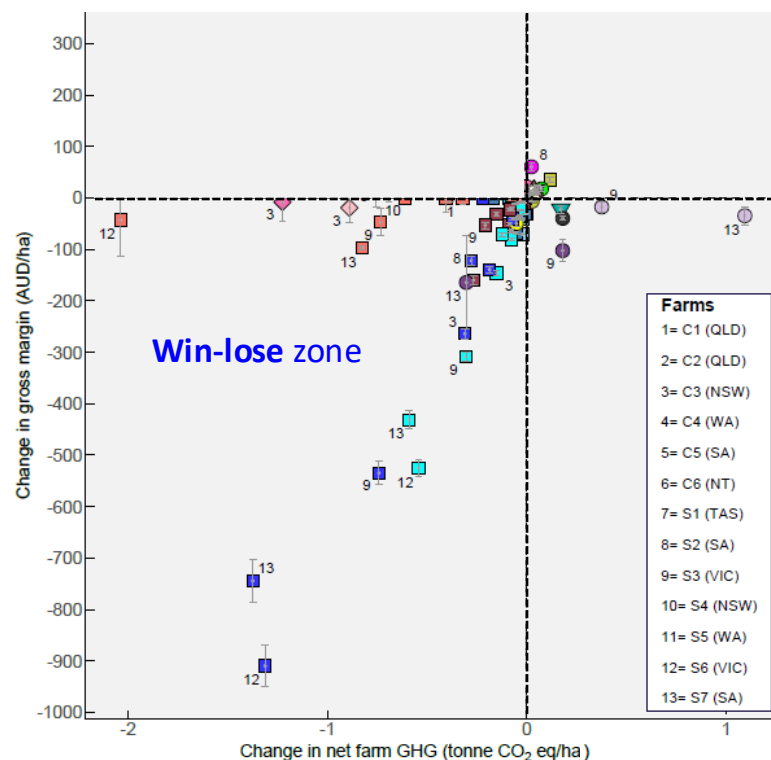


- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |

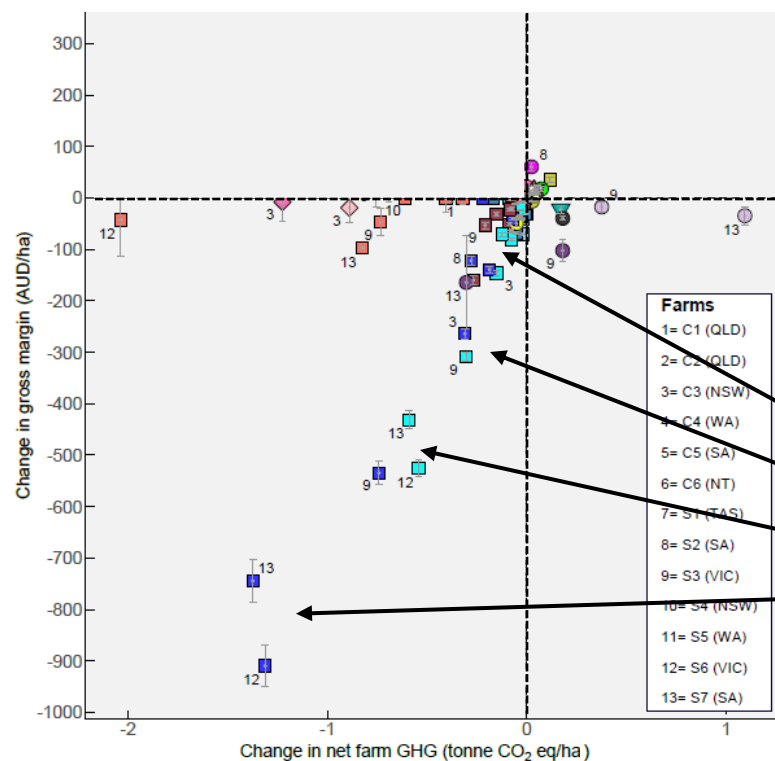


Increasing weaning rates
with supplementary feeding

- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |

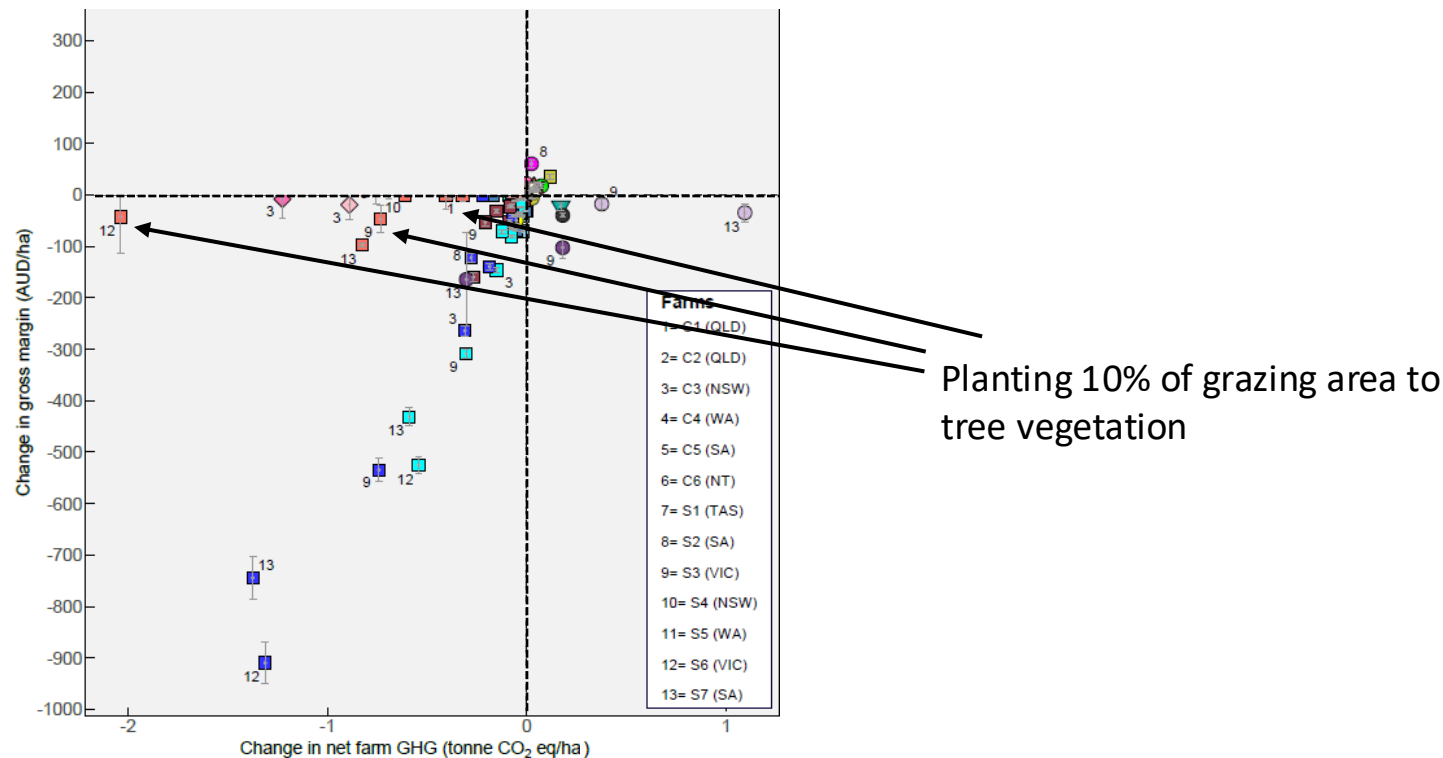


- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |

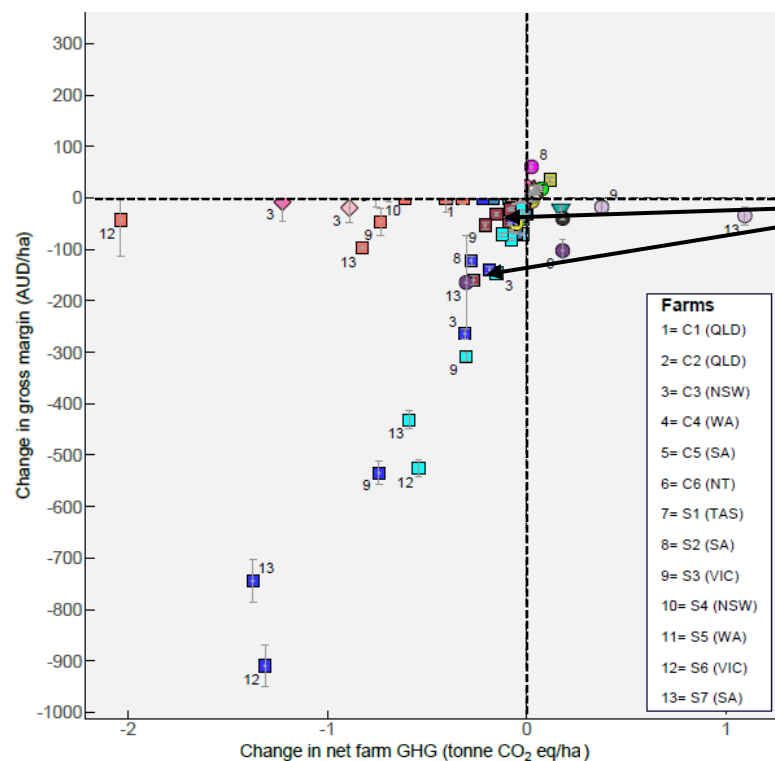


18% and 37% anti-methanogenic supplementation

- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |

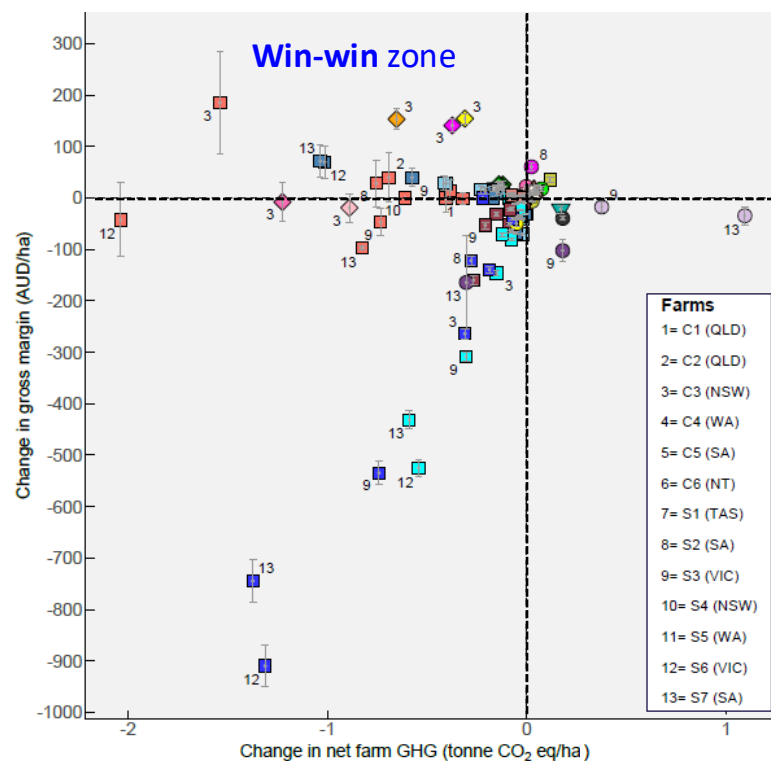


- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |

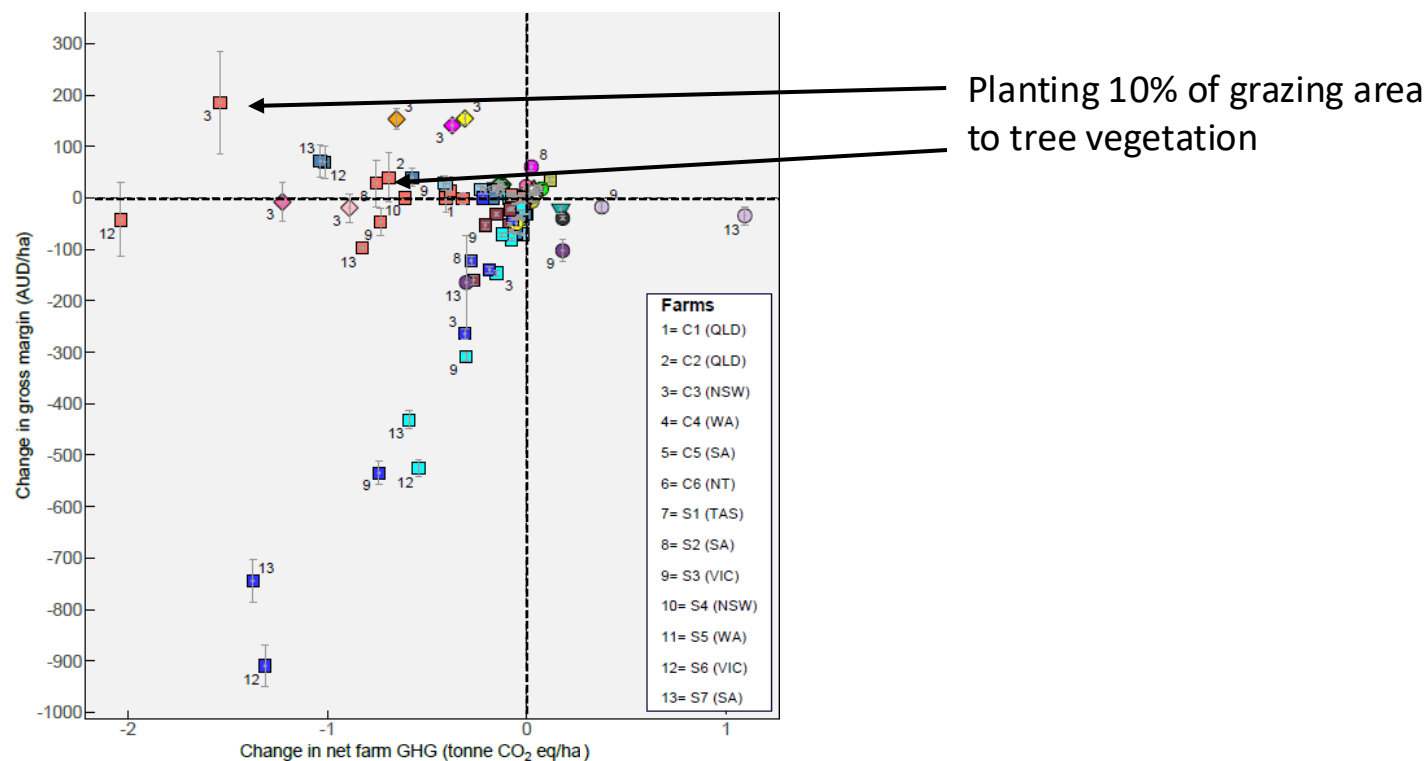


Increasing LWG by 50%, to finish young stock sooner, if no longer present on farm for shearing

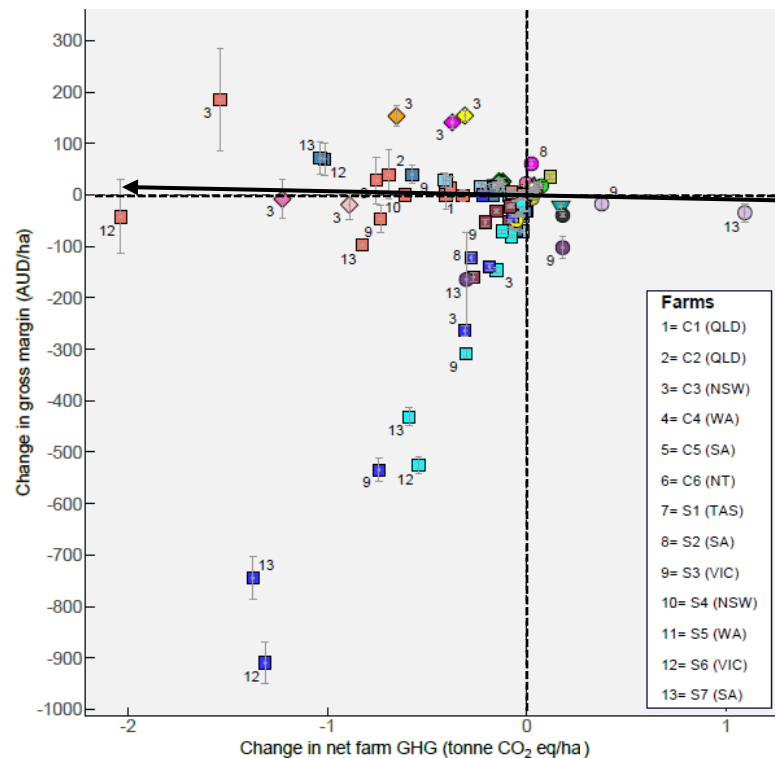
- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |



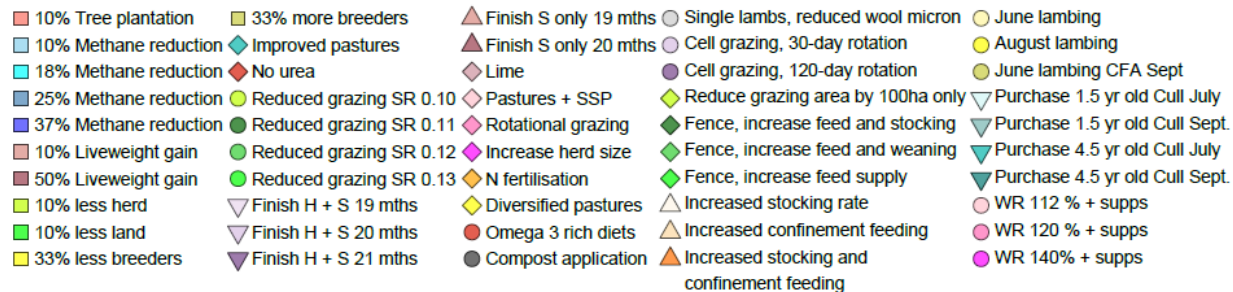
- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |

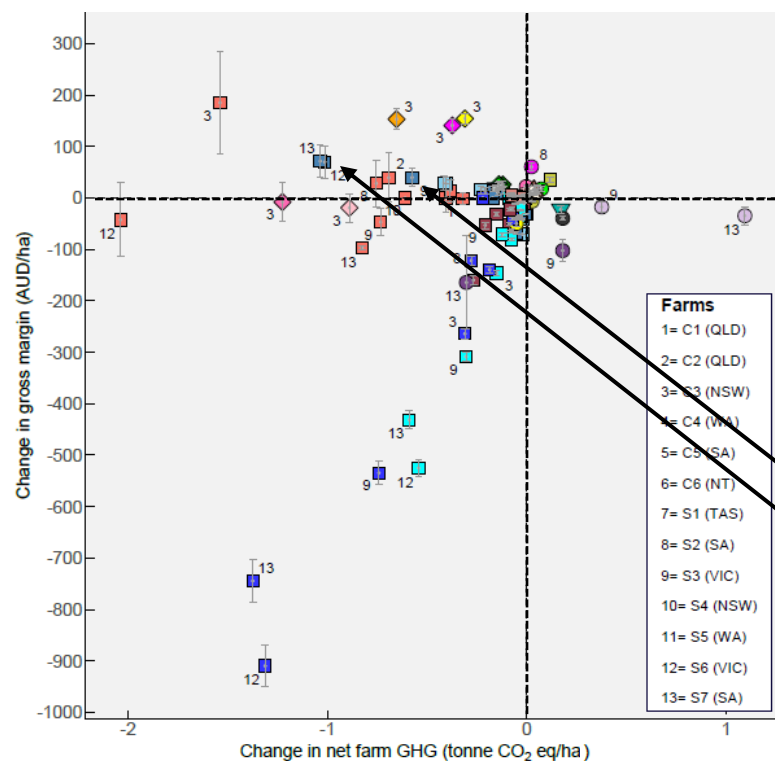


- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Reduce grazing area by 100ha only | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Cell grazing, 120-day rotation | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |



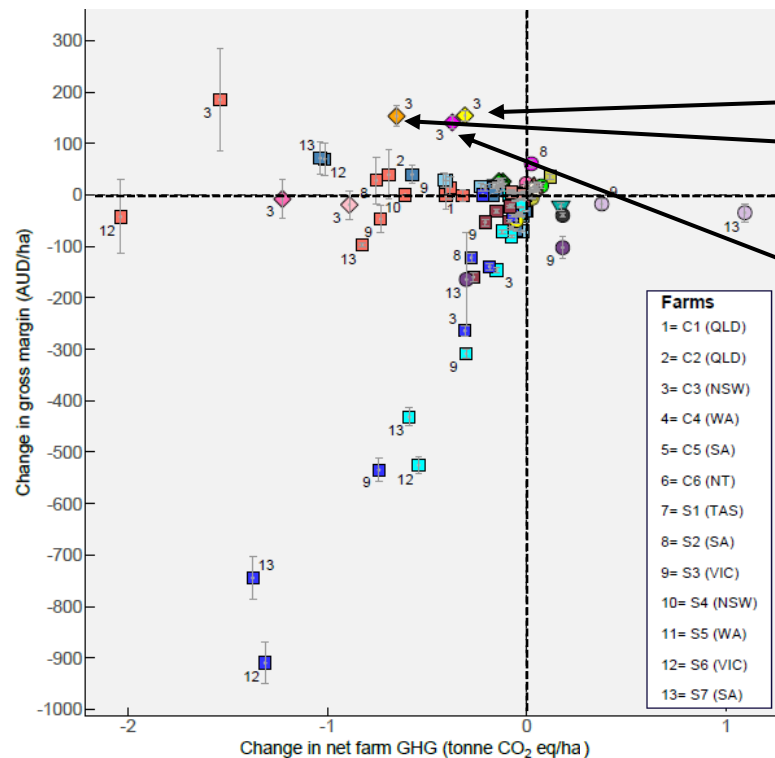
Planting 10% of grazing area to tree vegetation can be profitable if the price of meat, carbon and biodiversity are high





25% anti-methanogenic
pastures

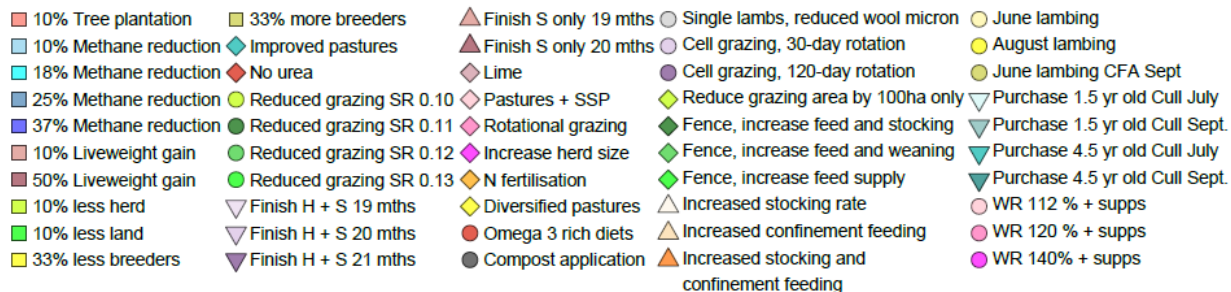
- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |

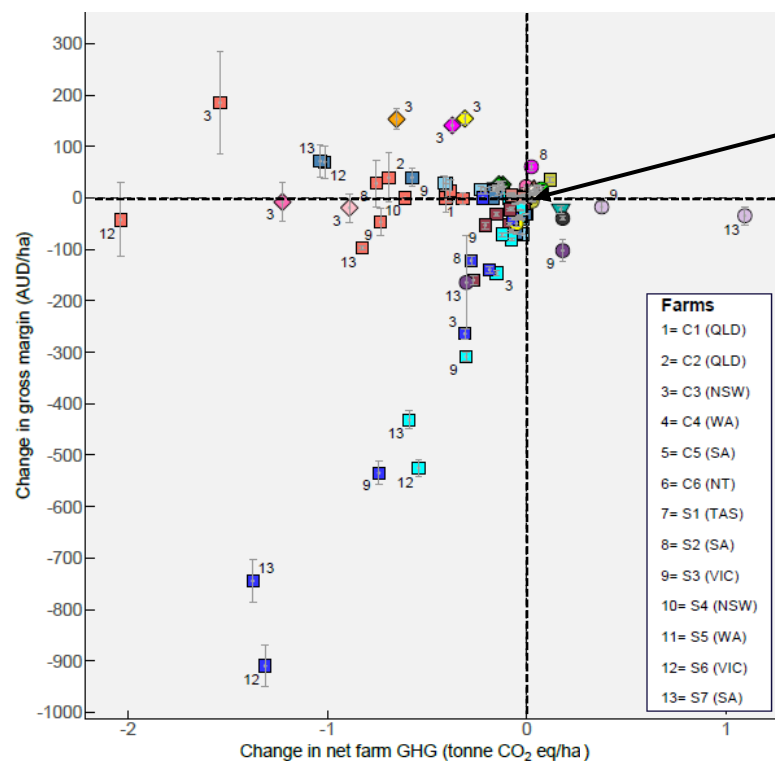


N fertilisation or diversification of pastures – grow more feed can mean more carbon sequestered in soils (retained same herd, just finished stock sooner)

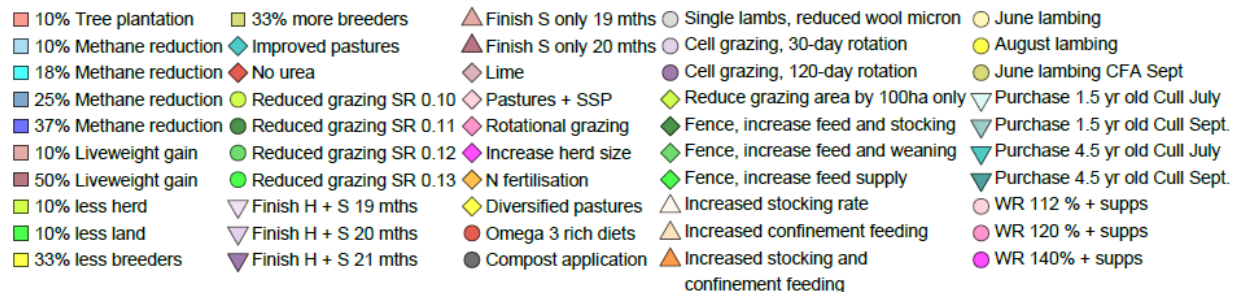
Interestingly, the increased herd size also resulted in a net decline in GHG emissions, more carbon sequestered than emissions from extra livestock

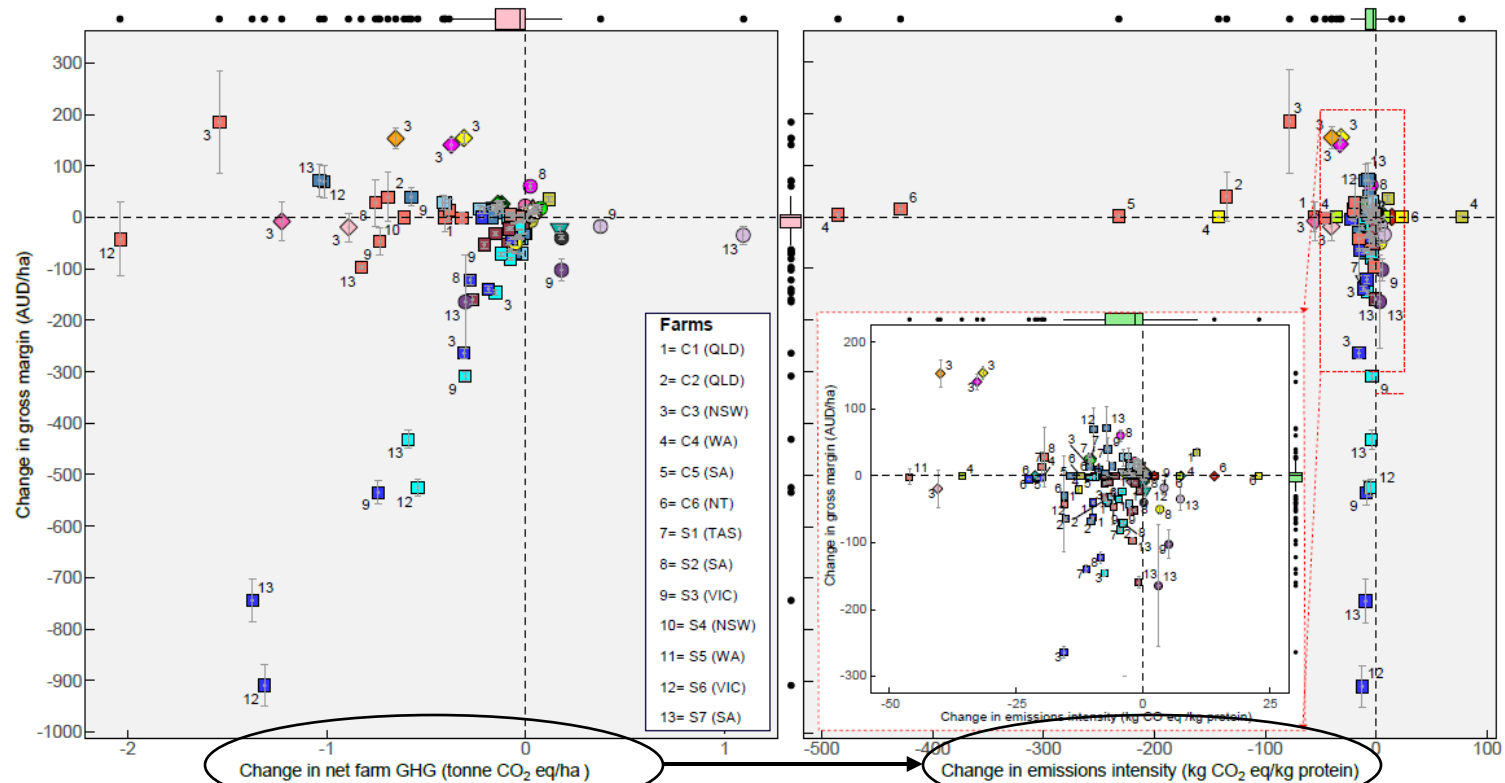
Must be noted, this is a newly purchased run-down farm with plenty of scope to improve soil carbon



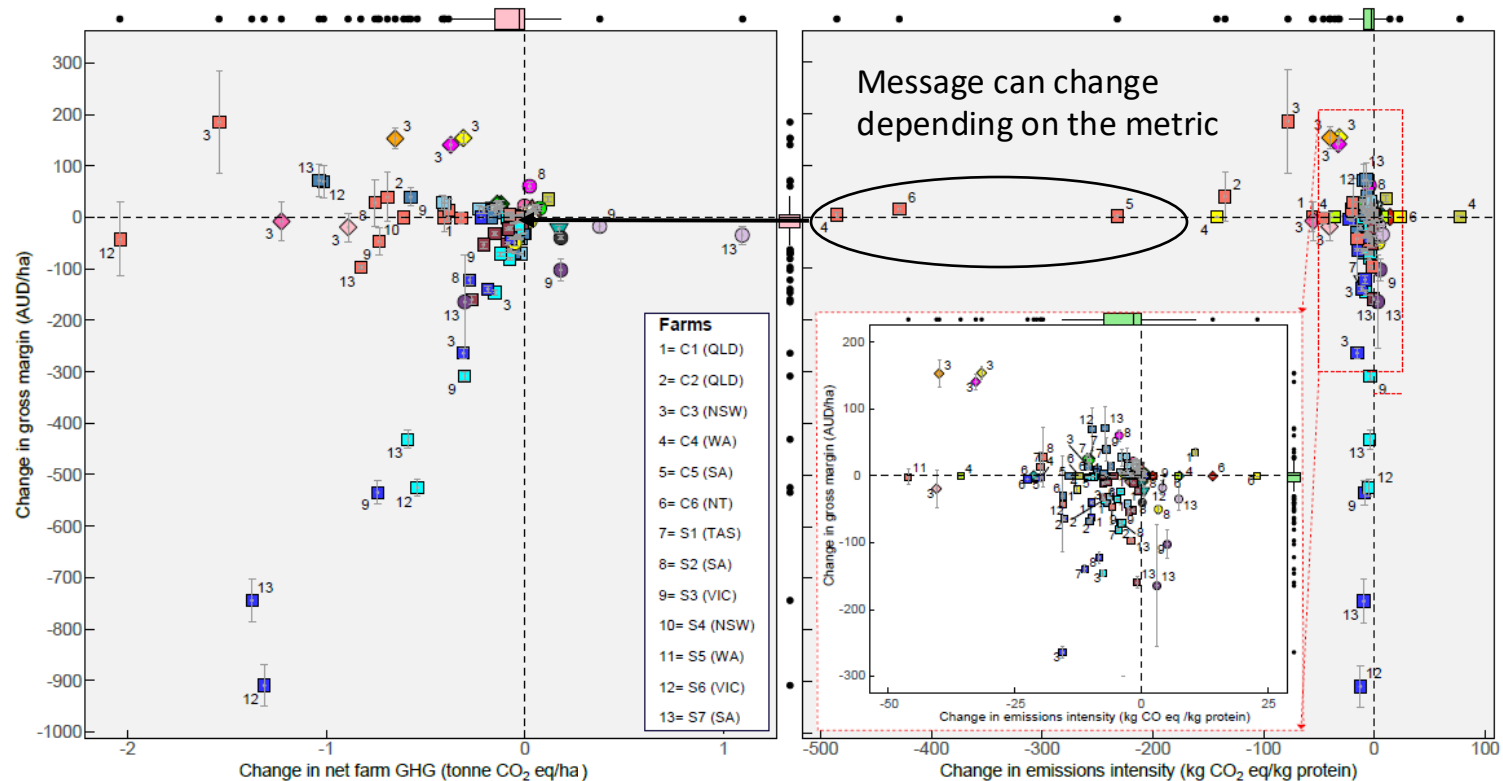


A lot of interventions, both common-themed (e.g. 10% LWG) and farm-specific, centred around the baseline





- | | | | | |
|-----------------------|-------------------------|-----------------------|--|--------------------------------|
| 10% Tree plantation | 33% more breeders | Finish S only 19 mths | Single lambs, reduced wool micron | June lambing |
| 10% Methane reduction | Improved pastures | Finish S only 20 mths | Cell grazing, 30-day rotation | August lambing |
| 18% Methane reduction | No urea | Lime | Cell grazing, 120-day rotation | June lambing CFA Sept |
| 25% Methane reduction | Reduced grazing SR 0.10 | Pastures + SSP | Reduce grazing area by 100ha only | Purchase 1.5 yr old Cull July |
| 37% Methane reduction | Reduced grazing SR 0.11 | Rotational grazing | Fence, increase feed and stocking | Purchase 1.5 yr old Cull Sept. |
| 10% Liveweight gain | Reduced grazing SR 0.12 | Increase herd size | Fence, increase feed and weaning | Purchase 4.5 yr old Cull July |
| 50% Liveweight gain | Reduced grazing SR 0.13 | N fertilisation | Fence, increase feed supply | Purchase 4.5 yr old Cull Sept. |
| 10% less herd | Finish H + S 19 mths | Diversified pastures | Increased stocking rate | WR 112 % + supps |
| 10% less land | Finish H + S 20 mths | Omega 3 rich diets | Increased confinement feeding | WR 120 % + supps |
| 33% less breeders | Finish H + S 21 mths | Compost application | Increased stocking and confinement feeding | WR 140% + supps |



- 10% Tree plantation
- 10% Methane reduction
- 18% Methane reduction
- 25% Methane reduction
- 37% Methane reduction
- 10% Liveweight gain
- 50% Liveweight gain
- 10% less herd
- 10% less land
- 33% less breeders
- 33% more breeders
- Improved pastures
- No urea
- Reduced grazing SR 0.10
- Reduced grazing SR 0.11
- Reduced grazing SR 0.12
- Reduced grazing SR 0.13
- Finish H + S 19 mths
- Finish H + S 20 mths
- Finish H + S 21 mths
- Finish S only 19 mths
- Finish S only 20 mths
- Lime
- Pastures + SSP
- Rotational grazing
- Increase herd size
- N fertilisation
- Diversified pastures
- Omega 3 rich diets
- Compost application
- Single lambs, reduced wool micron
- Cell grazing, 30-day rotation
- Cell grazing, 120-day rotation
- Reduce grazing area by 100ha only
- Fence, increase feed and stocking
- Fence, increase feed and weaning
- Fence, increase feed supply
- Increased stocking rate
- Increased confinement feeding
- Increased stocking and confinement feeding
- June lambing
- August lambing
- June lambing CFA Sept
- Purchase 1.5 yr old Cull July
- Purchase 1.5 yr old Cull Sept.
- Purchase 4.5 yr old Cull July
- Purchase 4.5 yr old Cull Sept.
- WR 112 % + supps
- WR 120 % + supps
- WR 140% + supps

Take home messages

- The Australian livestock sector has significantly reduced net GHG emissions, but mostly through avoided deforestation and building of soil carbon- this needs to continue
- Planting trees on farm is good for carbon sequestration, but it can also result in substantial benefits for biodiversity (turning around recent losses)
- Range of factors need to be considered if tree-plantings are profitable for your farm (i.e. ACCU/ biodiversity prices, can you retain similar stock numbers/production, co-benefits of trees etc.)
- Anti-methanogenic diet additives can reduce GHG emissions, but costs of implementation must be significantly lower than we modelled. We also didn't account for management/practicalities
- Anti-methanogenic pastures had good promise, especially if no additional cost and fit into your current feedbase
- Farm specific interventions were quite variable in terms of quadruple bottom line
- The greatest benefit may come from practice changes that address an underlying economic, environmental and/or production deficit

Tools and resources

- <https://www.utas.edu.au/tia/research/research-projects/project/livestock-production/carbon-storage-partnership>
- <https://www.youtube.com/@matthewharrison6233>
- <https://looc-c.farm/> and <https://looc-b.farm/>
- Bowen Butchart et al (2024) <https://doi.org/10.1016/j.agsy.2024.104168>
- Harrison et al (2021) <https://www.researchgate.net/publication/353367793>
- McDonald et al (2023) <https://www.sciencedirect.com/science/article/pii/S0301479723019345>
- MLA's CarbonEDGE program
- MLA's Profitable Grazing Systems program (in development)

Quotes from case study farmers

- *I could see how the modelling helps us determine **which options are really worth pursuing**. I see this as a decision-making tool for what we will do on farm*
- ***Life is always about trade-offs**. Nothing comes for free. Especially related to profit. That is something we think of everyday. **Every decision comes at a cost**. There is very rarely an optimum. It is about trading one thing for another*
- *It is nice to reduce GHG with trees but **main reason we plant is for livestock, biodiversity and looks better** although we know they are difficult to quantify*
- *This project has **contributed to my knowledge of carbon and biodiversity**. The results align with my intuition. In fact, we have **already made the some of the changes indicated by the modelling**. Very important to make decisions based on evidence*
- *I will use these **results as a stepping stone to another project**. Have learnt a lot – but need it to sink in. How do we quantify what is going on on-farm now? **Cannot prosecute farmers for producing methane***

Soil and pasture investments in 2025 – Where do we start?

Felicity Turner

Mel Fraser

A bit about you...

- <https://www.mentimeter.com/app/presentation/alho5mn2juq6oqi8thhh1hj7pt5phecd/edit?question=52bz1nvuww38>

Where do we start?

- Assess the current pasture base & look for indicator species
- Understand current fertility levels
- Understand / identify any additional soil constraints



Assessing the pasture base - Perennial Grass Pastures

Critical factors (Pasture paramedic)

- Groundcover
- Dry Matter
- Live sown perennial grasses



Decision Matrix – Pasture paramedic



Do I need to manipulate this perennial pasture?

Trigger

Late summer, Early autumn

Consideration	Condition when I would think differently	Value	Test Score
Ground cover	Greater than 70% on flats, 90% on slopes	3	
	Less than 70% groundcover, 90% on slopes	0	
Current level of Dry Matter	1000-2000 kg DM/ha	4	
	Greater than 2000 kg DM/ha	1	
	Less than 1000 kg DM/ha	0	
Presence of live sown perennial grasses	Greater than 2 phalaris, tall fescue or cocksfoot in square, 3 perennial ryegrass	7	
	1 or 2 phalaris, tall fescue or cocksfoot in square, 1-3 ryegrass plants	4	
	No live sown perennial grasses	0	
Max value	14		

Risk tolerance

moderate

Decision	Suggested score	Confirmed score
Current management suitable but consider improvements	More than 11	
Consider resowing or oversowing	9 to 11	
Consider pasture manipulation	Less than 9	

Assessing the pasture base - Perennial Lucerne pastures

Critical factors

- Plant Density
- Groundcover
- 'Strength of stand'



Decision Matrix – Lucerne management



Do I need to manipulate this lucerne stand?

Trigger

Autumn

Consideration	Condition when I would think differently	Value
Current plant density	Greater than 18 plants /m2	10
	12-18 plants / m2	5
	Less than 12 plants/m2	0
Current level of groundcover	Greater than 70% groundcover	6
	Less than 70% groundcover	0
'Strength' of stand	Stand is solid and can withstand cultivation	5
	Some plant losses may occur with cultivation	3
	Stand will not withstand cultivation	0
Max value	21	

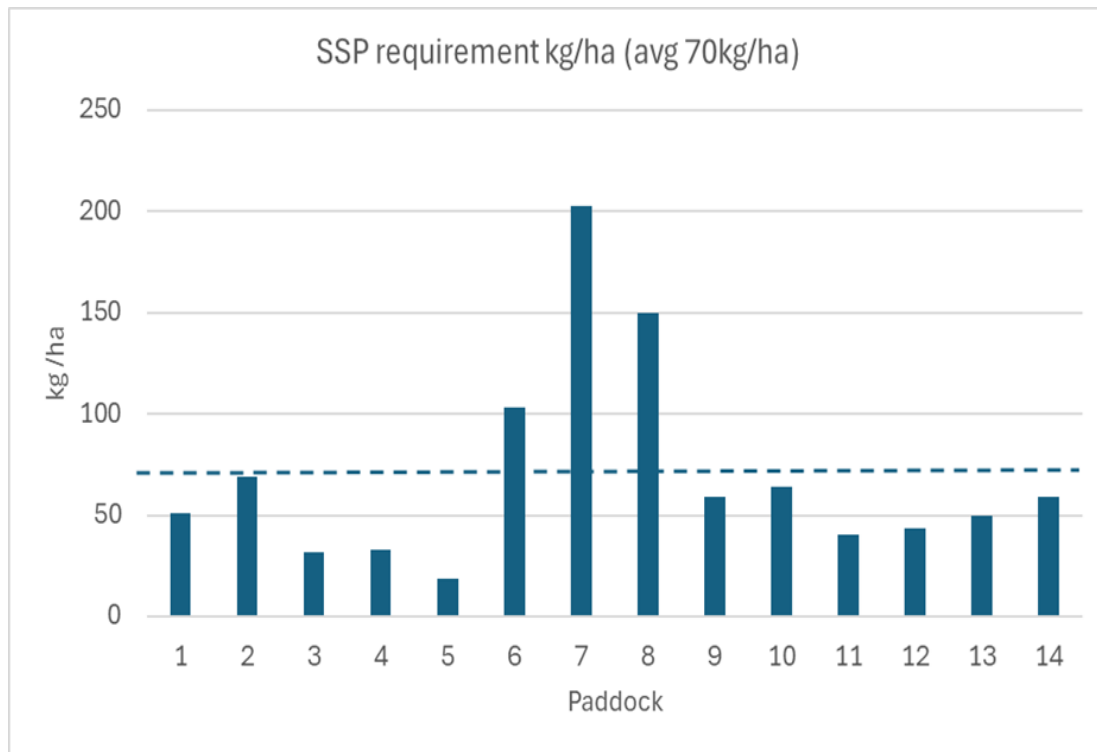
Risk tolerance

moderate

Decision	Suggested score	Confirmed score
Maintain existing stand	More than 16	More than 15
Consider oversowing with an annual / grazing cereal	14 to 16	8 to 15
Consider renovation or sowing an annual	Less than 14	Less than 8

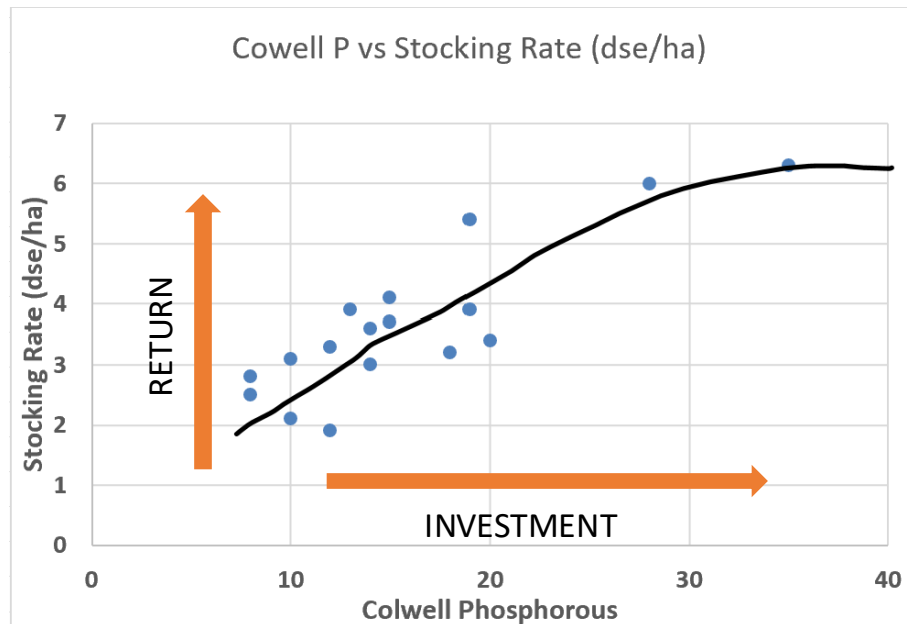
Current production levels

- Where are you getting your best return?



Current fertility levels

- Where are you going to get your best return?



Prioritising Investment...



Scoring paddocks



Lose the blanket approach



Consider oversowing with annuals for quick feed



When renovating pastures...

Don't miss the
opportunity to treat:

- Acidity
- Water repellence
- Compaction
- Nutrient deficiencies

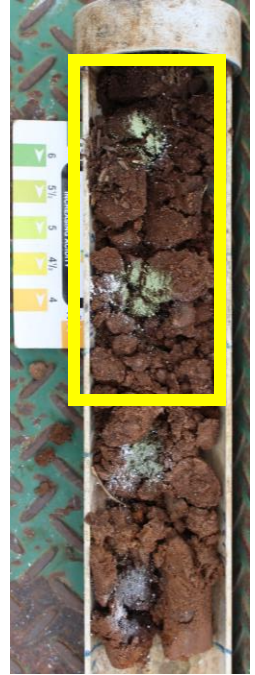


Acidity

Deep
sands



Clays and
loams



Treating Acidity – Incorporation counts



Water Repellence



Water Repellence

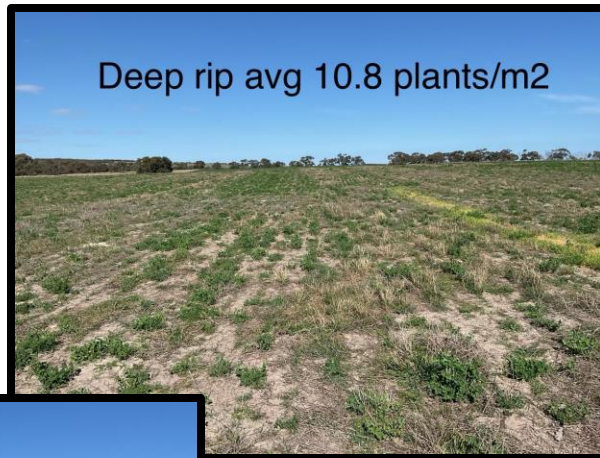
	Control		Inversion			Deep Rip	
Cumulative DM	8.3 t/ha		11.6 t/ha			10.5 t/ha	
Carrying Capacity @40% utilisation	3.0 DSE/ha		4.2 DSE/ha			3.8 DSE/ha	
GM @ \$50/DSE	\$150		\$210 (+\$60/ha)			\$190 (+\$40/ha)	



Treating compaction – mixing matters?



Treating compaction – mixing matters?



Treating compaction (mixing matters in perennial pastures!)



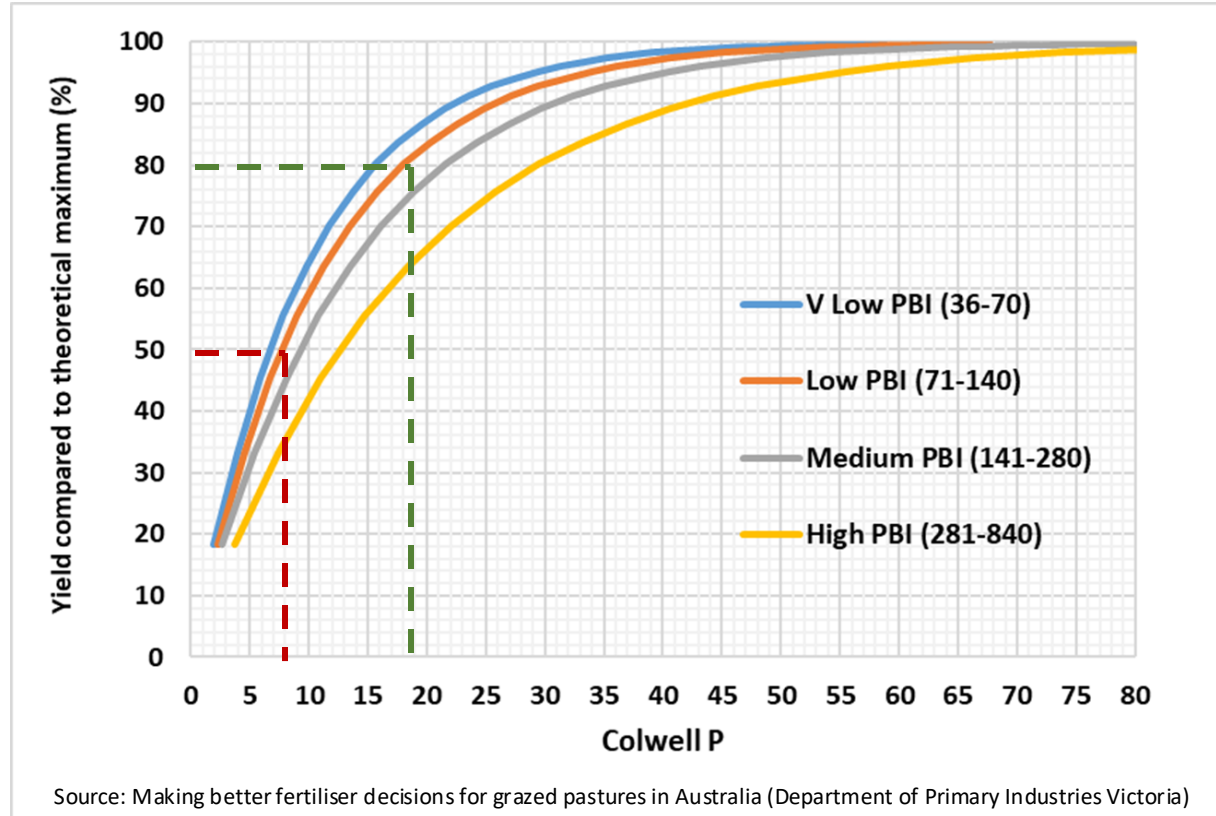
Nutrition counts



Nutrition counts



Nutrition counts



Thankyou



Dr. Melissa Fraser

Soil Function Consulting

mel@soilfunction.com.au

0407 773 369



Felicity Turner

Turner Agriservices

felicity@turneragri.com.au

0400 299 087

Fast tracking genetic progress – The latest tools and technology to maximise gain

Peta Bradley

Meat & Livestock Australia

The 1955 Flood and how it relates to genetics



Picture Gilgandra - Gilgandra Shire Library





The 1955 Flood and how it relates to genetics



↓ DOHNE+ ⓘ	PWT ⓘ	YCFW ⓘ	YFD ⓘ	YEMD ⓘ	YFAT ⓘ
196.56	6.73	7.94	-0.23	0.55	-0.43
ACC. 58	ACC. 74	ACC. 70	ACC. 83	ACC. 68	ACC. 65
TOP 5%	TOP 20%				



Today's Presentation - Fast-tracking genetic progress

1. Tomorrow's World of Genetics: A Preview

2. Genetics Research and Development:
Building the Future Today

3. Genetic Products: From Theory to Practice

Genetics Research and
Development

Accessing and
delivering genetic tools

Practical Products
for on-farm use

Genetics
R&D and
New Trait
Capture

Developing
the Engine
behind
Sheep
Genetics

agbu

Delivery of
breeding values

sheep GENETICS

Users of
breeding values

Seedstock
breeders

Ram Buyers

1. Tomorrow's World of Genetics: A Preview

1.1. What does the future look like for sheep breeding



“To describe the genetic merit of ALL sheep using world-leading genetic products that facilitate genetic progress”

1.2 What does that mean: at a ram sale



What traits?

*What animals can we
compare?*

*What will our indexes
look like?*

1.3 What does that mean: on-line, in the saleyards, with processors?

		
10011242 - 180 Store Wether Lambs 📍 BATHURST, New South Wales NAJAKY PTY LTD • 100% Merino / Merino • 37.4kg live • 180 Store Merino Wether Lambs. 39.4kg Full at assessment. Roseville Park blood. Vendor bred. November shorn. 2 inch skin. Suitable feeder lambs, restockers or wool growing producers. Assessed	10011277 - 550 Mixed Sex Store Lambs 📍 NIMMITABEL, New South Wales MACLAUGHLIN RIVER PASTORAL COMPANY • 50% Poll Dorset / COMPOSITE • 38.6kg live • 2ND X LAMBS BY POLL DORSET & WHITE SUFFOLK RAMS. THESE LAMBS ARE AUGUST / SEPTEMBER DROP. JANUARY SHORN AND PRESENT IN IDEAL FRESH CONDITION TO TAKE FORWARD. WHP/ESI Assessed	10011208 - 28 Ewes 📍 HERMIDALE, New South Wales KR & NA SPEARS • 82% White Dorper / White Dorper • 45.4kg live • 28 WHITE DORPER EWE LAMBS. JULY 2024 DROP. UNJOINED. AVG 48KG. AMARULA, BURRAWANG & DUSTY DOWNS GENETICS. Assessed
 BOWLER & LIVERMORE PTY LTD	 ELDERS COOMA	 GRANT DANIEL & LONG CUNNAMULLA

*Animals sold with
descriptions of genetic
merit
...and valued accordingly*

1.4 What does that mean: for individual animals

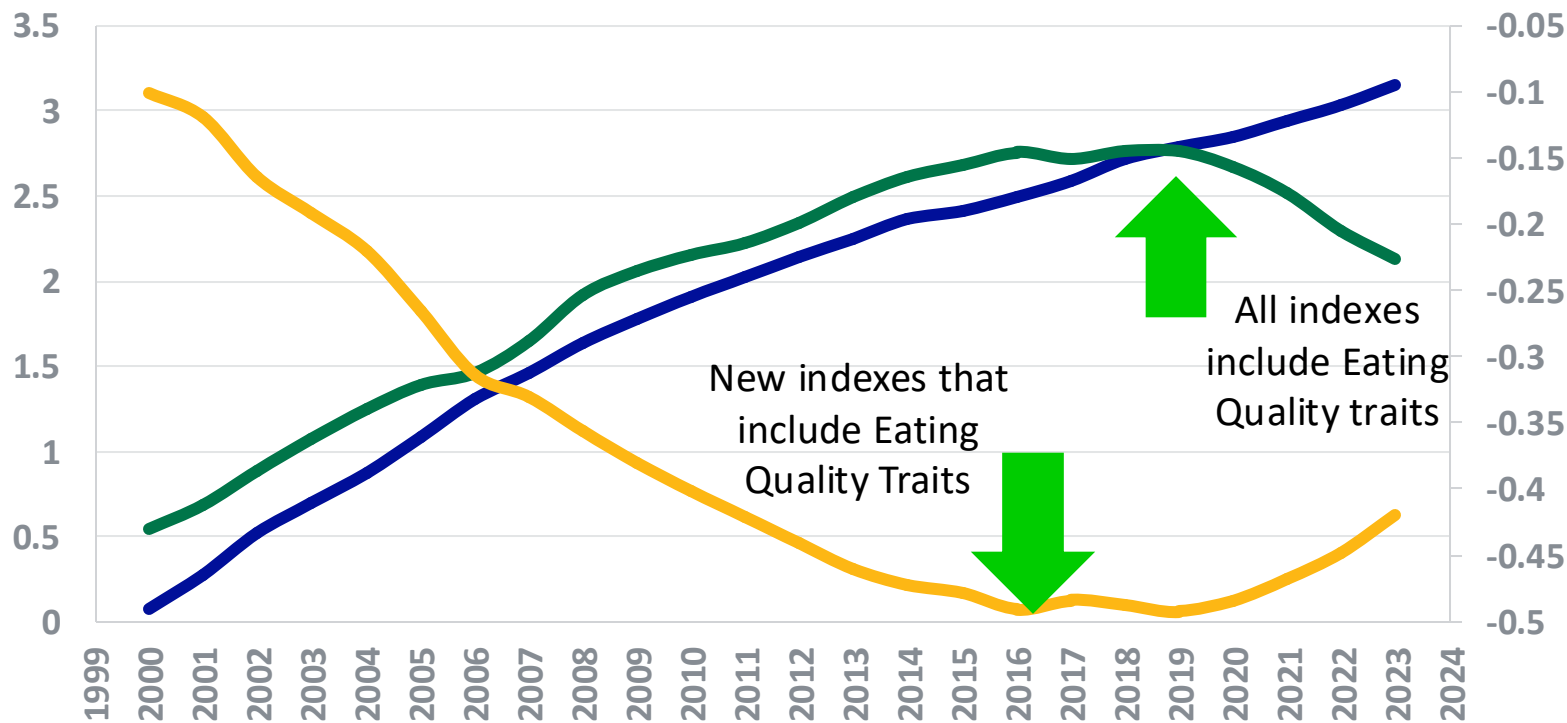


Within flock selection of future parents

Utilising data from on-farm collection to inform genetic decisions

2. Genetics Research and Development: Building the Future Today

2.1 What have we been able to do with ASBVs for Eating Quality (EQ) Indicator Traits?



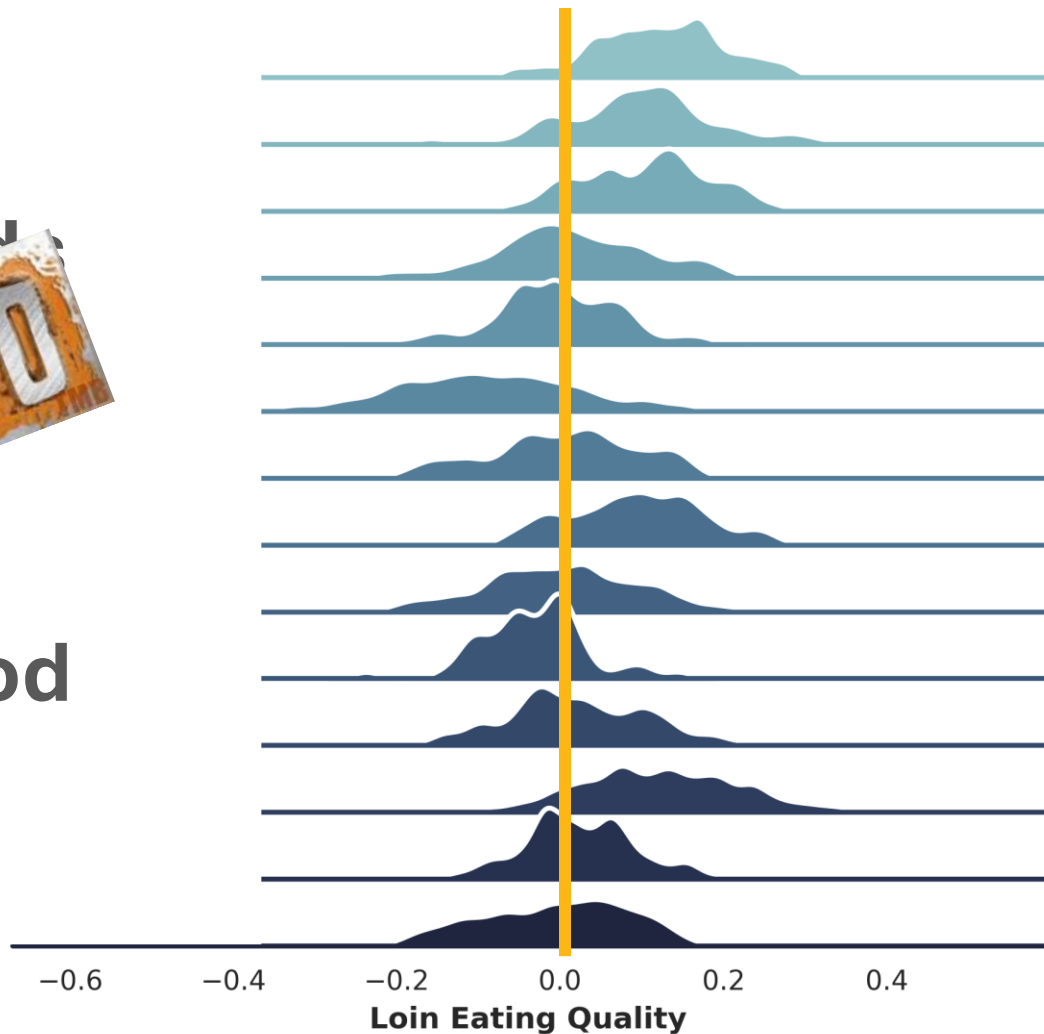
2.1 Future Eating Quality Traits

**Intramuscular
Fat (IMF)**

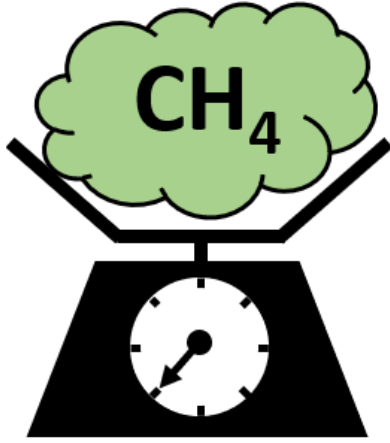
**Shear Force
(SF5)**

**Consumer
Satisfaction
Australian Sheep
Breeding Value
(ASBV)**

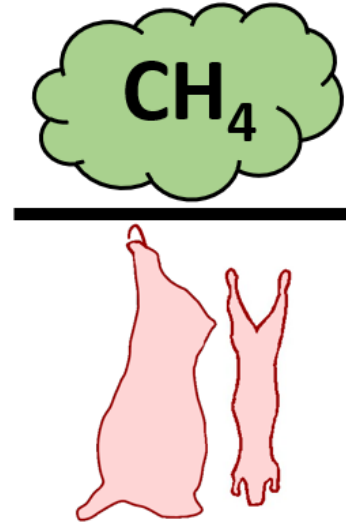
Myth: Some breeds
are much better
eating quality than
others from
breed X I have good
eating quality.



2.2 Breeding Efficient Animals



Methane
Production

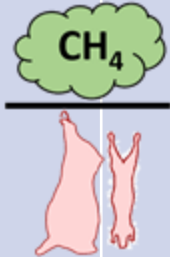
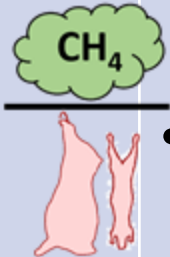


Methane
Intensity

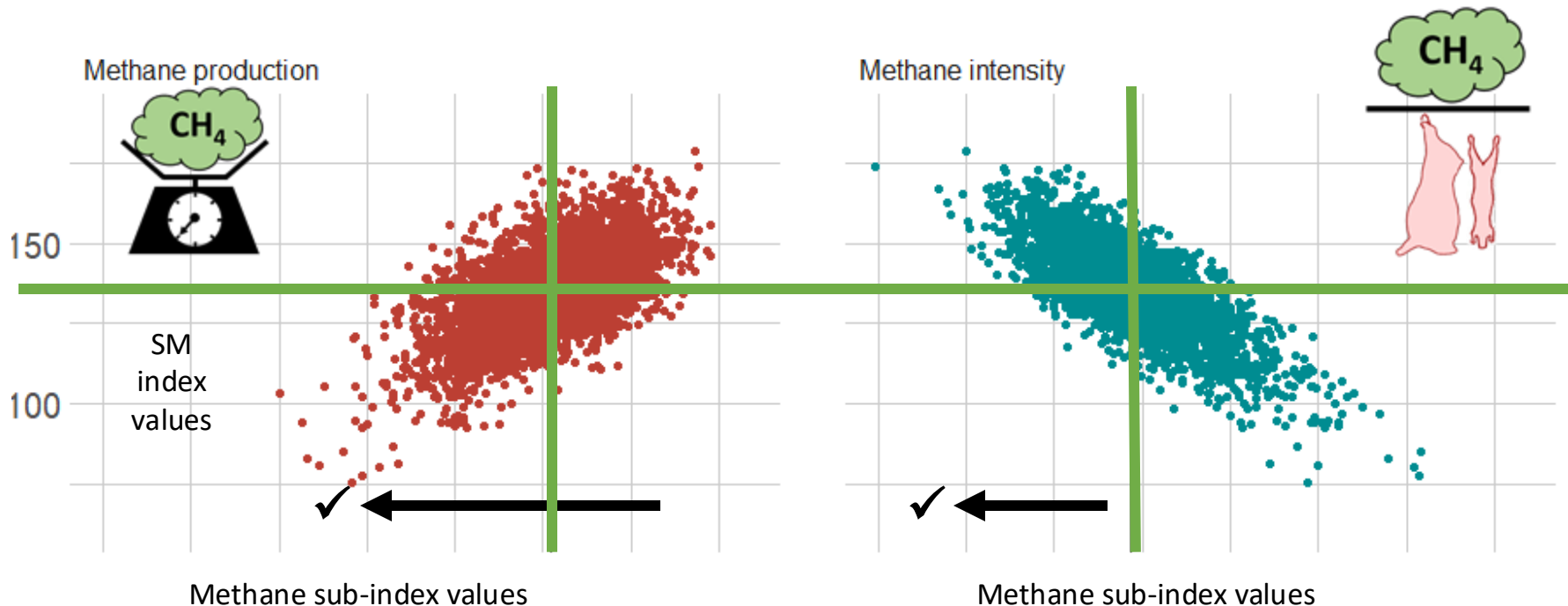
2.2 The Journey to create a breeding value



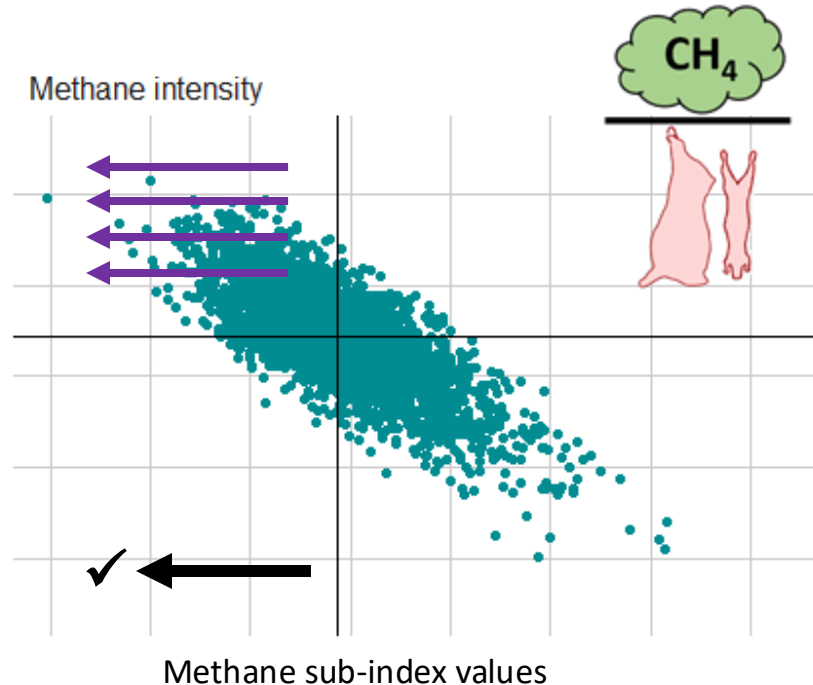
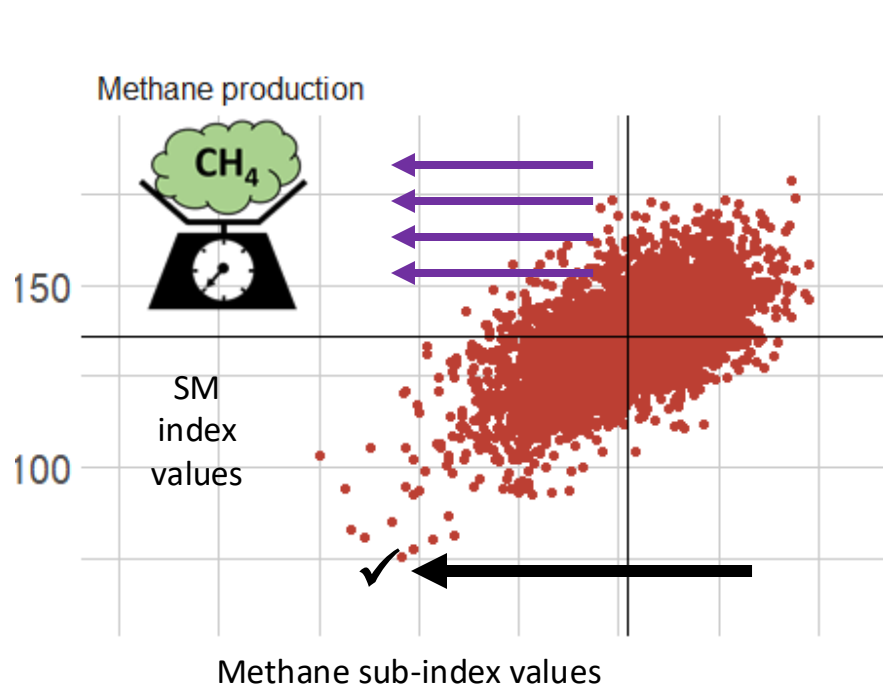
2.2 What are we doing now with our indexes?

Terminal Sire Breeds	Maternal Sire Breeds	Merinos
• Faster growth • Improved Lean Meat Yield • Better Quality Meat  	• Faster growth • Lower mature size • Improved reproduction  	• Faster growth • Improved reproduction • Improved wool quality and quantity • Mature size? 

2.2 What are our new MERINOSELECT indexes doing?

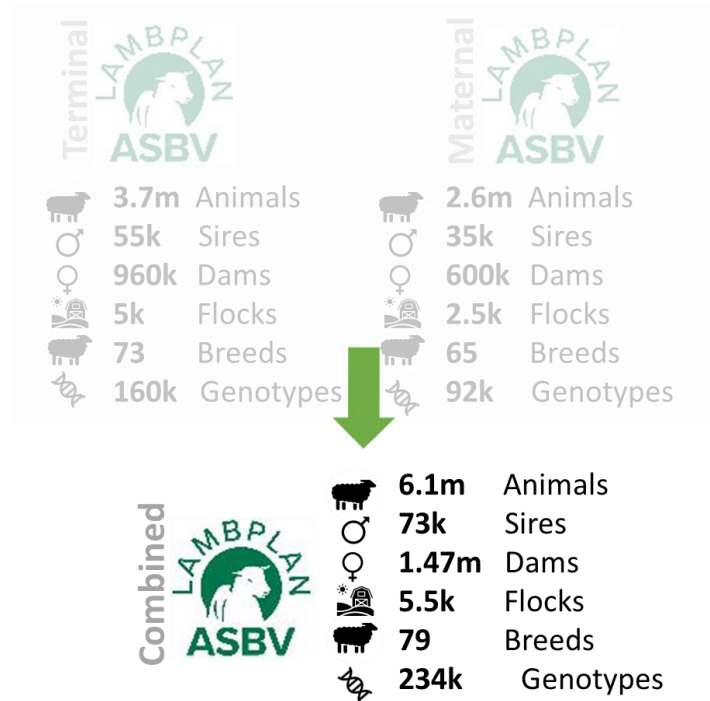


2.2 What will we be able to do with methane breeding values?



2.3 A Combined LAMBPLAN Analysis

- Completely comparable ASBVs for Terminals and Maternals
 - Simplify for commercial ram buyers
- Research results available in 2025
- 2026 rams sales will be using the new analysis



3. Genetic Products: From Theory to Practice

3.1 The Sheep Genetics Offering is expanding

ASBVs and Indexes

- Across Flock Comparison
- Use to purchase rams/semen

Genomic Only Commercial Products (Merino)

- Within Flock Ranking Only
- Less information contributing
- Use to select rams (and potentially ewes)

Flock Profile (Merino)

- Flock level snapshot
- Not individual animal
- Use to help select rams to bring in

3.2 Genomic Only Commercial Animal Products

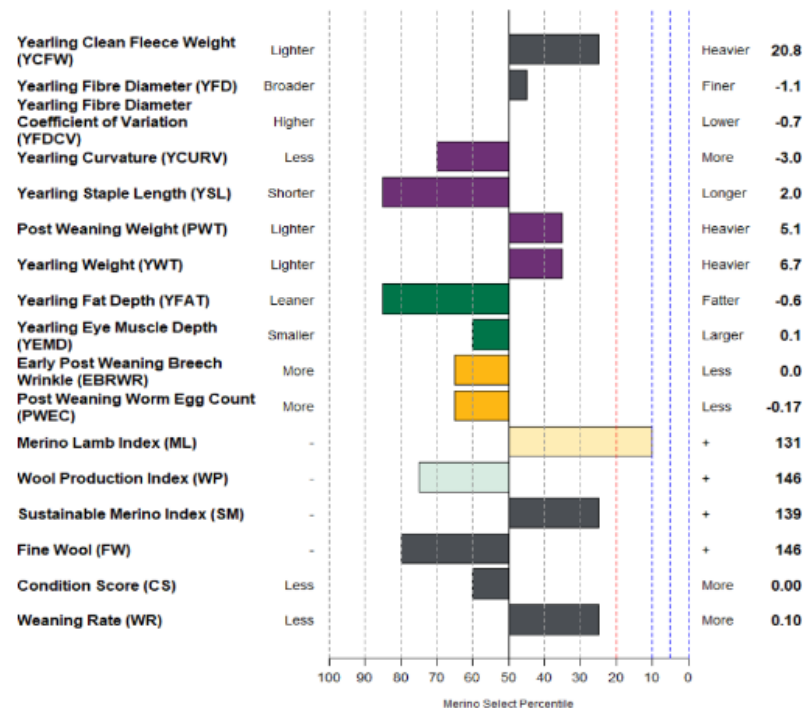
C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
VID	ycfw	ycuv	ysl	pwt	ywt	yfat	yemd	DP	MP	FP	yfd	ydcv	ebwr	pfec
220143	1	8	9	8	8	8	9	8	4	6	6	10	10	1
220178	10	8	7	10	10	1	2	10	10	10	10	8	4	7
220076	6	5	4	10	10	2	4	10	9	8	7	1	9	3
220224	10	1	9	4	5	3	3	4	7	7	3	8	7	3
220043	8	2	8	10	10	3	4	10	10	10	5	10	10	3
220054	4	9	1	7	7	1	1	8	7	8	9	6	1	6
220187	7	4	7	2	2	1	3	4	8	9	10	8	3	8
220217	5	7	10	6	8	7	3	6	5	4	6	7	6	10
220124	7	1	8	2	2	3	2	2	3	4	2	3	5	5
220077	5	2	8	10	9	5	2	10	8	8	3	9	10	4
220139	9	2	3	9	8	1	3	10	9	8	3	4	1	2
220211	4	4	1	4	4	4	3	7	9	10	10	4	3	10
220182	10	2	2	8	7	6	4	7	9	9	6	6	6	7
220221	8	4	6	7	8	1	2	9	9	9	7	7	7	6
220045	6	8	10	5	4	2	5	4	5	7	5	10		
220089	8	5	4	9	8	3	4	9	9	8	3	9	4	3
220205	10	2	7	7	7	8	1	9	10	8	2	4	10	4
220006	7	5	9	10	9	1	1	9	9	10	8	10	7	7
220193	5	6	7	9	8	2	3	8	6	6	7	2	4	8
220006	7	5	9	10	9	1	1	9	9	10	8	10	7	7
220002	7	3	5	4	5	5	5	7	8	9	7	9	5	10
220149	3	10	1	2	4	6	7	5	6	8	10	2	2	9
220133	5	7	2	3	5	4	3	5	6	8	8	8	4	6
220164	10	2	8	7	7	1	2	7	6	3	1	1	7	3
220056	5	8	2	7	7	1	3	8	9	10	8	10	1	8
220078	10	3	3	2	2	3	4	4	10	10	9	1	1	8
220158	7	9	2	10	10	5	3	10	10	9	5	4	3	2
220023	3	7	7	10	10	4	7	10	7	7	8	4	5	4

ID	Fleece Weight	Index
220143	1	8
220178	10	8
220076	6	5
220224	10	1
220043	8	2
220054	4	9

3.3 Merino Flock Profile

Client:
Date: 06/03/2022
Flock Drop: 5 2022

Flock Profile



Your Flock Profile values are displayed in the far right hand column. The diagram shows how your flock compares to flock averages in the MERINOSELECT database. Note that the 100th percentile is the bottom value, 50th percentile is the average and zero percentile is top value of flocks in MERINOSELECT. If you do not see a bar for a trait or index, your Flock Profile sits in the 50% percentile. To achieve gain in desired traits or indexes, select rams with ASBVs higher than your Flock Profile value. Results are subject to change slightly as predictions update over time.

3.4 How they all fit together



Nutrition Information		
	Per 100 g	*Reference Intakes
Energy	2196 kJ 525 kcal	8400 kJ 2000 kcal
Fat	29 g	70 g
of which Saturates	16 g	20 g
Carbohydrate	61 g	260 g
of which Sugars	56 g	90 g
Fibre	1.6 g	-
Protein	3.8 g	50 g
Salt	0.36 g	6 g

*Reference intake of an average adult



ASBVs and
Indexes
meatup
FORUM

Genomic Only
Products

Flock Profile

3.4 What about the future of these products

ASBVs and Indexes

- 2027 there will be just 2 evaluations
- Latest and new BVs

Genomic Only Products

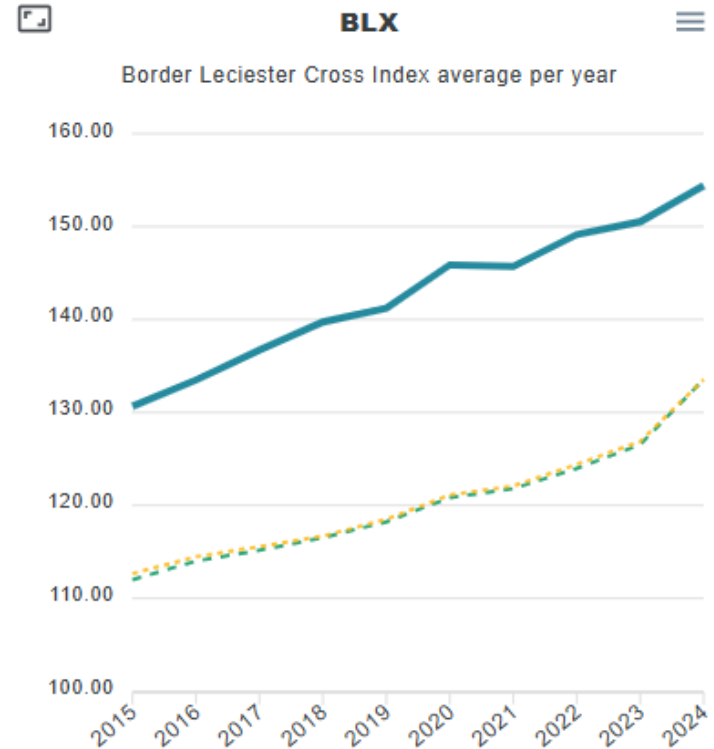
- Will be expanded to new breeds

Flock Profile

- Will be expanded to new breeds

3.5 What can you do now!

1. Have a breeding objective
2. Purchase rams with a label (ASBVs and Indexes)
3. TRACK YOUR RAM TEAM!



Key Take Homes

1. Consider the future state and make selection decisions now that set your business up for success

2. A combined LAMBPLAN evaluation is part of the journey to enable genetic products for all breeds for a range of traits

3. There are a suite of genetic products available for all businesses – ASBVs, Genomic Breeding Values, Flock Profile and ram team tracking

Reaching out and keeping up-to-date

Peta Bradley

pbradley@mla.com.au

0419 158 449

Sheep Genetics

info@sheepgenetics.org.au

02 8055 1818



Stay up to date:
Sheep Genetics
Monthly Update
Email

Afternoon tea

30 minutes

Optimising ewe performance over the lambing period

Martin Beltrame

Zoetis

Zoetis at a Glance

70+

Years of experience

We provide:

Medicines, Vaccines,
Diagnostics, Biodevices,
Genetic tests &
Precision animal health



Kristin Peck
Chief Executive
Officer



100+

Countries where Zoetis
products are sold

29

Manufacturing sites

7

Major product categories

8

Core animal species

1,600

Approximate
R&D colleagues

4,100

Approximate
field force members

14,100

Approximate colleagues
worldwide



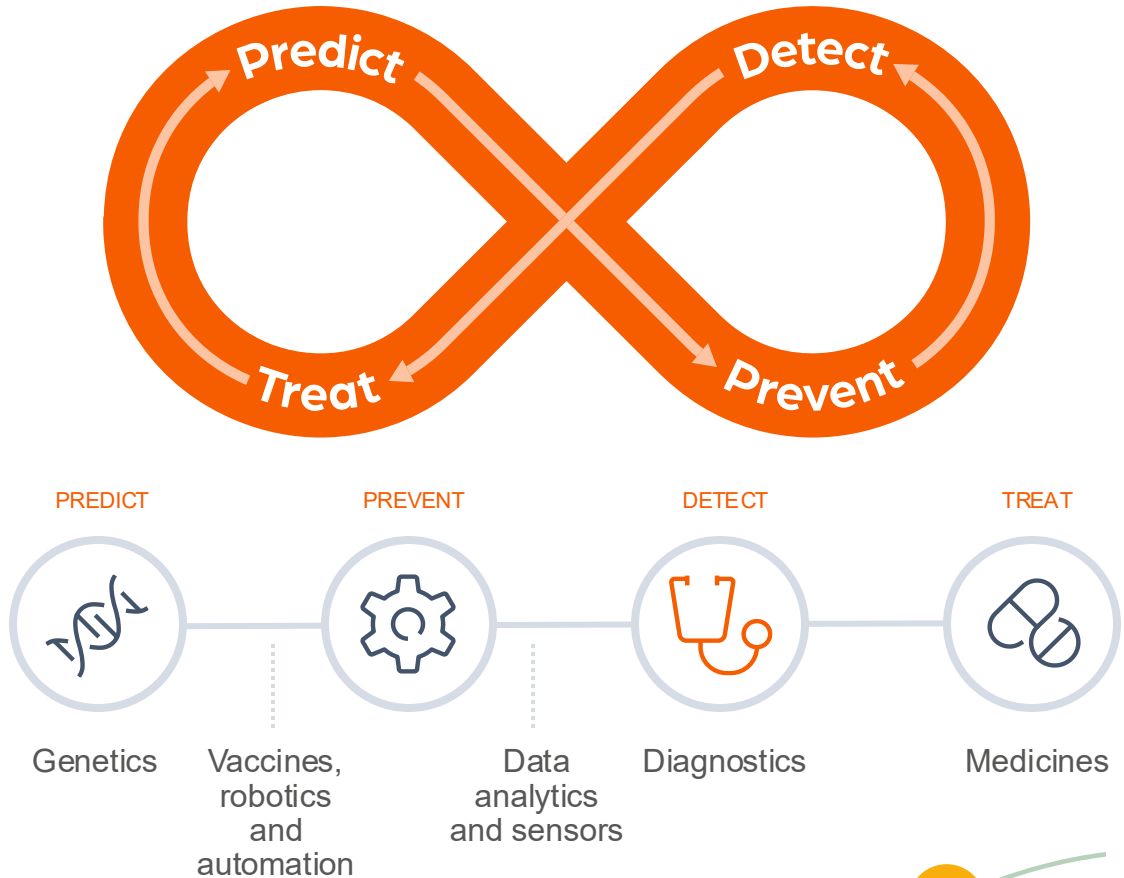
250 ¹ Note: Facts and figures shown are as of Dec. 31, 2023
¹ Excludes revenue associated with Client Supply Services and Human Health, which represented 1% of total 2023 revenue.

zoetis

Innovating Across the Continuum of Care

Globally, Zoetis invested
~AUD\$950m
in Research & Development in 2023

- 14% increase from 2022



A man wearing a straw hat and a plaid shirt is looking down at a tablet computer in his hands. He is standing in a grassy field with several brown cows in the background. The sky is overcast. A white curved line is visible in the top right corner of the image.

Increased AUSTRALIAN manufacturing capabilities

Recent purchase of both Jurox and the Parkville CSL
Manufacturing site

zoetis

Pre-lambing considerations

'It all starts with the ewe'

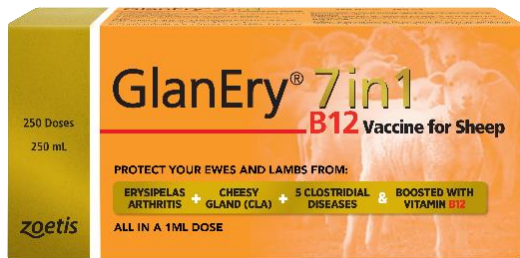


How can producers optimise pre-lambing management?

- Provide adequate nutrition
- Use a pre-lambing booster to maximise colostrum.
- Vaccinate to protect the ewe
- Manage internal parasites carefully over the pre-lambing period
- Ensure trace mineral supplementation is adequate.



The importance of good colostrum and vaccination



meatup
FORUM



GOOD
ewe
management

=

GOOD
colostrum

=

GOOD
lamb
immunity

Passive transfer of immunity

Where does colostrum come from?

Getting the best out of pre-lambing vaccination





Colostrum is the first milk.

LIQUID GOLD; KEEPING LAMBS ALIVE.

- Ewe transfers the antibodies circulating in the blood to the first milk which can then be absorbed by the lamb shortly after birth.
- Usually, the lamb needs to drink in the first 12 hours of life with most of the absorption occurring in the first 6 hours post lambing.
- This provides transient disease protection from antigens that the ewe has recently been exposed to.

Understanding why colostrum is important

- The ruminant placenta does not allow the transfer of immune cells
- Lambs are unable to develop their own antibodies until one month of age.
- The lamb is essentially borrowing the mother's immune cells until their own immune system develops



Lambs that do not receive adequate colostrum are more likely to die

- Failure of passive transfer (FPT) i.e. not enough antibodies consumed via colostrum, is associated with lamb losses
- Failure of passive transfer occurs due to the ewe not producing enough antibodies and/or lambs not drinking adequate quantities of colostrum in the right timeframe



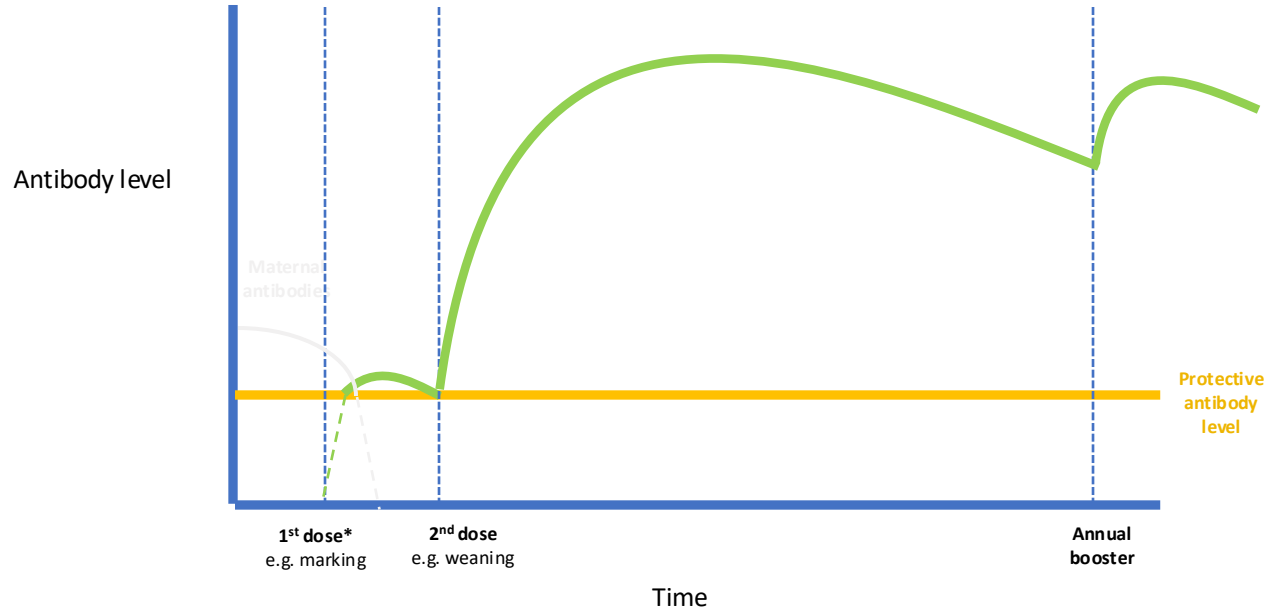
We can use vaccination to improve colostrum production in the ewe.

- In sheep colostrum production begins 2–3-weeks pre-lambing.
- Stops abruptly at time of lambing to allow development of milk
- We can use vaccination at the right

**VACCINATION =
SUPER CHARGED COLOSTRUM
= BETTER LAMB SURVIVAL**



PRINCIPLES OF VACCINATION

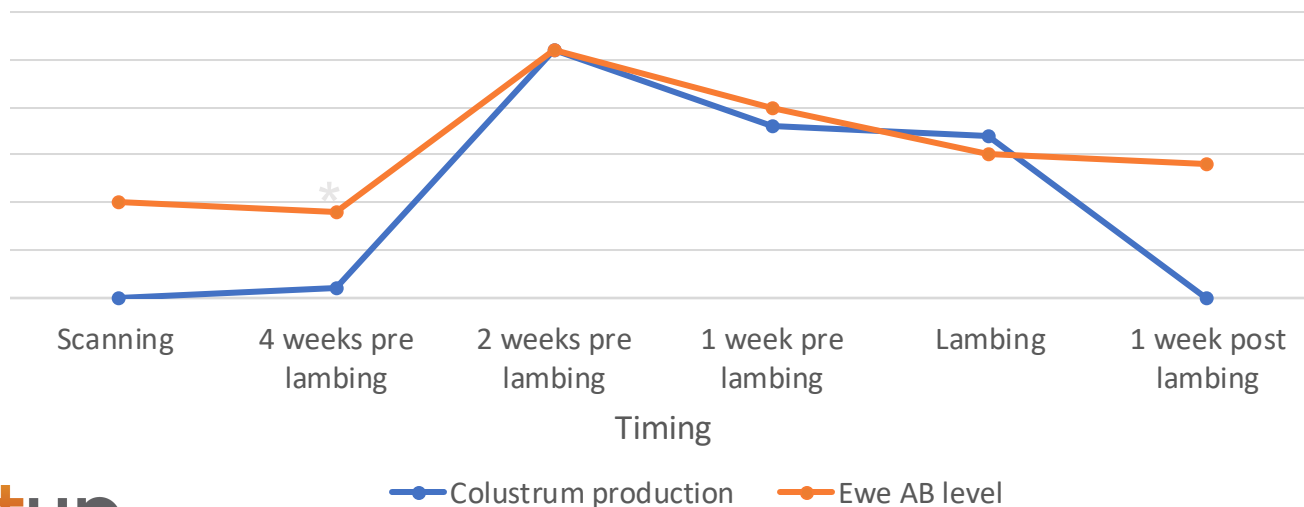


This is a schematic representation to demonstrate the principles of vaccination. Actual levels of antibody following vaccination will vary from vaccine to vaccine and animal to animal.

*the first dose of vaccine may not confer protective immunity

Producers can utilise vaccination timing to help produce super-charged colostrum

Ewe antibodies vs colostrum production pre lambing



Beef cattle and colostrum

- Principles are the same in cattle as in sheep
- Bigger focus on Leptospirosis prevention in cattle than sheep
- Colostrogenesis starts slightly earlier in cattle than in sheep

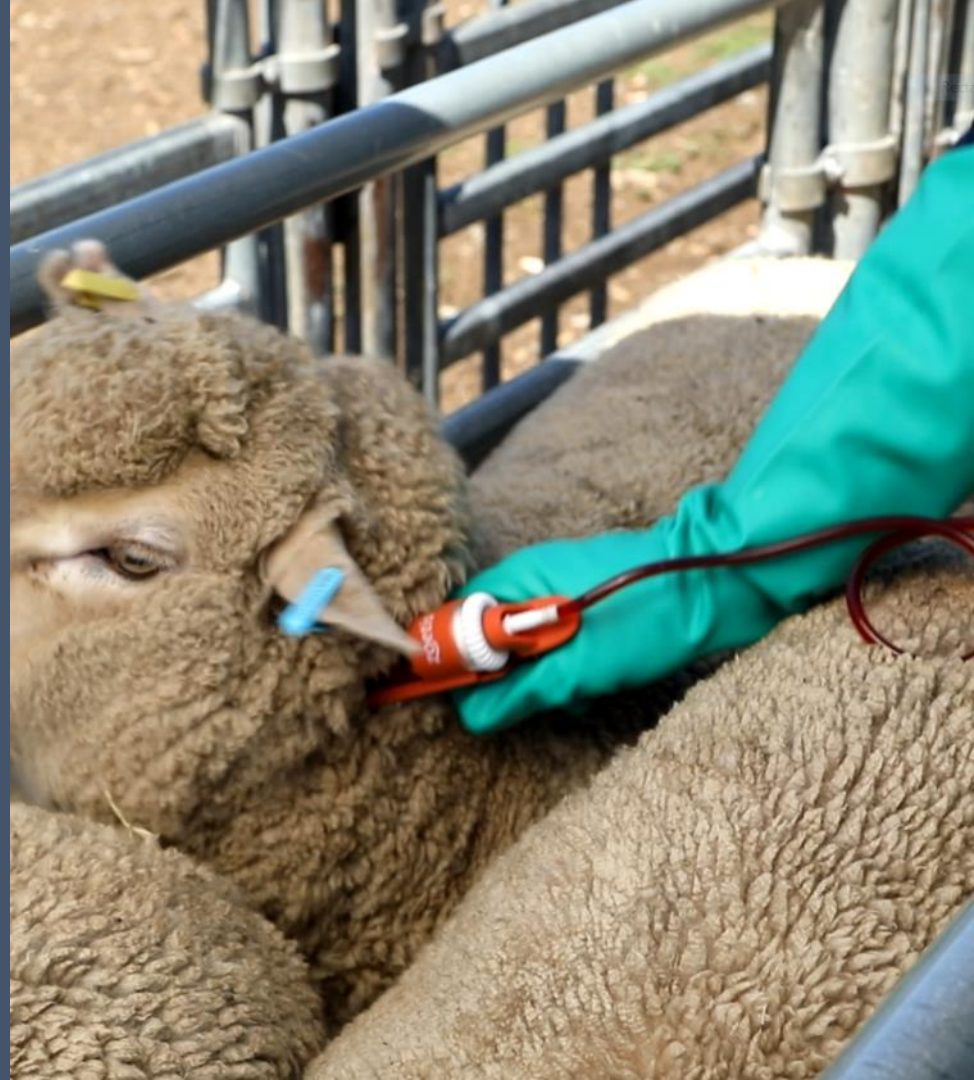


What vaccines are important pre-lambing to both protect the ewe AND protect the lamb

Clostridial diseases

CLA
(Caseous lymphadenitis or cheesy gland)

Erysipelas Arthritis



Clostridial diseases



Tetanus

- Bacterial spores abundant in the environment
- Marked lambs at high risk if unvaccinated – spores gain access through wounds
- Sudden death/stiff paralysis, signs typically post history of a



Pulpy kidney

- Bacteria in the environment and in the gut of healthy lambs
- Sudden death associated with changes in diet
- A booster vaccination is recommended prior to periods of risk

Clostridial Diseases costs the Australian sheep industry

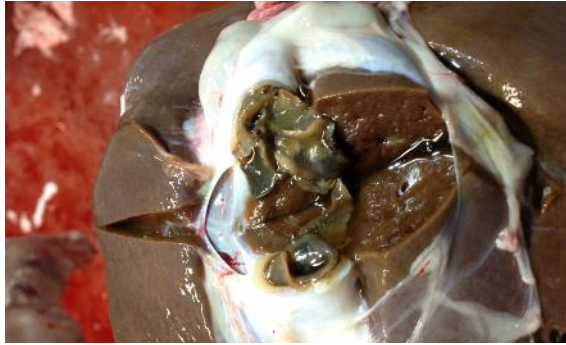
\$32MIL
each year!

Clostridial diseases continued.



Blackleg

- Bacterial spores in the environment enter through cuts in mouth/wounds and lodge in muscles
- Bruising → spores germinate and produce toxins → death
- Dark red to black muscle (gangrenous myositis)



Black disease

- Bacterial spores present in environment and body tissues of lambs, including liver
- Liver fluke associated due to migrating fluke allows spores to germinate, resulting in death
- Can also be associated with hydatids



Malignant oedema

- Introduction of the organism from the environment and the production of a small area of dead tissue
- Wounds, e.g. injuries, marking, fighting in rams (swelled head)

Caseous Lymphadenitis (CLA) or Cheesy Gland

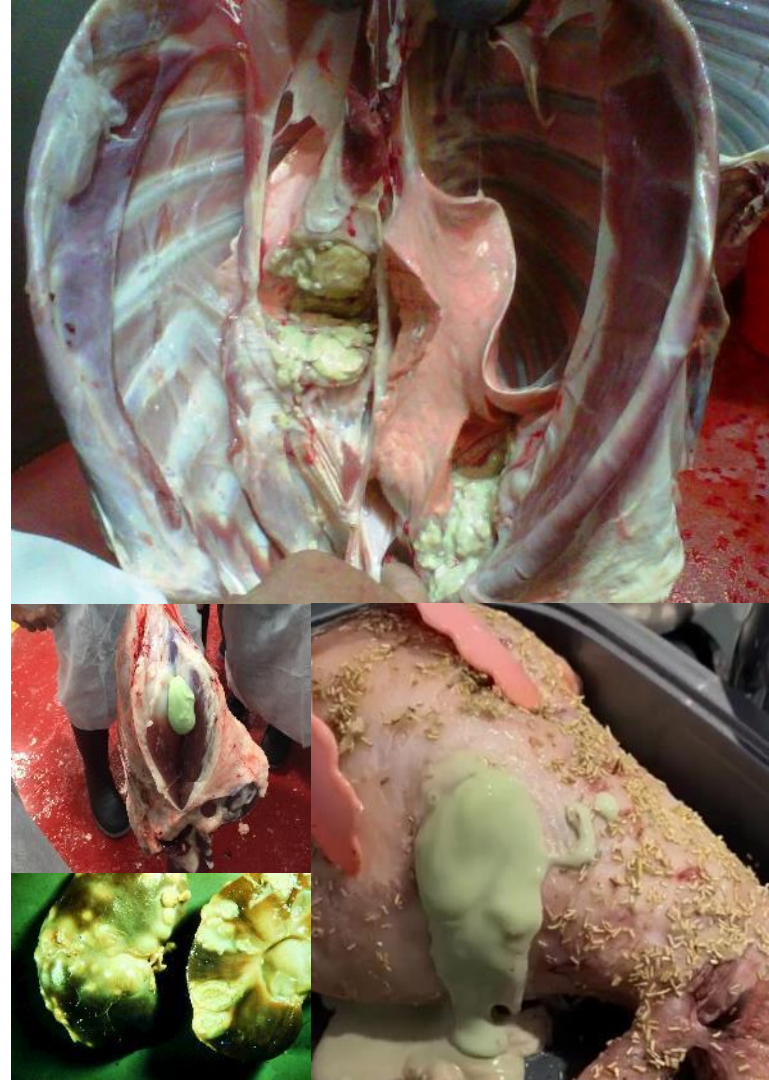
- Highly contagious bacteria that is widespread in sheep and goat herds (*Corynebacterium pseudotuberculosis*)
- Spread via respiratory exhalation or from ruptured superficial abscesses
- Spread primarily at shearing/yarding
- Bacteria can survive for months in environment – contaminates yards and dips
- Often a hidden disease with abscesses affecting major internal body organs and lymph nodes – may be some coughing



The on-farm impact of CLA

Pus filled abscess forms at the infection site causing

- Ill-thrift, lethargy and weight loss in lambs and sheep
- Meat quality issues
- Infertility & ram sterility
- Reduction in clean wool cut
- Zoonotic disease (can infect humans)



The economic impact of CLA

- Chronic losses on farm include reduced weight gain and reduced wool production.
- This disease accounts for **almost half** of all abattoir condemnations.

CLA infected sheep have a

4-7%

reduction in clean wool cut
in the first year of infection⁴

Cheesy Gland (CLA) costs the
Australian sheep industry

\$18MIL

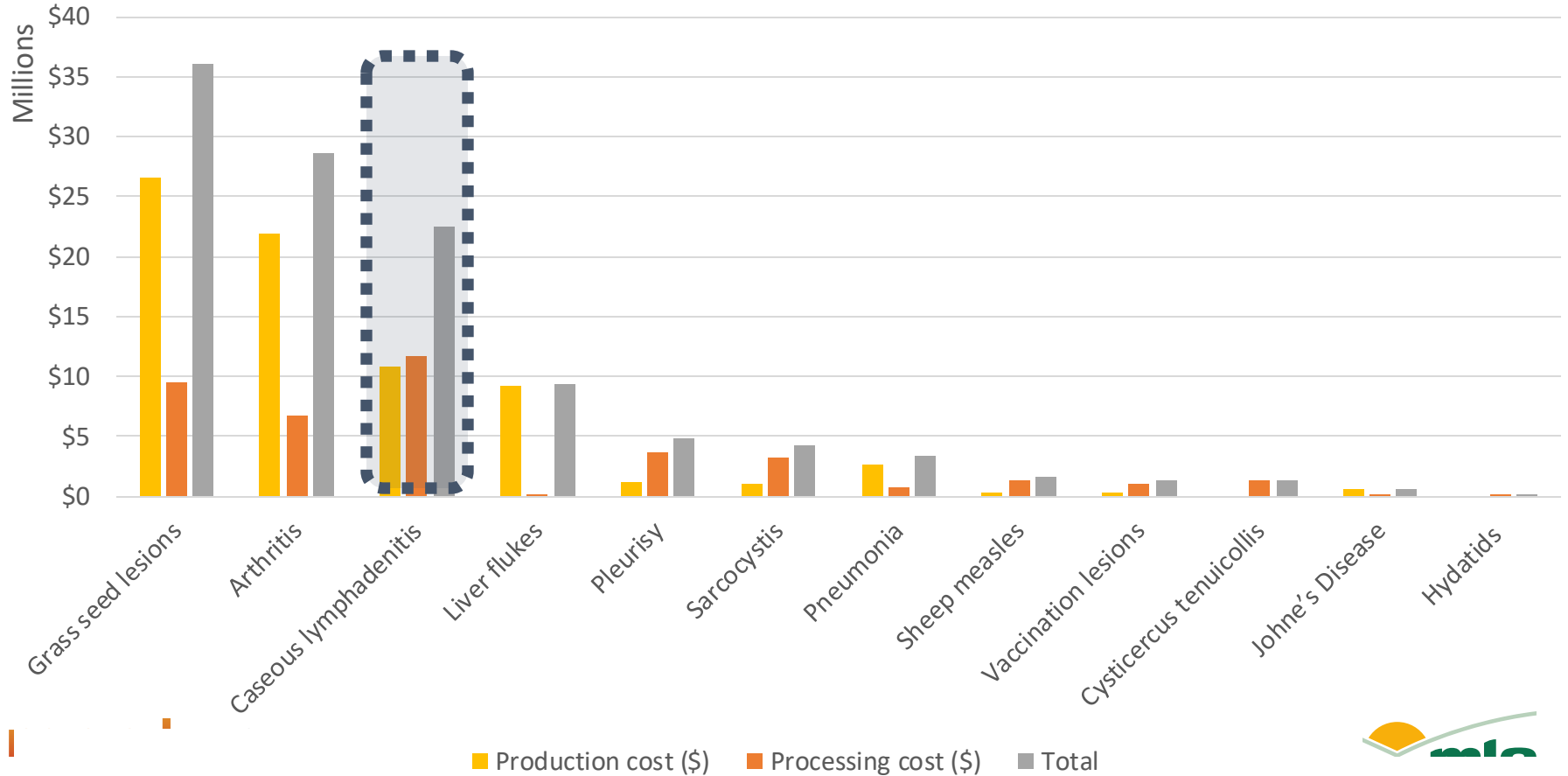
each year¹

50%

Almost
of 2+ year old sheep lines in
abattoirs are shown to be
infected with CLA



NSHMP Annual cost of disease

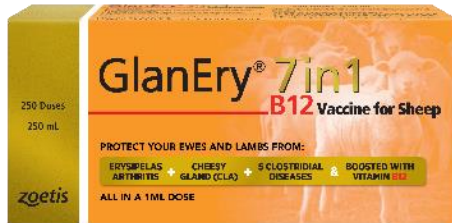


GlanEry 7in1 B12 efficacy against Cheesy Gland (CLA)

Field data:

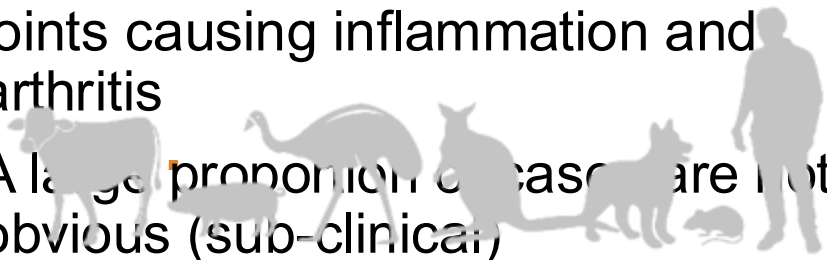
- Looking at flocks in an Australia wide study, a compliant long term vaccination program for CLA using Zoetis vaccines will bring down the prevalence of disease to around 3% vs 29% in non-vaccinated flocks
- Data also shows that non-compliant vaccination program did not significantly reduce disease prevalence

Recent CLA challenge studies showed that GlanEry 7in1 B12 vaccine is highly efficacious against CLA infection



Erysipelas Arthritis

- Soil borne bacteria that infects many species, including sheep, pigs, kangaroos, rodents, insects and birds
- Zoonotic disease (can infect humans)
- Most common cause of arthritis in lambs
- Bacterium enters via the umbilical cord or wounds, then localises in leg joints causing inflammation and arthritis
- A large proportion of cases are not obvious (sub-clinical)



Erysipelas Arthritis

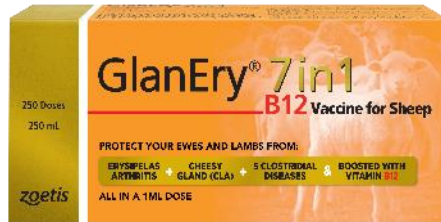
- Infection occurs in the paddock through wounds at marking, mulesing, dipping, shearing/crutching, umbilical cord and from the ewe's throat when cleaning afterbirth
 - Increased deaths and culls through ill thrift and lame lambs
 - Increased tail in the flock
 - Lambs that are unsalable or unfit to load (welfare issues)
 - C
 - C

1.4% of lambs born, die before weaning or are culled due to arthritis¹

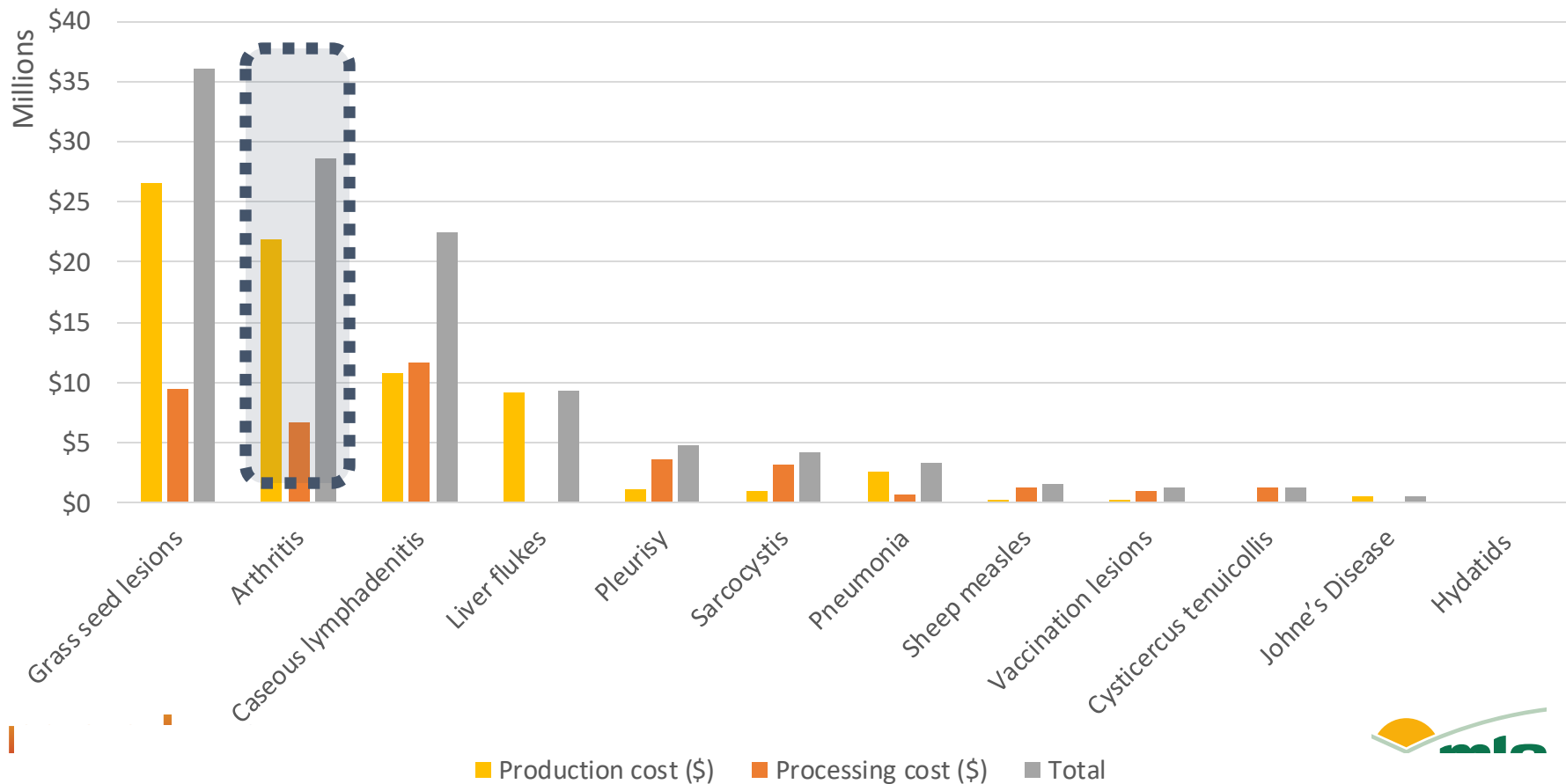


Managing erysipelas arthritis on farm requires a multifactorial approach

- Ensuring tails are docked at the correct length (3rd palpable joint)
- Good hygiene and pain relief at marking
- Avoid marking in muddy yards – ideally put lambs straight back onto the paddock post mark
- Vaccination of ewes pre-lambing will prevent erysipelas arthritis in young lambs
- Vaccination of lambs at marking and weaning will prevent erysipelas arthritis in weaner lambs



NSHMP Annual cost of disease



Effective parasite management

Don't forget about worms!



Pre-lambing ewes have a reduced ability to fight parasites



Faecal counts pre lambing

Building a picture to implement a strategy



- Good practice
- 6-8 weeks pre lambing
- Larval differentiation often pays off
- One piece of a bigger puzzle

Shorting acting or long acting (LA)?



Short acting

- ✓ Greater range of actives and combination products available
- ✓ Reduces selection for resistance
- ✓ Requires low paddock contamination

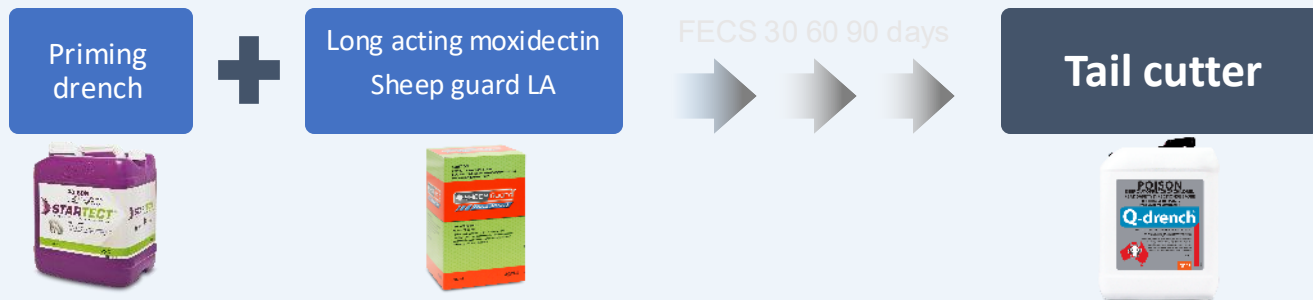
Long acting

- ✓ Limited actives and single active products only
- ✓ More heavily selects for resistant parasites
- ✓ Requires combination drench therapy
- ✓ Gives persistence which can help reduce paddock contamination for lambs

How to effectively use a LA product



- ✓ Only readily available product on the market is moxidectin
- ✓ Considerable production benefits in the face of high paddock contamination
- ✓ Primer and tail cutter should be effective short acting products



LA Moxidectin use pre-lambing



Care must be taken in the timing of moxidectin LA

- ✓ Timing (Ideally 5 weeks pre-lambing).
- ✓ Lipophilic - loves fat
- ✓ Sheep milk has a high concentration of fat
- ✓ Realistic expectation of moxidectin reducing re-infestation

Short acting drench selection



The most important drench decision you will make all year

- ✓ What works for you? Drench checks and FECRTs
- ✓ Use combination drenches
- ✓ Rotate between combination products

New active dual combination

Q-drench

Powerful 4-way combination drench

Dectomax V

Only dual active injectable drench available in Australia





Drenching Beef Females

- 1st and 2nd Calvers in Autumn herd require a drench containing a ML in Dec/Jan
- Adult cattle have strong resistance to Ostertagia
- Pre-calving drench is not a routine treatment unless indicators for treatment are present
- Injectable formulations result in higher blood levels of the active ingredient and more reliable dosing

Summary

- Nutritional management is of vital importance to ewes around lambing
- Colostrum is a key component of lamb survival.
- Sheep producers can utilize pre-lambing vaccinations to improve colostrum.
- Drench ewes prior to lambing
- Trace mineral supplementation can reduce morbidity around the lambing period.

A large orange thought bubble with a smaller tail at the bottom right, containing the text "What questions do you have?".

**What questions
do you have?**

Check out MLA's new genetics hub

No jargon. No complexity. Just a clear look at how better breeding values can help you accelerate the productivity of your herd or flock

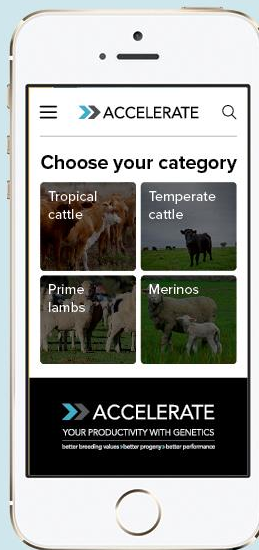
How-to videos to find sires on BREEDPLAN/ Sheep Genetics



How-to videos to get started with breeding values



How-to videos on shopping for a high-performing sire



'Can you Pick the Performer' videos



Producer case study videos



Further learning and resources

genetics.mla.com.au

What's next after today's **meatup** ?

FORUM



PRODUCER DEMONSTRATION SITES

allow producer groups to apply
research on farm while at the same
time grow their knowledge and skills.

mla.com.au/pds

What's next after today's **meatup** [↑] ?

FORUM

PROFITABLE GRAZING SYSTEMS

matches

Small groups of producers
who want to improve their
whole-farm performance



Coaches who share their
knowledge, skills and
experience



Practical and relevant
courses including: feedbase,
reproduction, business,
people, value chain



mla.com.au/pgs

What's next after today's **meatup** [↑] ? FORUM



EDGE WORKSHOPS

help producers gain knowledge and skills to improve their livestock enterprises.

Which one will you try first?



Business
EDGE



Breeding
EDGE



Nutrition
EDGE



Grazing Land
Management

mla.com.au/edge

Not an MLA member?

Join 50,000 livestock producers and sign up today.

FREE
to levy-paying
red meat
producers



MLA members receive:

- ✓ MLA's *Feedback* magazine delivered to your mailbox, five times a year
- ✓ weekly e-newsletters with latest market and industry news
- ✓ the opportunity to vote at MLA's Annual General Meeting
- ✓ invitations to events throughout Australia.

Sign up at

mla.com.au/membership
or call 1800 023 100

Networking drinks and canapes

60 minutes