PDS: LOTSA LAMBS – *Improving Reproduction Success - 2023 update*

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Background

As a result of the impact of drought, ewe numbers are low both locally and nationally. To facilitate the rebuild of the flock, it is necessary to produce more from the existing ewe base through maximising reproductive efficiency and minimising mortality. Seasonal conditions have led to many producers aiming for an autumn lambing to utilise feed available to lambs due to shorter springs and extended low feed on offer due to extended summer conditions. Producers are aware of the research that indicates higher lamb survival from twin bearing ewe flocks run as smaller groups at lambing. Most are unsure how to best implement this strategy, particularly in a mixed farming system with a focus on cropping. On the ground solutions and demonstrations are required for producers to be able to see how this strategy could possibly work in their sheep flock.

Many producers have adopted the strategy of feeding ewes in containment in late summer and early autumn, often through much of their pregnancy. Common practice for a Nov-Dec joining is a 7-8 week joining period, and a lack of pregnancy scanning resulting in significant variation in nutritional requirements of the ewes at any one time. The adoption of early pregnancy scanning, scanning for multiples and condition scoring should allow targeted feeding of mobs while held in containment, and reduce problems such as dystocia due to over feeding of later lambing single bearers.

Part of this project will look at improved genetic selection in commercial flocks, incorporating data collection and analysis on reproduction success, understanding ram genetics and Merino Flock Profiling (MFP). The aim being to refine breeding objectives and plan for future breeding decisions with fertility in mind, including an understanding of the traits to focus on, to breed robust animals for UNFS production systems.

Methodology

Review and demonstrate:

1. At two sites demonstrate the value of;
   i. reduced joining period to 5-6 weeks
   ii. correct ewe to ram ratios
   iii. managing and feeding mobs separately based on condition score and foetus number.
   iv. matching nutrition needs to rations

Measure feed consumption, lamb survival and ewe condition score. Analyse gross margins and cost of production ($/kg lamb produced). Record other observations of variations in animal health and condition. (2 lambing cycles).

2. Establish two demonstration sites for improved pregnant ewe management incorporating:
   i. Development of a clear breeding objective including improved genetic data and decision making
   ii. Pregnancy scanning
   iii. Splitting twin bearing ewes into smaller groups for lambing.
   iv. Ewe condition scoring and segregation within single bearing ewes based on condition.

Measure lamb survival and assess the cost:benefit of the practices. Record other observations of variations in animal health and condition. (3 lambing cycles)

Run 5 extension activities for UNFS members. The workshops to be delivered by recognised industry experts in condition scoring, feed budgeting, impact of mob size, effective confinement feeding, using ASBVs and the RamSelect app, breeding objective development and interpreting Merino Flock Profile results. Principles will be based on the AWI Life Time Ewe Management Course content.

Results and Discussion

	Number of lambs	Number of ewes	% Lambing	Industry Target % (sheep connectSA website)
Site 1				
Singles 2022	68	62	110%	92%
Multiples 2022	150	128	117%	150%
		AV	115%	
Site 1				
Singles 2023	71	65	109%	92%
Multiples 2023	104	76	137%	150%
		AV	124%	
Site 2				
Singles 2022	124	139	89%	92%
Multiples 2022	198	225	88%	150%
		AV	88%	
Site 2				
Singles 2023	327	232	141%	92%
Multiples 2023	453	292	155%	150%
		AV	149%	
Site 3				
Singles 2023	333	322	103%	92%
Multiples 2023	299	181	165%	150%
			126%	

Note: Ewe deaths & drys removed from data

Table 1. *Lamb marking results – multiple and single bearing ewes*

Site 1 and 2

Two demonstration sites were provided by Upper North producers located at Gladstone and Caltowie to implement the practice of pregnancy scanning and lambing multiples in smaller mobs. The demonstration sites ran twin-bearing ewes in mobs of 100 or fewer during lambing to reduce the risks of mismothering, ewe-lamb separations, and lamb mortality. 2022 presented challenging lambing conditions at the demonstration properties due to a late break in the season, lack of feed on offer for pregnant ewes and harsh cold conditions during lambing. Adequate shelter is a limiting factor for both site 1 & 2 and was reflected in poorer results in 2022 compared with 2023, as shown in Table 1.

Site 1 showed an increase in lamb survival in 2023 from already strong results in 2022. Site 2 showed the most significant improvement in lamb survival from 2022 to 2023. Smaller paddocks were available at site 2 in 2023 which enabled mob size to be further reduced for twin bearing ewes. Additionally, ewe mortality decreased at site 2 in 2023.

Environmental factors also played a role in positive results in 2023, with an earlier break in the season providing nutritional green pick for pregnant ewes and lambs and as well as milder weather conditions at the time of lambing. Ewes were supplementary fed at both sites for 2022 and 2023 with rations provided as part of the project for consistency.

Site 3

Feedtests on hay, grain and pastures were conducted and rations provided for optimal ewe health during pregnancy. Ewes were pregnancy scanned and twin bearing ewes split into mobs of less than 100. Lambing results were above industry targets at this site, indicating that implementing practices such as pregnancy scanning, matching nutrition with pregnancy status and lambing twin bearing ewes in smaller mobs results in improved reproductive success. Single bearing ewes had an average condition score of 3, and twin bearing ewes were 3.5 which was ideal condition for ewes pre-lambing as a result of tailoring supplementary nutrition to ewe needs as well as seasonal conditions being favourable with good feed on offer in 2023 at the time of late pregnancy and lambing.

Conclusion

The PDS project has enabled demonstration site landholders to have individual sessions and ongoing support with Deb Scammell from Talking Livestock. These sessions plan for selective management of twin-bearing ewes, including ewe nutrition, condition scoring, feed budgeting, the impact of mob size, and effective confinement feeding based on the principles of Life Time Ewe Management. Breeding objectives and genetic selections have been taken into consideration at all demonstration sites as part of the management decisions.

Segregation of ewes within mobs based on condition score was recommended but not always practical or possible due to paddock availability at the demonstration sites. If there is too much of a range in condition scores while supplementary feeding, it can affect ewe mortality, lamb birthweights and survivability This could have improved lambing results further and is a management practice that could be considered by these producers into the future.

Overall, results so far indicate that reproduction success can be maximised by implementing the best practice management strategies demonstrated in this project. This demonstration will continue in 2024, with additional confinement feeding sites in the project. Undertaking a cost benefit analysis will provide producers with the confidence to consider implementing these principles to their enterprise.

Image 1. *2023 PDS landholders – Alison Henderson, Lachie Smart, Andrew Kitto and Nathan May with Rachel Trengove, UNSF and Deb Scammell, Talking Livestock.*

Image 2. *Workshop 4 at Lachie Smart's farm, Wirrabara – Containment feeding pregnant ewes and lambing in smaller mobs demonstration.*

Image 3. *Workshop 4 – Rachel Trengove and Deb Scammell collecting feed samples in Lachie Smart's lambing paddock. Lachie*

Image 4. Workshop 4 – Guest presenters – Colin Trengove, ProAg Consulting, Caitlin Evans, Adelaide University, Jessie White, Northern & Yorke Landscape Board, Deb Scammell, Talking Livestock, Rachel Trengove, UNFS and Lachie Smart, PDS landholder, Wirrabara.

Image 5. *Workshop 4 – Guest presenters – Colin Trengove, ProAg Consulting, Deb Scammell, Talking Livestock, Megan Tscharke, Adelaide University with Rachel Trengove, UNFS and workshop hosts, Michael & Katherine Battersby.*

Image 6. *Pregnancy scanning at Andrew Kitto's farm to split twin bearing ewes into smaller mobs.*

Activity	Date & Location	Workshop Objective	Activity Description
Workshop 3: Implementing eID's on farm and Improving Reproductive Success	23rd February 2023 Caleb Girdham's farm, Melrose	To provide a hands-on demonstration by presenter and farmer on how to incorporate technology into containment yard design as well as implementation of eID's on farm for efficiency and productivity outcomes.	**NATHAN SCOTT (Achieve AG Solutions) – eID – what's in it for me?** The what, how, and why (or why not) of applying it practically on your farm. ▪ Equipment options ▪ How the technology works ▪ What data to collect ▪ Understanding the implications of applying selection pressure ▪ How to collect data & tips on managing data **DEB SCAMMELL (Talking Livestock) – Improving Reproductive Success** ▪ Pregnancy requirements & this season's feed ▪ The fit of containment this year ▪ Containment costs $$ - benefits and feed on offer – the data FREE FEED TEST WAS AVAILABLE FOR ALL PARTICIPANTS STICKY BEAK AT GIRDHAM'S AUTODRAFTER, YARDS AND CONTAINMENT FEEDING SET UP CO-FUNDED WITH N&Y LANDSCAPE BOARD
Workshop 4: LOTSA LAMBS Improved Weaner Management	9th June 2023 Smarts Farm, Wirabara 20th June 2023 Battersby's Farm, Wilmington	For guest presenters and sheep experts to provide valuable insights and guidance on optimizing weaner management practices such as nutrition, health, and other relevant topics.	**Deb Scammell, Talking Livestock** ▪ The weaning process ▪ Weaner growth targets ▪ Weaner nutrition & maximising spring feed ▪ Successful breeders from weaners **Colin Trengove, ProAg Consulting** ▪ Strategies to optimize weaner health ▪ Preventing worms and other common challenges **Adelaide University - Heat Stress in Sheep project in the Upper North** ▪ Managing heat stress in sheep ▪ The benefits of using vitamins & melatonin (Regulin®) to improve the productivity of sheep during periods of heat ▪ Results from the Upper North FREE FEED TEST WAS AVAILABLE FOR ALL PARTICIPANTS STICKY BEAK AT SMART'S AND BATTERSBY'S YARDS AND CONTAINMENT FEEDING SET UP CO-FUNDED WITH N&Y LANDSCAPE BOARD

Table 1. *Summary of the extension activities undertaken in 2023 for PDS: LOTSA LAMBS*

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