Final report

L.PDS.1908 Post Weaning Management Strategies for Beef Herds

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Prepared by: Jo Ward
Jo Ward Livestock Vet, On behalf of Mackillop Farm Management Group

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Meat & Livestock Australia Limited
PO Box 1961
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Abstract

Autumn and spring calving beef herds in southern Australia often fail to maintain adequate growth rates of calves from weaning to the autumn break, resulting in a stagnation of growth for up to 6 months of the year. This has a significant impact on producers' profitability. This project was set up to investigate different post-weaning management systems to improve post-weaning growth rates prior to selling or joining and heifer conception rates.

The project extended over five years with 11 participating beef businesses. These businesses represent approximately 18000 Ha and 6000 beef breeders across the Western District (WD) of Victoria and Limestone Coast (LC) of South Australia. Data collected for this project indicated that weaning method, weaning age, weaning weight and post-weaning management strategies vary substantially among producers. Many interactive days were held across course of the project, with strong involvement from many different industry professionals and an emphasis on peer-to-peer learning. On average, producers indicated average overall satisfaction with the project at 8/10, and average overall value at 8.5/10. All producers who completed the post project survey indicated that they would recommend MLA's PDS program to others.

Project findings confirm that optimizing weaner nutrition through cost-effective feeding strategies maximizes gross margins while delivering significant, albeit difficult to quantify, animal health benefits. Data collection and reflection on previous years provide a valuable foundation for informed decision-making, ensuring continuous improvement in management practices. When feed provided aligns with weaner nutritional requirements for growth in the most cost-effective form, profitability is maximised. In contrast, the provision of high-cost supplements at suboptimal volumes that fail to support optimal growth represent the least profitable outcome with expense outweighing return. This underscores the importance of understanding animal nutritional requirements and conducting feed testing to support precise ration formulation. Continuous monitoring is essential to ensure those requirements are met and to optimise growth outcomes. Peer-to-peer learning also emerged as a powerful tool in farm businesses, fostering collaboration, innovation and the uptake of best practices. Importantly, establishing effective weaning practices sets animals up for long-term success, positively influencing lifetime health, productivity, and overall performance.

Benefits to the wider Southern beef industry have included the development of extension articles, producer case studies, podcasts and videos. Producers within the group have increased their network both among their peers and with industry professionals, which will continue to serve their businesses moving forward.

Executive summary

Background

Autumn and spring calving beef herds in southern Australia often fail to maintain adequate growth rates of calves from weaning to the autumn break, resulting in a stagnation of growth for up to 6 months of the year. This has an impact on producers' profitability, as cattle are held for longer, consume more feed and are sold at a time when supply is at its highest and prices are often at their lowest. Extended periods of growth stagnation can also negatively impact eating quality by resulting in increased ossification levels. Research indicates that heifers that receive a growth check and then experience compensatory growth have a smaller pelvic size than those that have continued growth through the same period, resulting in a higher risk of dystocia. This topic (post weaning management strategies for beef herds) has been identified by many members of the MacKillop Farm Management Group (MFMG) as of high value to their businesses, creating options for them to increase productivity and profitability on their farms.

This project was initially designed to quantify the cost benefit of different post weaning management systems for cattle in the Limestone Coast (LC) of South Australia and Western District (WD) of Victoria to maintain adequate growth rates to reach production targets in steers and heifers. Additionally, it aimed to upskill participants to enable them to feel confident in accurately assessing feed on offer, collecting data on farm to inform decisions, and promote peer-to-peer learning through discussion group sessions focusing on topics relevant to post-weaning performance.

Results from the project will be beneficial to participating businesses, ensuring they are able to adopt the most productive and profitable approach to weaner management. This information will also be available to the wider industry, allowing livestock businesses to not only select the most suitable strategies for feeding weaners through the autumn feed gap to maintain production, but provide access to resources to be able to measure and adapt those practices as required.

Objectives

By June 2025, the project will:

1. Demonstrate and conduct cost benefit analysis of at least 8 local feeding strategies per year on at least 8 sites for weaner cattle management, from 1 weaning until 6 weeks post autumn break, using an industry standard cost benefit calculator. Local strategies may include dryland pasture, irrigated pasture/crops, lucerne, fodder crops, stubble, grain supplementation and/or containment, in keeping with the management of individual farms. Each site will choose the strategies to be trialled each year, based on the feed available and the most suitable feeding method for each farming business. (Partially achieved).
2. Assess the impact of different post weaning strategies on joining weight and conception rate of heifers by measuring:
    a. Growth rate from weaning until 6 weeks post autumn break (partially achieved)
    b. Conception rate at pregnancy testing (not achieved)
3. Assess the impact of different post-weaning strategies on growth rate, turnoff time and carcass/animal value by measuring:

a. Growth rate from weaning until 6 weeks post autumn break (partially achieved)

b. Days from weaning until sale (partially achieved)

c. Carcass/animal value at sale (partially achieved)

4. Assess the feed value and feed on offer of each management strategy. (Partially achieved).

5. Result in:

a. 100% of PDS core producers understanding and identifying their post weaning growth path and potential to improve this (achieved)

b. 100% of PDS core producers adopting the most cost beneficial post-weaning strategies for their enterprises (achieved)

c. 50% of observer producers who attend the annual field days implementing or planning to implement changes to their current post weaning management strategies. (Not measured)

Methodology

A group of 11 beef producing businesses located across the LC of South Australia and WD of Victoria looked at different post weaning management strategies for beef cattle. All businesses measured weaner weights from weaning to 6 weeks post the autumn break over a period of 5 years. Weaner weights were compared relative to feed availability and quality, with different strategies used between farms and in some cases between seasons to determine best practices.

Over the course of the project there was a number of interactive discussion days involving different industry professionals from livestock veterinarians, agronomists and livestock nutrition advisors through to business consultants and feed company representatives. There was a strong emphasis on peer-to-peer learning both within the group and including producers from the wider industry.

Results/key findings

Findings indicate that low-cost, pasture-based systems can be highly profitable when weaner nutritional requirements are met. In contrast, supplementary rations such as pellets and lupins must deliver substantial efficiency gains to offset their higher costs. Control groups maintained on hay and pasture consistently outperformed supplemented groups, particularly in higher-rainfall seasons where some good quality pasture remained available, underscoring the value of strategic pasture management to extend feed availability into autumn and reduce input reliance. The prolonged dry conditions of 2024 led to no pasture availability and reinforced the role of alternative feed sources which, when fed at appropriate rates, proved more profitable by sustaining growth rates.

Rumen adaptation challenges influenced outcomes in some trials, where slow transitions may have contributed to lower profitability compared to controls. Ensuring smooth shifts between forage types can mitigate setbacks and improve feed conversion efficiency. Additionally, inadequate inclusion rates of high-quality supplements often failed to enhance overall diet quality enough to boost growth rates, underscoring the need for precise ration formulation.

Weaners with higher ADG (above 0.50 kg/day) consistently generated stronger financial returns, reinforcing the importance of monitoring weight trends and adjusting feed strategies accordingly. Flexible post-weaning management is critical for profitability, particularly in challenging seasons where higher-cost supplements may be necessary. A balanced strategy integrating baseline pasture feeding with targeted supplementation during feed shortages enhances feed conversion efficiency and supports cattle in achieving target weights amid seasonal variability.

Despite limited post-project survey responses, the project delivered meaningful outcomes in knowledge, attitude, skills, and aspirations (KASA), as well as practice change. Core producers showed a clearer understanding of post-weaning growth and feed strategies, with improved confidence in evaluating and adjusting their practices. While some initially overestimated their ability to assess feed-on-offer and interpret feed test results, the project helped reveal knowledge gaps and reinforced the value of expert advice. All core producers adopted at least one cost-effective change, such as targeted supplementation or revised weaning timelines, while around 50% of observer producers reported implementing or planning changes. Barriers to broader adoption included time constraints, labour shortages, and uncertainty around application. Overall, the project fostered a culture of critical evaluation and continuous improvement, with producers reporting better weaner performance, more strategic feed use, and increased confidence in data-informed decision-making.

Extension and communications have included a podcast episode as well as multiple newsletter articles.

Benefits to industry

This project has enhanced producers' ability to measure, assess, and make informed decisions on beef weaner management. Strong industry connections between research, advisors, and producers reinforced the value of ongoing support in animal health, nutrition, and agronomy. Perhaps the most significant benefit to participating producers was the peer-to-peer learning with the facilitation of abundant discussion as well as the opportunity to inspect numerous different properties and farm businesses. Not only does this support learning opportunity, but it provides important networking and motivation in an otherwise often solitary work environment.

From a greater industry perspective, this project has provided case studies and gross margin analysis of different post weaning management strategies to aid producers in determining best practices for their operation. It has highlighted the need for increased awareness and increased quantification of weaner weight gain and feed quality in the beef industry.

Future research and recommendations

This project has highlighted the need for more structured investigation of best practice post weaning management strategies for beef cattle; however, this would require significant funding to ensure producer involvement without significant financial strain on individual businesses. A more structured approach would also allow for increased data collection improving accuracy of results, leading to a more unambiguous translation of the profitability of improving weaner weight gains.

With one of the main benefits of this project being the facilitation of both peer-to-peer learning and collaboration between industry experts and producers, moving forward there is need for increased access to formalised discussion groups in the beef industry.

PDS key data summary table

Project Aim:
To upskill participants to enable them to feel confident in collecting data on farm to inform decisions and promote peer-to-peer learning through discussion group sessions.

	Comments		Unit
Number of core participants engaged in project		11	
Number of observer participants engaged in project		90	
Core group no. ha		20459	
Core group no. sheep		45130	hd sheep
Core group no. cattle		10408	hd cattle
% practice change adoption – core	*Weigh weaner calves at or immediately post weaning*	75%	
	Weigh autumn calves over the autumn period	50%	
	Undertake laboratory feed analysis (feed test)	100%	
	Undertake FOO (feed on offer) assessment in paddock	50%	

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1. Background

1.1 The MacKillop Farm Management Group

The MacKillop Farm Management Group (MFMG) collaborates to deliver research and drive adoption for the benefit of members and the broadacre cropping and livestock industry across the LC of SA, western Victoria and beyond. The group has 317 members, producing over half of SA's red meat and 300,000T of grain per year. Operating for over 20 years, MFMG has extensive experience in delivering agricultural demonstration sites and communication activities, working with industry organisations and businesses locally and nationally to ensure members can access cutting edge knowledge about their farming systems.

Through general consultation, MFMG members identified a range of areas of interest including integrating livestock and cropping systems to maximise profitability, optimising pasture growth, increasing productivity and profitability and managing livestock more efficiently and effectively. Subsequently, 'post weaning management strategies for beef herds' was established as a topic of high value to participating businesses, creating opportunities for them to increase both productivity and profitability on their farms.

1.2 Stagnation of weaner growth

Autumn and some spring calving beef herds in southern Australia fail to maintain adequate growth rates of calves from weaning to the autumn break, resulting in a stagnation of growth for up to 6 months of the year. This has an impact on producers' profitability, as cattle are held for longer, consume more feed and are sold at a time when supply is at its highest and prices are often at their lowest. Extended periods of growth stagnation can also negatively impact eating quality by resulting in increased ossification levels. Research conducted by the Beef CRC also indicates that heifers that receive a growth check and then experience compensatory growth have a smaller pelvic size than those that had continued growth through the same period, resulting in a higher risk of dystocia.

1.2.1 Impact on producers and how it is being addressed

Currently, this issue affects the majority of beef herds in southern Australia and is estimated to impact at least 75% of producers across the LC and WD. At the initiation of this project this issue was not being addressed directly, however there are some projects and industry initiatives that related to this indirectly including the following MLA projects;

- Reproductive Health and Management Practices for Beef Heifers
- Increasing Profit with Dual Purpose Crops
- Fodder Systems and Feed Gaps
- Weaner to Yearling Production Pays Off
- Filling the Autumn Feed Gap

These projects mainly focus on sowing pasture varieties or fodder crops to fill feed gaps, or the reproductive benefit of maintaining heifer growth rates. They do not however encompass the full gamut of methods that could be used to maintain adequate growth rates over the post-weaning to autumn break period, hence the demand for a project of this nature.

1.2.2 Results of the demonstration

This project was intended to provide producers with the opportunity and resources to investigate and implement the most effective weaning management strategies, balancing both animal performance and long-term economic viability. To achieve this, the project combined practical demonstrations, facilitated group discussions, one-on-one support, and access to technical expertise. Producers were encouraged to critically assess their current practices, trial new approaches suited to their unique enterprise conditions, and build the skills needed to monitor outcomes. Through exposure to feed testing, feed-on-offer assessments, and cost-benefit analysis tools, participants developed the confidence and capability to make informed decisions and adapt post weaning management strategies in response to seasonal and business-specific challenges.

2. Objectives

1. Demonstrate and conduct cost benefit analysis of at least 8 local feeding strategies per year at at least 8 sites for weaner cattle management from weaning until 6 weeks post autumn break, using an industry standard cost benefit calculator. Local strategies may include dryland pasture, irrigated pasture/crops, lucerne, fodder crops, stubble, grain supplementation and/or containment, in keeping with the management of individual farms. Each site will choose the strategies to be trialled each year, based on the feed available and the most suitable feeding method for each farming business.

Objective 1 was not fully achieved due to the provision of inadequate data. Data collection across producer demonstration sites proved more difficult than anticipated. While the original goal was to gather individual animal data alongside pasture availability, quality, and supplementary feed inputs, several challenges emerged. Despite mandatory eID tags, not all producers were familiar with data collection or formatting for submission. Time and labour constraints further limited consistency. Variability in calving times and seasonal conditions across sites complicated coordination, with differing pasture types and weaning strategies requiring tailored measurement timelines. Although most producers captured some data, complete and usable datasets were not consistently achieved, particularly in the project's first two years.

Gross margin analysis from 7 properties across the course of the project can be found in Appendix 1-7 (Confidential).

2. Assess the impact of different post weaning strategies on joining weight and conception rate of heifers by measuring:
    a. Growth rate from weaning until 6 weeks post autumn break
    b. Conception rate at pregnancy testing

Objective 2 was partially achieved. Gross margin analysis of different post weaning strategies can be found in Appendix 1-7 (Confidential) examining the time frame from weaning to green feed on the ground and considering weight gain of weaners and cost of feed. Inadequate data was provided to accurately assess the impact of these weaning strategies on conception rate at pregnancy testing.

3. Assess the impact of different post-weaning strategies on growth rate, turnoff time and carcass/animal value by measuring:
    a. Growth rate from weaning until 6 weeks post autumn break
    b. Days from weaning until sale
    c. Carcass/animal value at sale

Objective 3 was partially achieved. Due to extreme variations in both seasonal conditions and livestock prices over the course of the project, whilst the growth rate from weaning until 6 weeks post autumn break was able to be assessed in most cases, the days from weaning until sale and the carcass/animal value at sale was more difficult to analyse. This is discussed in further detail in this report.

4. Assess the feed value and feed on offer of each management strategy.

Objective 4 was partially achieved. While feed quality and feed on offer (FOO) data were not consistently available for detailed analysis of each weaning strategy, the project successfully influenced producer behaviour. All survey respondents reported they will now incorporate both feed testing and FOO measurements into routine management. This shift highlights a key outcome: even without complete data, the project effectively reinforced the value of understanding both the quality and quantity of feed available to weaners, prompting lasting changes in on farm decision making.

5. Result in:
    a. 100% of PDS core producers understanding and identifying their post weaning growth path and potential to improve this.
    b. 100% of PDS core producers adopting the most cost beneficial post-weaning strategies for their enterprises.
    c. 50% of observer producers who attend the annual field days implementing or planning to implement changes to their current post weaning management strategies.

Objective 5 was achieved. Results demonstrate that the project successfully drove both understanding and action, with measurable improvements in post-weaning management across a wide range of producers. Pre and post KASA surveys for observer and core producers have been provided separately as Appendix 8 and 9 (Confidential).

3. Demonstration Site Design

3.1 Methodology

This project was initiated in 2019, unfortunately not long before the outbreak of COVID-19. This and the associated lockdowns, particularly given the project ran over the border of Victoria and South Australia, proved a significant hurdle. Multiple changes in project management and changes in producer participation were also problematic. Initially designed as a three-year project, we were able to extend the project for an additional two years to ensure an adequate volume of quality measurements were obtained for cost benefit analysis and comparison. Regrettably, both the LC and WD experienced an extremely low rainfall year for 2024 which impacted data collection through both changes in management (e.g. early sale of weaners) and producer duress. Alas, with conditions in agriculture always changing it is perhaps a benefit to have results spanning across different seasonal conditions.

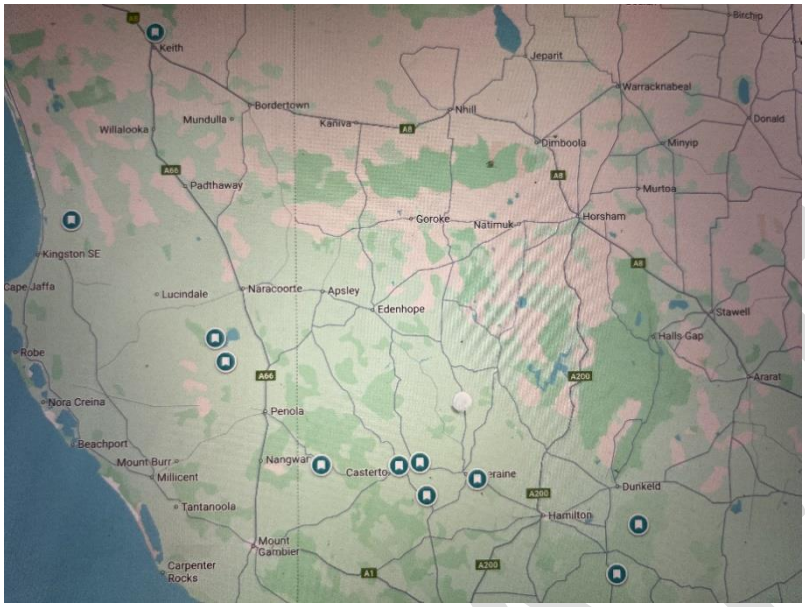
3.1.1 Selection of Core Producer Demonstration Sites

Producer Demonstration Sites were established across the LC and WD (Bordertown, Bool Lagoon, Beachport, Taratap, Coleraine, Penshurst, Woodhouse, and Henty). Where possible, sites were to consist of a ‘control’ and a ‘trial’ method of post-weaning management with at least 50 animals in each group. Where it was not possible or practical to establish a control and a trial group, a trial

group was established in each year with comparisons made to that farm's baseline data from years 1 and 2, or cohorts of steers and heifers will be utilised as trial and control groups.

Whilst sites did change throughout the course of the project, 11 businesses were retained for data collection. Locations of Core Producers are shown in Figure 1.

Figure 1: Locations of Core Producers



3.1.2 Data collection

The following activities were expected to be undertaken by core producers:

- Record historical post-weaning strategies in order to establish baseline data.
- Establish post-weaning strategies for each season, including a control mob consisting of that property's typical post weaning strategy to compare directly to a trial post-weaning strategy where possible.
    a. Collect liveweights at a minimum of 3 points in years 3, 4 and 5 (weaning or up to 1-week post-weaning, halfway point, 6 weeks post autumn break) to assess and record weight gain resulting from the different management strategies.
    b. Assess feed value and feed availability at 3 points in years 3, 4 and 5 (weaning or up to 1-week post-weaning, halfway point, 6 weeks post-autumn break) to assess and record the nutritive values resulting from the different management strategies.
    c. Record resultant conception rate at pregnancy testing for heifers in years 3, 4 and 5.
    d. Record resultant days from weaning until sale, carcass/animal value at sale for steers and cull heifers in years 3, 4 and 5.

Producers were provided with templates for data collection to ensure all necessary data was provided for analysis (see appendix 10). Despite this, data collection emerged as a major challenge throughout the project. Many producers were unable to provide the full set of committed data, resulting in significant gaps during analysis. Contributing factors included difficult seasonal conditions, project management changes that may have contributed to confusion amongst producers, and the general time constraints faced by producers. To address this in future projects, it will be important to allocate budget for dedicated project staff to collect data directly.

3.2 Economic analysis

Economic analysis was undertaken using a gross margin analysis examining the time frame from weaning to green feed on the ground and considering weight gain of weaners and cost of feed. As some farms purchased in hay or silage whilst others made their own, it was decided to use standard figure for feed pricing where an exact figure could not be provided. This will also offer some allowance for opportunity cost. Similarly, an industry standard figure was used for livestock sale price each year, allowing for more transparent comparison of data.

It was difficult to compare between farms due to copious variables including but not limited to differences in management. This was unable to be compensated for in data analysis owing to large gaps in the data made available. Consequently, the main benefit has come from comparison on individual farms across different seasons.

3.3 Extension and communication

The following extension and communication activities and outputs to engage the broader farming community were developed for the weaning strategies for beef herds PDS project:

- Discussion groups
    - One discussion group was established for all core producers to give all participants the opportunity to increase their skill levels and knowledge base to ensure they have the confidence and skills necessary to try different post weaning management strategies.
    - Discussion group sessions were delivered both online or in person, depending on movement and gathering restrictions as stipulated by state and federal governments during the time the project was running.
- Technical sessions
    - Technical sessions were run for core producers, observer producers and the broader industry.
    - One technical session was conducted in years 3, 4 and 5 of the project, each designed to increase participants' knowledge on topics including best practice yard weaning and animal handling, profit drivers and business management and bull selection and management.
- Annual field day
    - Field days for core producers, observer producers and the broader industry were conducted in years 1 and 2 of the project to showcase the aims and findings of the project.
- Podcast
    - A Prosperous Farmer podcast episode was produced, promoting the outcomes of the project and telling the story of Haydn Lines and his involvement as a core producer.
- Case studies
    - 3 case studies were produced on completion of the project, and distributed via MFMG's fortnightly newsletter, social media channels and on the MFMG website as well as through MLA networks.

3.4 Monitoring and evaluation

MLA's monitoring, evaluation and reporting (MER) guidelines were followed throughout this project and can be viewed in detail in Appendix 11.

4. Results

4.1 Demonstration site results

Initially, all businesses involved were to have a control and trial group of heifers and steers to explore and compare different post weaning strategies. It quickly became apparent however that it was unrealistic to expect businesses to achieve this for the duration of the project. Consequently, the model was changed to compare weaning strategies between farms and on the same farms between seasons.

Data collection on producer demonstration sites was more challenging than initially expected. The original aim was for producers to collect individual animal measurements, along with pasture feed on offer and quality and volume and quality of supplementary feed provided. It soon became apparent that whilst all cattle have mandatory eID tags, not all producers in the group were familiar with how to collect and record data or download recorded data to send through in a useable format. Time and labour constraints were also an issue on some sites. Furthermore, a spread of calving times between producers meant there were logistical issues trying to coordinate and set reminders and deadlines for data collection. This was compounded by the differences in seasonal conditions between locations of properties meaning pasture quality would need to be measured at different times, as well as different weaning strategies leading to different measurements required; for example, irrigated pasture or summer crop verses dry pasture and supplementary feed. Most producers collected some of the data required, however having complete data sets and in a useable format was not achieved on all properties particularly in the first two years of the project. This was the main catalyst for alterations made to the original format of the project.

Table 1 provides an overview of each of the businesses included in the project as core producers.

Table 1: Core producer business overview

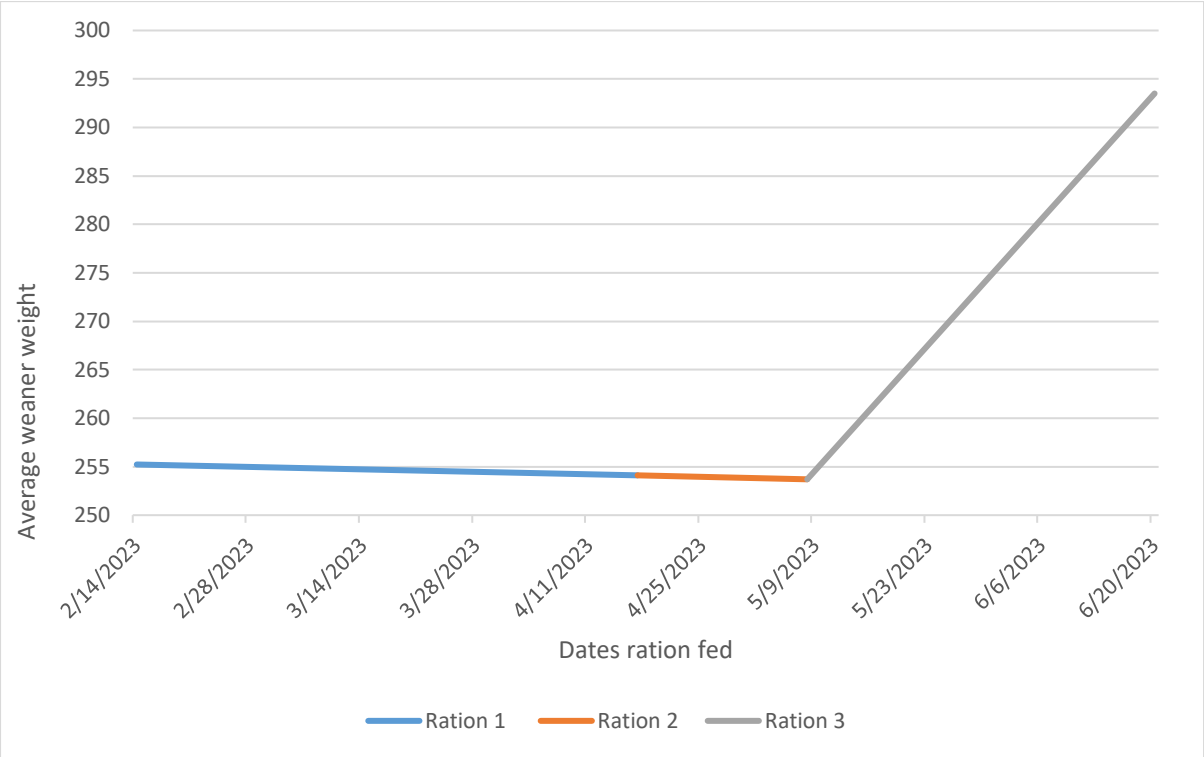
Farm	Location	Property size (Ha)	Number of beef breeders	Calving dates	Typical weaning dates	Historical weaning strategy	Revised weaning strategy
Farm 1	Bool Lagoon	3420	850	Autumn (mid Mar)	Nov	Yard wean for 4-5 days, walk through 2x day then walk through crush and onto pasture	Increased focus on measuring feed quality and availability to ensure nutritional requirements of weaners are met
Farm 2	Moyhall	870	260	Autumn (Mar/Apr)	Nov/Jan	Yard wean on silage + Anapro, then lot feed or summer crop	
Farm 3	Taratap	1850	220	Autumn and Spring (Mar + Sep)	Early Dec	Fenceline wean on silage, then lucerne rotation	
Farm 4	Keith	6394	840	Autumn	Sep/Oct	Yard wean	Increased focus on handling during weaning to minimise stress and time off feed, improve quality of feed available to weaners
Farm 5	Coleraine	930	550	Spring	Mar/Apr	Yard wean for 7-10 days	Decrease time in yards at weaning with improved animal handling, increased focus on nutrition available to weaners as well as flexibility around weaning strategies
Farm 6	Woodhouse	260	170	Spring	Feb - Apr	Fenceline weaning, hay if not sufficient paddock feed	Experimenting with different options including pellets and lupins
Farm 7	Penshurst	1300	340	Autumn	Feb/Mar	Yard wean overnight, small paddock with hay for 1 week	Yard wean for 3 days with daily handling, trialling different post weaning strategies and maintaining

							flexibility depending on seasonal conditions and supplementary feed available
Farm 8	Casterton	1000	800	Spring	May	Yard wean followed by paddock feed supplemented with hay	Focusing on higher quality hay and silage as well as trialling some specialty feeds eg lupins
Farm 9	Lake Mundi	2400	850	Spring	Feb/Mar	Yard wean followed by paddock feed supplemented with hay or irrigated pasture	Increased focus on feed test and monitoring weaner weights
Farm 10	Muntham	2200	1250	Autumn & spring	Mid Oct & Jan/Feb	Mix of yard and paddock	Moving to more spring calvers with goal of full spring calving in a few years. Also planning to move to a full yard weaning setup once infrastructure is available to handle it.
Farm 11	Henty	1400	550	Spring	Mar-May	Yard wean, hay or silage & pellets	Looking at earlier weaning and focusing more on requirements to gain more weight over winter

Full data sets for each farm can be viewed in Appendix 1 - 7.

The figure (Fig 2) below shows weight loss of weaners through the autumn period whilst on dry pasture and poor quality hay, followed by a period of increasing growth through utilisation of pasture under a pivot.

Figure 2: Weaner growth rates on Farm 9 in 2023

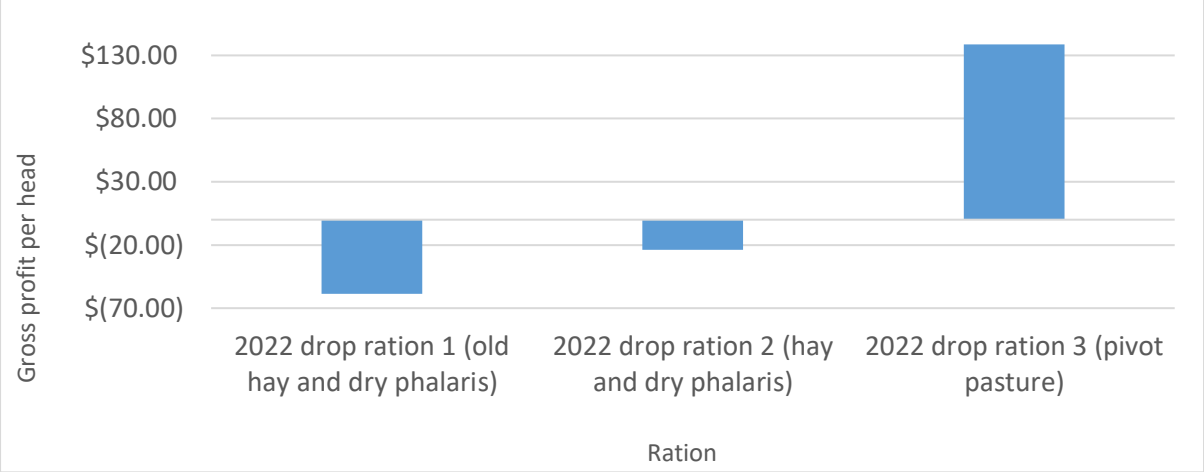


This pattern is all too common for beef weaners in southern Australia and highlights the need to address the autumn feed gap. Without adequate nutritional support during this period, growth rates can stagnate or decline as demonstrated, leading to both economic losses and compromised herd development.

In this PDS, weaners fed on hay and dry phalaris (rations 1 and 2) not only failed to gain weight but lost -1.12 kg and -0.38 kg, respectively. This demonstrates that relying on poor-quality forage without supplementation can be detrimental to animal performance.

The following figure depicts the gross margins for each of the periods where the weaners were fed different rations. These rations were fed *consecutively* i.e. one time period following another rather than *concurrently*.

Figure 3: Gross profit per head of rations fed consecutively in 2023 on Farm 9



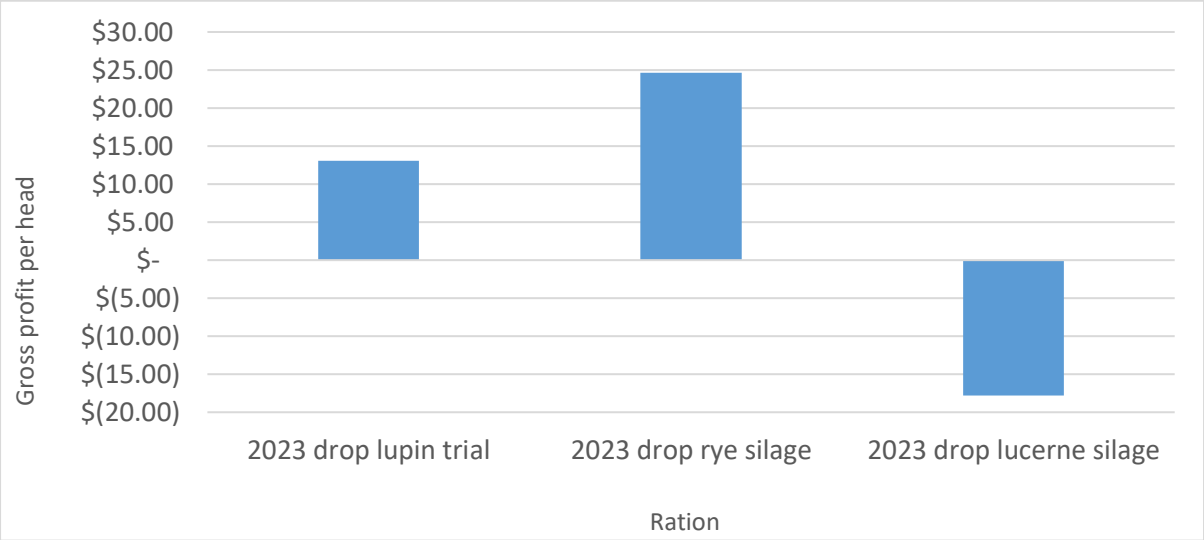
This indicates that while the weaners were stagnating in weight, they also recorded negative gross profits (-$58.68 and -$24.01 per head), reinforcing the financial consequences of inadequate nutrition.

Pasture grown under a centre pivot (ration 3) demonstrated the effectiveness of filling the feed gap, leading to a positive ADG of 0.92 kg/day and a gross profit of $138.65 per head. The low cost of the pasture further amplified the profitability, effectively demonstrating that lower ration costs are associated with higher gross margins if growth rates are maintained.

Not all producers have access to consistent irrigation and seasonal variability remains unavoidable. This underscores the need for flexible feed management, ensuring that during periods of limited pasture availability or declining quality, alternative supplementation is integrated to prevent setbacks and sustain profitability. Through proactive planning, regular feed testing and adaptable ration strategies, producers can effectively navigate the autumn feed gap, optimizing growth rates, improving economic returns and maintaining herd performance amid seasonal fluctuations.

Calves born in 2023 and weaned in autumn 2024 faced particularly challenging seasonal conditions. On Farm 8, to assess performance under varying nutritional strategies, the weaners were divided into two groups with each receiving a different ration: lupins, or silage (rye silage followed by lucerne silage). The following figure outlines the financial outcomes associated with each feeding program.

Figure 4: Gross profit per head of rations fed to 2023 drop weaners on Farm 8



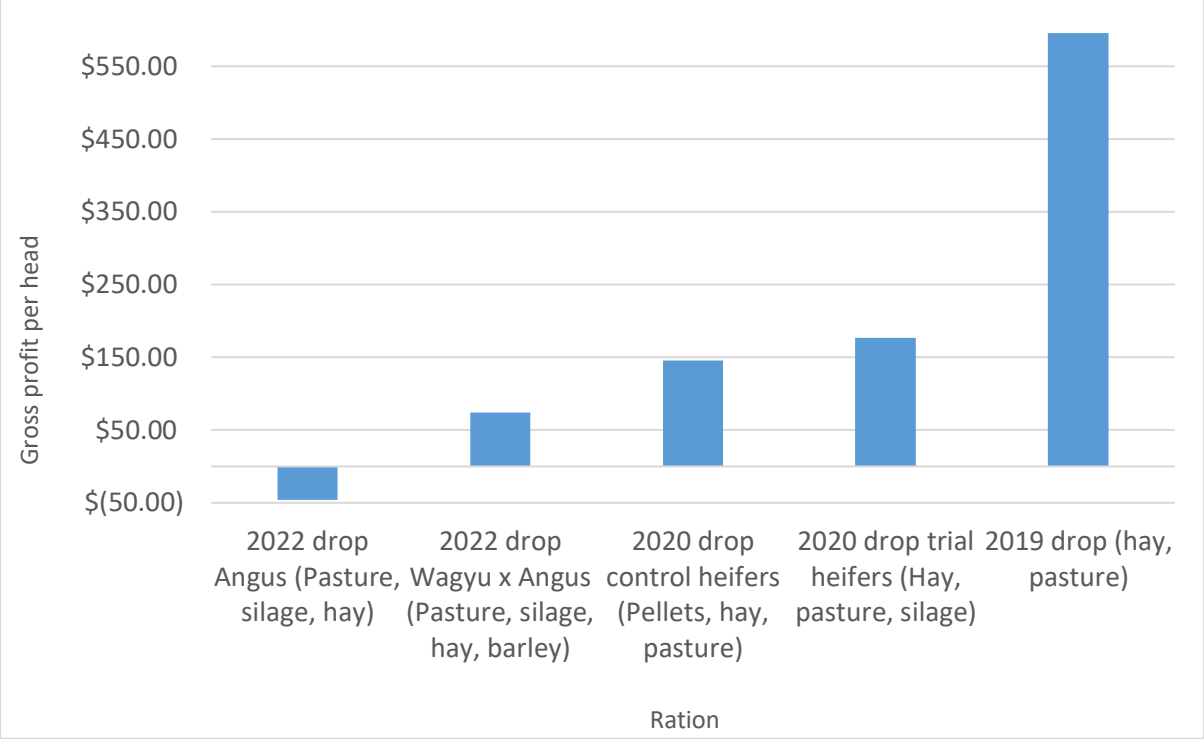
The financial performance of the three rations varied significantly due to differences in intake, feed conversion efficiency, and overall cost-effectiveness. Rye silage delivered the highest return at $25.00 per head, attributed to its combination of higher average daily gain (ADG) and lower feeding costs. However, once the rye silage was depleted, the animals transitioned to lucerne silage, which resulted in a $17.81 loss per head. Despite being the lowest-cost ration per tonne, the lucerne silage's poor nutritional quality led to zero weight gain, underscoring the critical role of feed testing and strategic ration selection in optimizing weaner performance. Additionally, the presence of grass seeds in the lucerne silage contributed to a high incidence of pink eye within the herd, further complicating management outcomes.

Lupins, despite their extended feeding period, generated a lower return of $13.02 per head due to the limited feeding rate, which failed to meet the nutritional requirements necessary for higher growth rates. Additionally, rumen adaptation may have delayed the full benefits, as cattle typically require a couple of weeks to adjust. If not properly balanced with fibre, lupin intake can be inconsistent, further affecting feed efficiency and weight gain.

Gross margins were calculated based solely on livestock value and feed costs, excluding other operational expenses. Additionally, the duration of feeding varied across lupins, rye silage, and lucerne silage, which necessitates caution when making direct comparisons, as differences in feeding periods may influence overall performance outcomes.

The following figure shows gross margins for weaner cattle on Farm 5 in 2022, 2020 and 2019.

Figure 5: Gross profit per head for weaner cattle on Farm 5 in 2022, 2020 and 2019



In 2020, the WD of Victoria experienced rainfall around 27% above the long-term average according to the Bureau of Meteorology, making it the wettest autumn since 1989. With this translating to improved pasture growth and extended feed availability compared to more average or drier years, it is therefore unsurprising to see a strong financial return for the 2019 drop weaners using a straightforward hay and pasture system. While this demonstrates the potential for low-input systems to outperform more complex and costly rations, seasonal conditions remain beyond our control and such outcomes aren't always achievable.

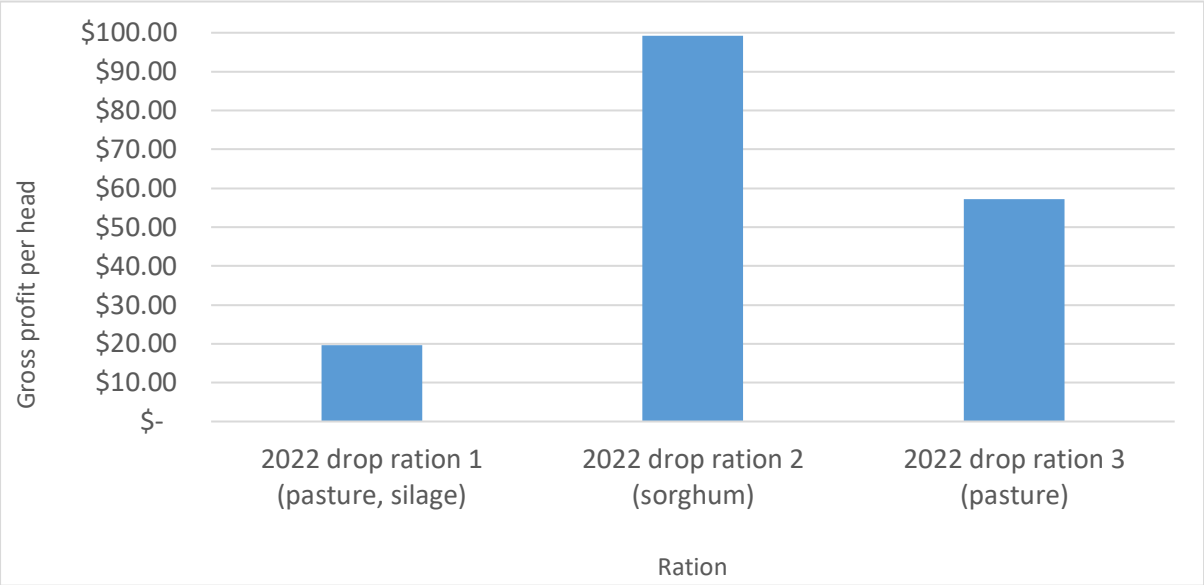
For the 2022 drop weaners, the control group run on pasture, silage and hay were significantly outperformed by the trial group who also had access to barley. This can be attributed to the improved growth rates in the trial group (0.51kg/day) compared to the control group (0.04kg/day). Profitability may have been further enhanced if barley had been fed at a higher rate as growth potential remained, despite there being an associated increase in input costs. It is also important to acknowledge genetic differences between the groups, with Wagyu × Angus crosses in the trial group and straight Angus in the control group.

For the 2020 drop weaners, the group fed pellets, hay and pasture were outperformed by the group fed hay, pasture and silage, however the difference in profitability between the 2 groups was not significant. Neither group achieved growth rates above 0.5kg/day (0.39kg/day for the group on silage, 0.35kg/day for the group on pellets), suggesting that the nutritional requirements of both were not fully met. This highlights the importance of providing sufficient supplementary feed to support adequate growth rates and maximise profitability.

On Farm 10, data from the 2022 drop weaners reflects rations that were fed consecutively rather than concurrently. As a result, there is substantial seasonal variation in pasture quality that cannot be fully accounted for when calculating gross margins. Nevertheless, the data highlights the

potential of low-cost, pasture-based systems to deliver strong profitability, provided they can meet the nutritional demands of growing weaners.

Figure 6: Gross profit per head for rations fed consecutively to 2022 drop weaners on Farm 10



The lower profitability of Ration 1 (dry pasture and silage) likely stems from both the poor quality of pasture available during this period and an insufficient volume of silage offered to support optimal growth.

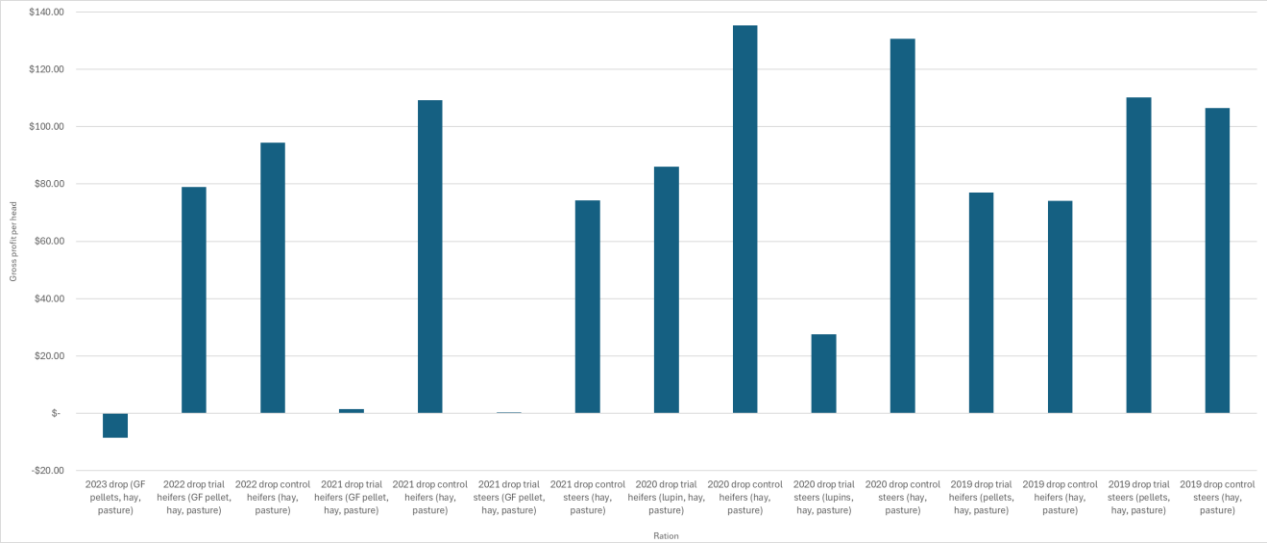
Ration 2 (sorghum) emerged as the most profitable. Interestingly, weaners did not exhibit higher growth rates during this time, but the extended duration of access to sorghum and its comparatively low cost contributed to strong margins, significantly outperforming Ration 1 in terms of input efficiency.

Ration 3 (pasture only) delivered moderate profitability despite being associated with the lowest overall cost. Offered later in the year (May/June 2023), the pasture at this stage was of better nutritional value relative to that in Ration 1, supporting decent growth without the expense of added silage.

Again, profitability across all three rations could have been further improved, as in no instance were nutritional requirements met at a level that would maximise weaner growth potential. This underscores the value of feed testing and proactive ration planning to better align nutrient supply with animal demand, boosting both performance outcomes and the overall profitability of the business.

The following figure gives an overview of data collected from farm 6, a PDS located near Woodhouse, Victoria.

Figure 7: Gross profit per head for 2019 – 2023 drop weaners on Farm 6



The results of the feeding trials at this site have provided valuable insights into how balanced supplementation can play a critical role in bridging seasonal feed gaps.

Results indicate that low-cost pasture-based systems can deliver strong economic returns, provided nutritional requirements are met. In contrast, rations like grain free pellets and lupins, while beneficial in some contexts, must justify their cost through significantly improved feed efficiency and weight gains.

Control groups relying on hay and pasture consistently demonstrated higher profitability, particularly in the 2021 and 2022 control heifers. This highlights the importance of strategic pasture management to extend feed availability into autumn, reducing dependence on high-cost supplements. However, seasonal variations remain unavoidable. Years with favourable conditions in the Western District supported stronger profitability for control groups, whereas prolonged low rainfall in 2024 exacerbated the autumn feed gap, leaving virtually no pasture available. Under these conditions, alternative supplementary feeding not only became necessary but also proved more profitable, as well-balanced rations helped maintain growth rates and optimize feed conversion efficiency.

Delayed rumen adaptation to different forage types may contribute to reduced growth rates during the measured period in some cases. This was likely observed in the lupin trials conducted in 2020, where slower adaptation may have played a role in the lower profitability of the trial groups compared to the control, alongside seasonal conditions. Implementing strategies to ensure a smooth transition between forage types can help minimise setbacks, improve feed conversion rates, and ultimately enhance profitability.

If the inclusion rate of high-quality feeds like lupins or grain is too low, as was the case in several of the trials on the PDS sites, the overall diet composition may not improve enough to significantly impact growth rates compared to a control group. This reinforces the need for careful ration formulation to ensure that supplementation provides meaningful benefits rather than just incremental changes.

Weaners showing higher ADG (above 0.50 kg/day) achieved stronger financial returns, highlighting the importance of monitoring weight gain trends and adjusting rations accordingly. Maintaining flexibility in post-weaning management is crucial for ensuring profitability, especially when seasonal

conditions dictate the need for higher-cost supplements. Strategic use of these feeds during challenging periods, such as extended autumn feed gaps, can help sustain growth rates and prevent setbacks that would otherwise impact overall productivity. By integrating cost-effective baseline feeding with the ability to pivot toward higher quality supplements, when necessary, producers can optimize feed conversion efficiency while ensuring cattle reach target weights despite seasonal variability.

4.2 Economic analysis

Comparing the data collected in this project presented challenges due to variations in weaner feeding durations and gaps in data collection. While the findings provide valuable insights, they do not yield clear-cut conclusions but instead highlight broader trends that can inform future management decisions.

Although some results exhibited outliers and certain discrepancies arose due to gaps in data collection, the following key messages remained consistent across most gross margin summaries;

- Ensuring weaners have adequate protein and energy intake particularly during low rainfall years is crucial for optimising weight gain and overall profitability. Higher rates of ADG (above 0.5kg/day) were associated with stronger financial returns.
- Lower ration costs were associated with higher gross margins; however, growth rates played a more important role overall.
- Where producers could provide a ration to their weaners at lower costs whilst maintaining a higher growth rate, the gross margins tend to be higher.
- ADG varies year-on-year and between mobs based on the quality of the ration provided.
- Gross margins tend to be higher where weight gain is higher, even where ration costs are also higher.
- While pasture and hay-based systems proved cost-effective, additional supplements like lupins or pellets are necessary in some seasons to prevent growth setbacks. Flexibility and foresight are important to optimise feeding strategies during this period.
- Optimising feeding strategies particularly when adapting the rumen to a different forage type and ensuring a balanced ration are important to ensure high-cost feeds can justify their expense with improved feed conversion efficiency.
- Poor quality rations resulted in poor weight gain despite cost of ration, underscoring the need for regular feed testing and ration selection.

4.3 Extension and communication

4.3.1 Discussion Groups

Originally, two discussion groups were established for this project; one involving all core producers from the LC and one involving all producers from the WD. It was soon determined that larger group size was more conducive to effective discussion among producers as well as allowing increased involvement of industry professionals from a budgeting perspective and consequently a single discussion group was formed including all core producers.

The discussion group met 17 times over the course of the project. The majority were face to face visits but there were some zoom meetings due to COVID-19 restrictions. The group visited nine different host farms from within the group. At each session, producers practiced pasture assessment including Feed On Offer (FOO) measurements and discussed the nutritional requirements of the weaners at the time as well as plans for different post weaning strategies. Updates on the weaner

PDS project were given at the 2020 and 2021 MFMG field days, and technical sessions were held in 2022, 2023 and 2024. Table 2 denotes the host farm visits and technical sessions held over the course of the project.

Table 2 – Discussion groups and technical sessions

Date	Location	Topic	Industry Experts	Attendees
9 December 2019	Hamilton, VIC	Introduction to PDS project	Meg Bell, MFMG CEO	9 WD core producers
September 2020	Naracoorte, SA	MFMG Annual Field Day – project overview, results to date, post weaning management strategies		40 core and observer producers
1 March 2021	Coleraine, VIC	Casual catch up, project update, post weaning management strategies	Jo Ward, livestock veterinarian	6 core producers
16 June 2021	Bool Lagoon, SA	Project overview, results to date, post weaning management strategies, pasture walk, silage bales vs pit.	Meg Bell, livestock nutrition advisor and consultant Jo Ward, livestock veterinarian	10 core producers
19 August 2021	Naracoorte, SA	MFMG Annual Field Day - project overview, results to date, post weaning management strategies		40 core and observer producers
1 September 2021	Remote – Zoom meeting	Data update	Jo Ward, livestock veterinarian	3 core producers
27 November 2021	Coleraine, VIC	Project overview, results to date, post-weaning management strategies, pasture walk, the basics of utilising summer crops	Jess Revell, livestock nutrition advisor Jo Ward, livestock veterinarian	3 core producers
2 March 2022	Woodhouse, VIC	Project overview, results to date, post-weaning management strategies, pasture walk, pasture options for filling the autumn feed gap	Elizabeth Kennedy, agronomist Meg Bell, livestock nutrition advisor and consultant Jo Ward, livestock veterinarian	10 core producers
28 March 2022	Beachport, SA	Project overview, results to date, post-weaning management strategies, pasture walk, nutritional requirements of weaners, deep ripping through the limestone shelf and effects on pasture growth	Meg Bell, livestock nutrition advisor and consultant Jo Ward, livestock veterinarian	10 core producers
21 June 2022	Casterton, VIC	Project overview, results to date, post-weaning management strategies, pasture walk, common weaner health issues	Meg Bell, livestock nutrition advisor and consultant Jo Ward, livestock veterinarian	7 core producers

27 September 2022	Keith, SA	Project overview, results to date, post-weaning management strategies, pasture walk, yard weaning and livestock handling	Lachy Strohfeldt, livestock veterinarian and consultant Meg Bell, livestock nutrition advisor and consultant Indi Lamond, intern livestock consultant Jo Ward, livestock veterinarian	24 core and observer producers
17 April 2023	Casterton, VIC	Project overview, results to date, post-weaning management strategies, pasture walk, nutritional requirements of weaners and interpreting feed test results	Jess Revell, livestock nutrition advisor Indi Lamond, intern livestock consultant Jo Ward, livestock veterinarian	6 core producers
6 July 2023	Lake Mundi, VIC	Project overview, results to date, post-weaning management strategies, pasture walk, pasture and fertiliser options to help fill the autumn feed gap	Elizabeth Kennedy, agronomist Indi Lamond, intern livestock consultant Jo Ward, livestock veterinarian	8 core producers
7 September 2023	Naracoorte, SA	Project overview, results to date, post-weaning management strategies. Beefing up your bottom line - business management including profit drivers, partial budgeting etc.	Elke Hocking, livestock consultant Sean McGrath, livestock veterinarian John Francis, rural business advisor Mark Inglis, Thomas Foods International representative Jo Ward, livestock veterinarian Meg Bell, livestock nutrition advisor and consultant Indi Lamond, intern livestock consultant	46 core and observer producers
30 November 2023	Casterton, VIC	Project overview, results to date, post-weaning management strategies, data update	Indi Lamond, intern livestock consultant Jo Ward, livestock veterinarian	10 core producers

29 January 2024	Bool Lagoon, SA	Project overview, results to date, post-weaning management strategies, pasture walk, selection of bulls to enhance genetic gain and bull health.	Owen McClure, livestock veterinarian Meg Bell, livestock nutrition advisor and consultant Indi Lamond, intern livestock consultant	22 core and observer producers
26 September 2024	Penshurst, VIC	Project overview, results to date, post-weaning management strategies, pasture walk, intricacies and options of early weaning	Lisa Dickinson, management sales and nutrition (Reid Stockfeeds) Reid Stockfeeds livestock nutrition advisor Meg Bell, livestock nutrition advisor and consultant Mark Fraser, farmer trialling early weaning and pellet feeding Jo Ward, livestock veterinarian	15 core and observer producers

4.3.2 Newsletter articles

There was a newsletter article published in the MFMG seasonal newsletter in each year of the project except year four:

- Appendix 12: 2021 summer newsletter article 'Cost effective strategies to put more weight on weaners before the autumn break'
- Appendix 13: 2022 summer newsletter article 'Handling weaners for better productivity'
- Appendix 14: 2023 winter newsletter article 'Making more from your weaners'
- Appendix 15: 2025 winter newsletter article 'Post weaning management strategies for beef herds'

4.3.3 Case studies

Three case studies have been produced based on results from this project on three different producer demonstration sites:

- Appendix 16: Paul & Megan Mould
- Appendix 17: James Cameron
- Appendix 18: Tim & Stacey Morton

4.3.4 Podcast, video and social media updates

An episode of The Prosperous Farmer podcast (https://bit.ly/TPF_S7_Ep4_Ward_Lines) has been produced, interviewing Keith farmer Haydn Lines to discuss his involvement in the project and the benefits being involved have contributed to his business.

Social media updates have been made throughout the course of the project, including:

- New episode of MFMG's podcast The Prosperous Farmer now available!
- MFMG's Western District weaning project discussion group was thrilled to get together in person for the first time since December on Wednesday (even if we had to wear masks!).
- Beefing up your bottom line event
- Cattle research for the South East
- This weeks Post Weaning Management Strategies for Cattle Herds examined
- Post Weaning Management Strategies for Cattle Herds
- A great article on the weaning project MFMG is involved in.

Website project page - https://www.mackillopgroup.com.au/blog/post-weaning-management-strategies-for-beef-herds

4.4 Monitoring and evaluation

4.4.1 Knowledge, attitude, skills and aspiration (KASA) analysis

While pre-project engagement was strong, post-project data collection was limited, with only 7 of 11 surveys returned despite extensive follow-up efforts (appendix 8 and 9). Nonetheless, valuable insights into practice change and adoption were gained through limited survey results, group discussions, individual conversations, and observational data:

- Knowledge
  - Core producers demonstrated a clearer understanding of post-weaning growth pathways, feed requirements, and cost-benefit considerations of various strategies.
- Attitude
  - There was a noticeable shift in mindset, with producers expressing greater confidence in evaluating and adjusting their weaning practices.
- Skills

  - Participants improved their ability to interpret growth data and align feeding strategies with seasonal conditions. In some instances, producer confidence in assessing FOO declined over the course of the project. This likely reflects an initial overestimation of their capabilities and underscores the principle that unrecognized knowledge gaps can limit effective decision making.
  - Similarly, while overall confidence in interpreting feed test results increased, there was a concurrent recognition of the complexity involved. The project was instrumental in revealing previously unrecognised knowledge gaps, reinforcing the notion that "you don't know what you don't know." This underscored the importance of engaging with qualified professionals to ensure data is accurately interpreted and utilised effectively.

- Aspirations
  - Many producers expressed a commitment to ongoing refinement of their post-weaning management, aiming for improved animal welfare and performance as well as enterprise profitability.

Practice Change and Adoption Rates

- Core Producers:
  - All core producers engaged in discussions around post-weaning strategies and identified areas for improvement.
  - 86% reported adopting at least one measurable cost-beneficial change, such as improved feed testing, targeted supplementation, or revised weaning timelines.
  - Barriers to broader data collection included time constraints, unfamiliarity with digital tools, and seasonal workload pressures. This was compounded by prolonged dry conditions, which substantially increased operational demands and contributed to elevated stress levels among producers consequently pushing project work further down the priority list for many.
- Observer Producers:
  - Among those who attended field days, approximately 50% indicated they had implemented or were planning to implement changes to their post-weaning management.
  - Common changes included flexibility around timing of weaning, improved pasture allocation, and increased use of feed testing.
  - Non-adoption was typically due to lack of time, limited labour, or uncertainty about how to apply the strategies to their specific enterprise.

Despite limitations in formal data collection, the project clearly influenced both mindset and practice. Producers reported improved weaner performance and more strategic alignment of feed resources with animal needs. There was strong uptake of feed testing and feed-on-offer assessments as routine tools, and the project fostered a culture of critical evaluation, with producers demonstrating greater confidence in making data-informed decisions.

4.4.2 Evaluations from technical sessions

MFMG Field Day 2021

- 16 evaluation surveys were returned (appendix 19).
- An average rating of 4/5 was given for overall value of the field day, and an average rating of 4/5 was given for value from the presentation on the post weaning management project.
- 100% agree or somewhat agree that the day increased their awareness, knowledge or skills, and that they were likely to make a practice change because of attending.

Technical Session September 2023: 'Beefing up your bottom line'

- 46 attendees, including core producers, producers from the wider industry, consultants, veterinarians, bank staff and meat processors.
- 30 evaluation surveys were returned (appendix 20) with an average rating of 4.3/5 given for overall value.
- 100% agreed or strongly agreed that the content was relevant in helping to manage their beef enterprise and 93% agreed or strongly agreed that they were likely to make a practice change because of attending.

Technical Session January 2024: 'Bull health and selection to enhance genetic gain'

- 16 evaluation surveys were returned (appendix 21) with an average rating of 7.2/10 given for overall value.
- 94% reported learning something because of attending.

4.4.3 PDS program feedback

The Producer Demonstration Site (PDS) program received strong endorsement from participants, with survey results indicating a high level of satisfaction and perceived value. On average, participants rated their satisfaction at 8.29 out of 10, and the value of the program at 8.42 out of 10. Notably, 86% of respondents stated they would recommend the PDS program to other producers, highlighting its positive impact and relevance to their operations.

Participants shared a range of constructive insights and reflections on their experience with the PDS:

Program Delivery & Structure

- "It was a great course with lots of information provided to us over time. The sessions were a little ad hoc and would have benefited from a structured approach of having a preplanned calendar of the dates and target dates to have data ready for the next meeting. It was well presented by knowledgeable specialists on the topics for discussion."

Application of Learnings

- "In the last season, as we couldn't hit target weight, we continued to destock heifers that wouldn't make 350kg at mating, which is thanks to the project learnings."

Data Collection & Templates

- "It seems it is hard to get information from the group participants. More work on templates for easy filling might help get the information quicker and consistently. Templates need to be varied for the varied enterprise structures."

Networking & Awareness

- "Great to meet other farmers from different areas and groups, I was made much more aware of the requirements for joining, consequently paying more attention to feed requirements and weights."

Economic Analysis Tools

- "We could have done with a fixed matrix on calculating the cost of producing grass and grazing forage. Likewise, the cost of producing hay/silage/etc. Too many producers have no idea what their grass costs."

Challenges & Benefits

- "It was a good program. Drought conditions hurt my participation and data collection. It was great to see different operations and how they manage things."

5. Conclusion

This project has significantly improved the participating producers' awareness and ability to take appropriate measurements and make informed decisions when it comes to the management of their beef weaners. The networking within this project between research, industry and advisors has demonstrated to participants the value of ongoing animal health, nutrition and agronomy advice. Perhaps the most significant benefit to participating producers was the peer-to-peer learning, with the facilitation of abundant discussion as well as the opportunity to inspect numerous different properties and farm businesses. Not only does this support learning opportunity, but it provides important networking and motivation in an otherwise often solitary work environment.

You don't know what you don't measure, and this project has highlighted that the difference between estimation and measurements can be surprising; be that feed test results or animal weights or otherwise. Furthermore, there needs to be at least a 30% change in feed availability before it can be appreciated visually. Even with excellent estimation skills, this is a significant amount to be lagging. Not only that, measurements will give a baseline and consequently if changes are being considered, the cost benefit can be quantified and thus the most viable long-term strategies for your business selected.

As expected, when feed provided meets weaner requirements for growth, gross margin is higher than when weaners are growing at a slow rate. They will also eat less feed overall because they are growing quicker and can consequently be turned off in less time. The most cost effectively you can meet growth requirements of weaners, the better the gross margin (from weaning to green feed on the ground) will be (e.g. Growing a summer crop as opposed to purchasing in pellets).

Management of calves at weaning and education of weaners can set those animals up for a lifetime of success. Weaning is a stressful time in an animal's life and, whilst difficult to quantify, minimising this stress can have significant health, welfare and production advantages. Weaning is also a critical learning time for young cattle. Not only can they be handled to ensure they are more familiar with stock yards and people, educating weaned calves in the yards can create stronger social bonds and

interact better as a mob, creating a more adaptable animal. Less stressed and more adaptable animals have a reduced risk of dark cutting meat, and additionally, a more robust immune system able to withstand health challenges. This not only includes reduced incidence of disease such as pink eye and pneumonia, but in a lot of cases decreased frequency and severity of intestinal worm burdens. Consequently, yard weaned cattle that are handled and educated at weaning are likely to be more sought after for finishing than cattle with unproven backgrounds. Every handling influences the next, and the best place to start the education for calm, happy, productive cattle is at weaning time.

5.1 Key Findings

- When feed provided meets weaner requirements for growth and in the most cost-effective form, gross margin is optimised.
- Whilst difficult to quantify, the animal health benefits of meeting nutritional requirements of weaners are significant.
- Collecting data and reflecting on previous years has shown to give considerable advantage in decision making.
- Peer-to-peer learning offers a key strength in farm businesses.
- Weaning practices can set animals up for improved lifetime success.

5.2 Benefits to industry

This project has provided the opportunity for participating producers to investigate and implement the best possible weaning management strategies. Numerous group discussion days improved knowledge through both expert presenters from livestock veterinarians and consultants and ruminant nutritionists through to rural business advisors and peer to peer learning. At each gathering there was the opportunity to improve practical skills in reading and utilising feed test results as well as performing FOO estimations. These days had the added benefit of getting producers off farm and networking with colleagues, which is so important in an industry where work is so often of a solitary nature.

The post weaning management strategies for beef herds PDS has provided the wider beef industry with several case studies documenting different learnings of producers involved in the project, numerous newsletter articles covering different areas of interest as investigated during the project, as well as a podcast episode. This information, along with the gross margins from multiple different post weaning management strategies utilised by producers throughout the course of this project, will allow beef businesses to analyse opportunities that will suit their unique enterprise and, importantly, monitor results and adapt management on an ongoing basis.

Originally it was planned to design an interactive tool for producers to use to perform their own cost benefit analysis of their post weaning management strategies or use the MLA cost of production calculator tool. The MLA cost of production calculator tool did not provide enough specificity for the precise period that was being examined in this project, rather focuses on an annual basis and a whole farm level. Furthermore, the spreadsheets that were utilised to analyse data collected over the course of this project have proved to have too many complexities to be useful as a tool to be provided to the wider industry. To get useable outputs, assumptions had to be made in various

aspects requiring technical knowledge of ruminant nutrition, ration formulation and industry averages. This presents numerous opportunities for error and, if implemented without the necessary expertise, could ultimately be more detrimental than beneficial to the industry.

One of the greatest challenges spanning the duration of this project was the collection of useable data from all participating properties. The need for allowances in budgeting for project staff to be on site for collection of data was highlighted and would both minimise gaps in data as well as streamline the ability to produce cost benefit analysis of high accuracy in a short time frame. Furthermore, the multiple staffing changes occurring after this project was finalised has highlighted the need for project review in such cases. This would allow changes to be made based on the skill set of incoming project team members, as it is not always possible to bring people on board with the same experience or expertise at the time required.

6. Appendices

Appendix 10: Data recording template

https://www.mla.com.au/globalassets/mla-corporate/extensions-training-and-tools/documents/producer-demonstration-site/pds-search-tool---project-resources/l.pds.1908-appendix-10-template-data-recording.xlsx

Appendix 11: MER

MER Plan: Producer Demonstration Sites
Project name: Post-weaning management strategies for cattle herds Project NO. L.PDS.1908

Date: June 2025

Evaluation level[1]	Project Performance Measures	Evaluation Methods	Final Report June 2025
Inputs – What did we do? *Describe the planned and expected inputs involved in your project*, including *funds, resources, development & projects structures*	• Project team meetings • Establish 3 Focus Demonstration Farms (FDF), 1 in the Upper South East (USE), 1 in the Lower South East (LSE) and 1 in the Western Districts of Victoria (WD) • Establish 12 Subsidiary Demonstration Farms (SDF) in the USE, LSE and WD (4 farms from each area) • Numbers and demographics (property location, area, number of cattle) of observer producers • Investment from MLA based on successful completion of milestone reports and provision of invoices for expenses	• Project team meeting notes • Record property details including area and number of cattle. Identify and establish post weaning strategies • Pre event surveys at field days • Deliver milestone reports in a timely manner and receipt of funds	• Team meetings have been held routinely between members of the project management team throughout the course of the project. • MLA contract was revised to remove FDF and SDF sites and focus on collecting good data from all participating properties. • There were 7 producers engaged in the WD and 4 producers in the LC for a total of 11 demonstration farms at the completion of the project. • Pre event surveys were collected at the 2021 field day. No surveys were completed at the technical session in 2022. Surveys from 2023 day were collected from both group members and observer producers. • Milestone reports have been completed on schedule, with several reports rescheduled to allow extra time.

Outputs - What did we do? *Describe the outputs planned/expected from your project, including engagement activities & products from demonstration sites*	• Liveweight data from FDF and SDF properties • Feed value and feed availability data from FDF properties • Cost benefit analysis of each weaning strategy implemented at the FDF properties • Record weaner performance e.g. pregnancy test results in heifers, days from weaning until sale, carcass or animal value at sale • Implement communication plan throughout project as per project plan. This includes annual field days, articles, case studies and fact sheets • 4 annual field days targeted at local beef producers • Compile and distribute one article in each year of the project • Develop a producer guide/fact sheet in the final year of the project • Compile 3 case studies, one from each of the areas, in the final year of the project	• Data from demonstration sites recorded and collated and included in milestone reports and annual reports • Communications plan implemented as per the plan • Numbers of attendees and pre and post surveys recorded and completed and submitted in milestone reports • All articles to be pre-approved by MLA before publishing • Fact sheet released and promoted • Case studies released and promoted	• Data from demonstration sites was analysed by Meg Bell from Coleraine Livestock Consulting. • The 2020 - 2023 communications (field days/technical day and newsletter articles) were delivered as planned. . No newsletter article was delivered in 2024, instead an article was delivered in the MFMG winter newsletter 2025.
Changes in knowledge, attitudes and skills - How well did we do it? *Describe the changes in KASA that you are planning to achieve*.	• Pre and post survey of core producers at the start of the project and the end of the project to determine level of knowledge, skill and practice change • Pre and Post surveys of observer producers who attend field day events	• Pre and post survey results of core producers • Pre and post survey results of observer producers	• Pre and post survey results for core producers can be found in Appendix 8. • Pre survey results for observer producers can be found in Appendix 9. • A post survey for observer producers was not completed.
Practice changes – Has it changed what people do? *Describe the practice changes that you are*	• 100% of core producers improving post weaner cattle management practices in their cattle enterprises	• Record implemented practice change during the project through milestone reports and the annual report	• Pre and post survey results for core producers can be found in Appendix 8.

expecting to achieve by the end of your project	• 50% of attendees at field days indicating their intent to implement change as a result of attending the field day • Experience of producers involved with the PDS and identifying the extent to which they found the project useful	• Identify planned practice change through pre and post survey evaluations • Record narratives and feedback from core producers involved in the PDS through the core post survey.	• Pre survey results for observer producers can be found in Appendix 9. • •
Benefits – Is anyone better off? *Describe the benefits that you are expecting to achieve as a result of the project*	• 100% of core producers understand and evaluate their current post weaning management and growth rates • 100% of core producers identify strategies to improve current post weaning management and growth rates • 100% of core producers adopt the most cost beneficial post weaning management strategies for their beef cattle enterprise • 50% of observer producers who attend a field intend or plan to implement changes to their post weaning management to improve weaner growth rate	• Improved measurements of weaner performance identified through pre and post project survey of core producers • Implement and measure performance of new post weaning management strategies • Undertake cost benefit analysis of post weaning management strategies and identify the most profitable • Identify from pre and post surveys of observer producers conducted at field days, how many producers intend or plan to implement changes as a result of the project	• Results of pre and post survey results have been analysed and compiled (appendix 8 and 9) • Performance of new post weaning management strategies on three producer sites have been discussed in the case studies (appendix 16, 17 and 18) • Gross margin analysis of post weaning management strategies has been detailed in the Final Report (appendix 1-7).
General observations/outcomes- is the industry better off?	• Productivity and practice change following conclusion of the project and 2 years post the project • Unintended and unexpected benefits and consequences • Key messages, barriers, knowledge gaps identified as a result of the project	• Pre and post surveys of core and observer producers. Resurvey core producers 2 years post the conclusion of the project • Identified and summarised in the final report • Identified and summarised in the final report	• Pre and post survey results for core producers can be found in Appendix 8. • Pre survey results for observer producers can be found in Appendix 9. • Core producers to be resurveyed in 2027 • Observations and outcomes for the industry have been discussed in the Final Report.

Appendix 12: 2021 newsletter article

Cost-effective strategies to put more weight on weaners before the autumn break
PDS Post weaning Management Strategies for Cattle Herds
Robyn Terry
Department of Primary Industries and Regions SA, Rural Solutions SA
Livestock Consultant
Robyn.terry@sa.gov.au

[Overview]
Many beef producers throughout summer and autumn, when pasture quality and quantity is low, experience low growth rates or a loss in weight in their cattle following weaning. This then negatively effects the development of heifers or significantly extends the length of time cattle are held on for to reach slaughter or sale weights. This MFMG project is a Producer Demonstration Site project funded by Meat and Livestock Australia and managed by Rural Solutions SA. Currently we have three producer groups from Western Victoria and Lower and Upper Southeast South Australia, totalling 15 farms with one focus farm from each district. Each group is exploring different ways to fill the feed gap including, forage sorghum, forage rape and crushed faba beans.
We are aiming to identify different post-weaning management systems for cattle to maintain adequate growth rates of 600-750g/day or more from weaning to the autumn break. The costs compared to the benefits of the post-weaning strategy will also be evaluated. Additionally, we are following heifers from weaning to pregnancy testing to assess differences in reproductive success.
[Outcomes]
One of the focus farms is South Killanoola at Bool Lagoon, owned by the Seymour family and managed by Dean Eastwood. Dean is also yard weaning all calves for a period five days and although is time consuming, he sees many benefits. Primarily, his cattle are easier to handle over their lifetime with reduced risk for staff.
Dean planted a summer crop of forage sorghum under irrigation and split his mob of heifers into light and medium-high weights. The heifers of lower weight (average 292kg) were put on the forage sorghum, and the heifers of medium-high weight (average 348kg) were put onto silage and phalaris. These heifers entered the paddocks in early February and exited late April. Exit weights indicated that the heifers on forage sorghum grew on average 884g per day whilst the heifers on silage and phalaris lost weight at an average of -202g per day.
In terms of the costs compared to the benefits of growing forage sorghum, this is clearly a valuable strategy (Tables 1 and 2). Factoring in the liveweight gain (12,900kg over 230 heifers) and the costs saved by not having to feed out silage to this mob (approximately $7,020), Dean estimates that there was a nett return of $33,620. The costs to seed and grow the forage sorghum, approximately $25,000, has also been deducted from the nett return.
Additionally, through weighing his cattle more regularly, it was clear that a greater amount of supplemental silage of was required to ensure that these heifers did not lose weight. Prior to joining these heifers were able to be fed up to gain weight quickly which ultimately did not affect their pregnancy rates.

	Forage Sorghum	Silage and phalaris
Entry weight, kg	292	348
Exit weights		
Ave weight, kg	355	327
ADG, g/day	884	-202
Weight range, kg	271-402	294-423

Table 1. Entry and exit weights of weaners put onto forage sorghum or phalaris supplemented with silage

Cost of sorghum	
LW gain, kg	12900 (230 heifers)
$/kg LW	$4
Total $	$51,600
Crop cost	$25,000
Silage saving (machinery, labour and use of silage)	$7,020
Nett return	**$33,620**

Table 2. Nett return from feeding heifers on forage sorghum

[Summary]

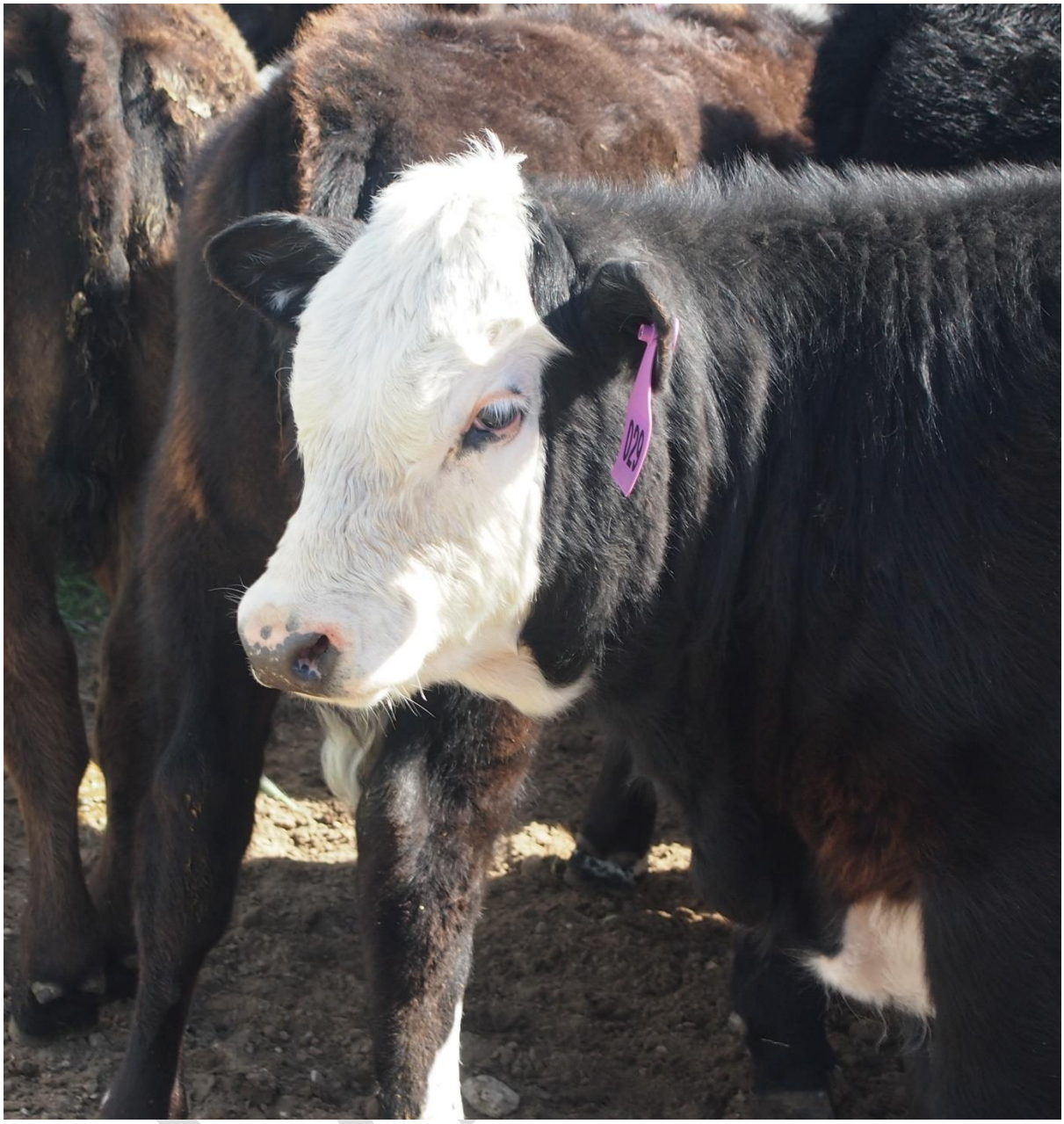
This project will be continuing for the next three years with the aim to have a variety of cost-effective strategies to increase growth rates of weaners available to producers. Producers within the group are investigating strategies such as forage sorghum, forage rape and crushed faba beans.

[Key messages]

- The project is aiming to have a variety of cost-effective strategies to increase growth rates of weaners available to producers.

- Producers within the group are investigating strategies such as forage sorghum, forage rape and crushed faba beans.

- The project will be continuing for the next three years.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Appendix 13: 2022 newsletter article

b. **Images**

Article details

Article Title	Handling Weaners for Better Productivity
Project title	Post weaning management strategies for beef cattle

Project code (from project lead – not MFMG project code)	L.PDS.1908
Funded by	MLA

Page Break

Author details

Name (to be used on article)	Jo Ward
Role in business (e.g. Senior Consultant)	Livestock veterinarian
Role in project	Project manager
Organisation	Jo Ward Livestock Vet
Email address	joward@livestockvetservices.com.au

Other contributor details

Name (to be used on article)	Indi Lamond
Role in business (e.g. Senior Consultant)	Livestock Consultant Intern
Role in project	Data analysis and collection
Organisation	Coleraine Livestock Consulting
Email address	indi@colerainelivestockconsulting.com.au

Key messages (preferably no more than 5)

1.	Beef cattle weaners in southern Australia typically experience a stagnation in growth following weaning until after the autumn break.
2.	Appropriate handling and feeding methods at weaning can minimise stress and disease, and maximise productivity and profitability.
3.	Weaning is the best time to educate young cattle for easier lifetime handling as well as improved adaptability and therefore lifetime productivity.
4.	Every handling influences the next, and we find our livestock how we leave them.
5.	

In southern Australia, beef cattle weaners typically experience a stagnation in growth following weaning until after the autumn break, due to the decline in pasture nutritive value. Often, producers are not aware of weight loss in weaners until it has already occurred, or until lower-than-ideal

conception rates are detected at preg testing of heifers, or steers are sold at lower-than-ideal weights.

MFMG received funding from MLA's Producer Demonstration Sites program to help producers quantify the cost benefit of different post weaning management strategies for cattle to maintain adequate growth rates to reach production targets for both heifers and steers. In other words: what's the most cost effective way to achieve good growth rates in young cattle? Our discussion group, formed with local producer members, meets 3 times a year to compare on farm data and learn from each other.

As part of the project, we are working to identify different post-weaning management strategies for cattle to maintain growth rates of 600-800g/day or more from weaning through to the autumn break. This growth rate has been identified as a target to reach target sale weights as soon as possible, or for heifers to reach target mating weights without compensatory growth. Perhaps most importantly, the costs compared to the benefits of the post-weaning strategy will be evaluated. Each year we are exploring different aspects of weaning to further the education of producers around this subject. This year, we were lucky enough to meet with Dr Lachlan Strohfeldt of Protein Production Vets to learn about yard weaning and weaner education.

Weaning is a stressful time in an animal's life, and minimising this stress can have significant health, welfare and production benefits. Weaning is also a critical learning time for young cattle. Not only can they be handled to ensure they are more familiar with stock yards and people, yard weaned calves can create stronger social bonds and interact better as a mob, creating a more adaptable animal. Minimising stress will in turn minimise time off feed and consequently maximise weight gains, as well as result in a well-adjusted animal for the rest of its life. Less stressed and more adaptable animals have a reduced risk of dark cutting meat, and additionally, a more robust immune system able to withstand health challenges. Consequently, yard weaned cattle are likely to be more sought after for finishing than cattle with unproven backgrounds.

Our discussion group met on farm at Willalooka, SA on the 27th September 2022. After a short theory session in the shed, we ventured into the yards with some freshly weaned bawling calves and learnt some practical skills regarding handling and education of these animals. Work was focused on individual animals rather than working the mob as a whole to begin with. We learnt to ask rather than tell, and to make it the animal's idea to move to find a release from the pressure.

Many people will apply pressure continuously until the cattle are where they want them, and only apply pressure when there is a job to do and they need the cattle to move. By educating young cattle to respond to pressure through rewarding movement with release of that pressure, we can create animals that are easier to handle for the rest of their lifetime.
This handling can also be used to move calves to feed and water, minimising time off feed and consequently avoiding weight loss at weaning, and to familiarise young animals with the stock yards.

In short, our expectations for weaners should be that they relax and stop bawling. We want quiet, contented animals that eat together and move together as a group and are happy to engage in normal behaviour in the yard and whilst you are present. This may include grooming, chewing their cud and sleeping. We don't want animals with their heads up and eyes forward, facing us. As a rule, cattle like to see what is pressuring them and where they are going at the same time. This means pressure applied to a mob of cattle facing up to us will generally split the mob. Likewise, pressure

applied directly from the back of a mob will almost always result in the mob spilling out one side as the cattle walk halfway around the pressure in an arc to maintain this vision. Cattle also love to go back to where they came from. When we learn to work with these behaviours and use them to our advantage, livestock handling becomes less stressful, and not only for the cattle!

Roadmap for Weaning Success:

1. Have a plan for weaning in place, before you start weaning.
2. Start weaner handling work on day one, build complexity with each handling.
3. Provide timely rewards – feed, water, maybe even bedding when you leave them alone.
4. Build cattle confidence by leading and asking rather than pushing and telling.

- **Call to action and more information (if appropriate and relevant)**
- **Summary and conclusions**

Yard weaning and education of weaners has numerous benefits, from improved welfare through to minimising weight loss and maximising adaptability. Not only will the skills taught at this yard weaning day maximise productivity and profitability for producers, they will minimise stress and disease for weaners and help in creating safe, easy to handle cattle for the rest of their lifetime. Every handling influences the next, and the best place to start the education for calm, happy cattle is at weaning time.

- **Written Acknowledgements** – contractors for delivery of project
- Jo Ward Livestock Vet
- Protein Production Vets
- Coleraine Livestock Consulting

Appendix 14: 2023 newsletter article

Making more from your weaners

Jo Ward | Jo Ward Livestock Vet
E: joward@livestockvetservices.com.au

Key messages

- Beef cattle weaners in southern Australia are typically experiencing a stagnation in growth following weaning until after the autumn break
- Producers are typically not taking adequate measurements to know if their weaners are performing well or not
- Taking adequate measurements is only the first step – we need to know how to utilise this data
- With appropriate data collection and the skills to utilise this data, producers will be able to determine the most profitable weaning practices for individual enterprises

Introduction

The Post weaning management strategies for beef cattle Producer Demonstration Site project focuses on growth rates of calves from weaning through to the autumn break, a period where adequate growth rates are not commonly achieved, resulting in a stagnation of growth through the summer and autumn when pasture quality and quantity is typically low. This has an impact on producers' profitability – with cattle being held for longer, consuming more feed and being sold at a time when supply is high and prices are often at their lowest. Extended periods of growth stagnation can also negatively impact eating quality by resulting in increased ossification levels. Furthermore, research indicates that heifers experiencing a growth check during this period followed by compensatory growth, have a smaller pelvic size than those with continued growth through the same period. This results in higher risk of dystocia. Currently, this issue affects the majority of beef herds in southern Australia, and it is estimated to impact at least 75% of producers across the Limestone Coast and Western District of Victoria.

MFMG received funding from MLA to help producers quantify the cost benefit of different post weaning management strategies for cattle to maintain adequate growth rates to reach production targets for both heifers and steers – in other words, what the most cost-effective way to achieve good growth rates in young cattle is. Our discussion group, formed with local producer members, meets three times a year to compare on-farm data and learn from each other. Interesting and informative discussions with agronomists, ruminant nutritionists, veterinarians and cattle behaviour specialists to explore all aspects of the post weaning period have been a great result.

Outcomes

To date, producers have trialled different strategies for the post weaning period. This has included everything from summer crops and pellets through to hay or silage and lucerne pastures. Results have been mixed and impacted by various health issues and other seasonal challenges. Comparison of results between farms and across seasons has been further complicated by changes in feed availability and price, as well as livestock prices. Whilst data analysis and partial budgets will be an interesting output from this project, perhaps the biggest take home message will be the importance of not only measuring both nutritional inputs and production outputs in the form of weaner weights, but also having the skills and knowledge to be able to effectively utilise this data. This allows producers to measure performance, but perhaps more importantly, it will allow improved decision making for future weaners from both a productivity and profitability perspective.

One of our producers manages 240 winter calving Angus breeders on a 1,000ha mixed enterprise near Beachport in the Limestone Coast. The following table (Table 1) shows data from calves

dropped in the winter of 2020 and 2021. In both years, calves were weaned in November and run as one group, fed perennial pastures, silage and straw. In this example, despite the fact that weaners were managed in the same way over two consecutive years, we have seen a significant difference in the average profit per head.

Table 1: Calves dropped in the winter of 2020 and 2021

	Start weight	**Start value (2020 $4.30/kg 2021 $6.80/kg)**	**End weight**	**End value (2020 $4.30/kg 2021 $6.80/kg)**	**Ration cost $/hd**	**Average profit $/hd**
2020 weaners	206kg	$886	286kg	$1,230	$75	**$269**
2021 weaners	218kg	$1,482	246kg	$1,673	$73	**$118**

Livestock prices in 2020 were significantly lower than in 2021, yet we witnessed a greater profit per head in 2020 compared to 2021. Average weight gain in 2020 was 80kg whilst in 2021, average weight gain was only 28kg, although feed test results and feed availability were comparable. In both years, time on feed and starting weights were similar. On average, these weaners seemed to grow at 300–500g/day on this ration. However, in 2021, the weaners lost an average of 200g/day between March and May. Further investigation is required to determine the exact cause of this loss, but we can use this information to highlight the importance of measuring – even if you are not changing your management practices! Whilst this result is evident on paper, it can be difficult to visually appreciate a loss of 200g/day out in the paddock, and thus when measurements are not taken, the problem has the opportunity to snowball into a much larger issue before action is taken.

More information

This year, we are excited to be diving into the financials with an interactive session at the Beefing up your Bottom Line workshop in September 2023. John Francis of Agrista will be leading an information session to discuss rural business management, some ins and outs of planning and partial budgeting, as well as some key performance indicators to monitor. John has extensive experience in both agronomy and farm management consultancy. He appreciates the value of integrating the rigour of science and a knowledge of production systems with financial management skills to achieve the best results for farm businesses.

Summary and conclusions

On the surface, the project's aims and outcomes may seem relatively simple. When we start delving into the data however, it can become complicated due to multiple factors. It is difficult to know which feed options are the most cost effective to use on-farm unless you are consistently analysing financials and feeding methods. Not only that, if we are not measuring the performance of our weaners, we do not know what we might be missing out on! A big part of this project is demonstrating the importance and value of collecting a relatively small amount of data at critical times and setting up producers with the knowledge and skills to utilise this data for cost benefit analysis. Our aim is to give producers the confidence and skills to take appropriate measurements at the right times, as well as arming them with ideas and knowledge about the method and profitability of different weaning strategies. We are also aiming to arm producers with invaluable knowledge around animal health, nutrition and productivity, pasture health and management and the business skills to tie it all together.

Appendix 15: 2025 newsletter article

Article details

Article Title	Post weaning management strategies
Project title	Post weaning management strategies for beef cattle
Project code (from project lead – not MFMG project code)	L.PDS.1908
Funded by	MLA

Author details

Name (to be used on article)	Jo Ward
Role (e.g. Senior Consultant)	Livestock Veterinarian
Organisation	Jo Ward Livestock Vet
Email address	joward@livestockvetservices.com.au

Other contributor details

Name (to be used on article)	Meg Bell
Role (e.g. Senior Consultant)	Principal Consultant
Organisation	Coleraine Livestock Consulting
Email address	meg@colerainelivestockconsulting.com.au

Key messages (preferably no more than 5)

1.	When feed provided meets weaner requirements for growth and in a cost-effective form, gross margins are optimised.
2.	The animal health benefits of meeting nutritional requirements of weaners are significant.
3.	Weaning practices can set animals up for improved lifetime success.
4.	You don't know what you don't measure!
5.	Peer to peer learning offers a key strength in farm businesses.

Introduction

Autumn and spring calving beef herds in southern Australia often fail to maintain adequate growth rates of calves from weaning to the autumn break, resulting in a stagnation of growth for up to 6 months of the year. This has an impact on producers' profitability, as cattle are held for longer, consume more feed and are sold at a time when supply is at its highest and prices are often at their lowest. This MLA funded project, managed by MacKillop Farm Management Group (MFMG) in the Limestone Coast (LC) region of South Australia and in the Western District (WD) of Victoria, was set up to investigate different post-weaning management systems to improve post-weaning growth rates prior to selling or joining.

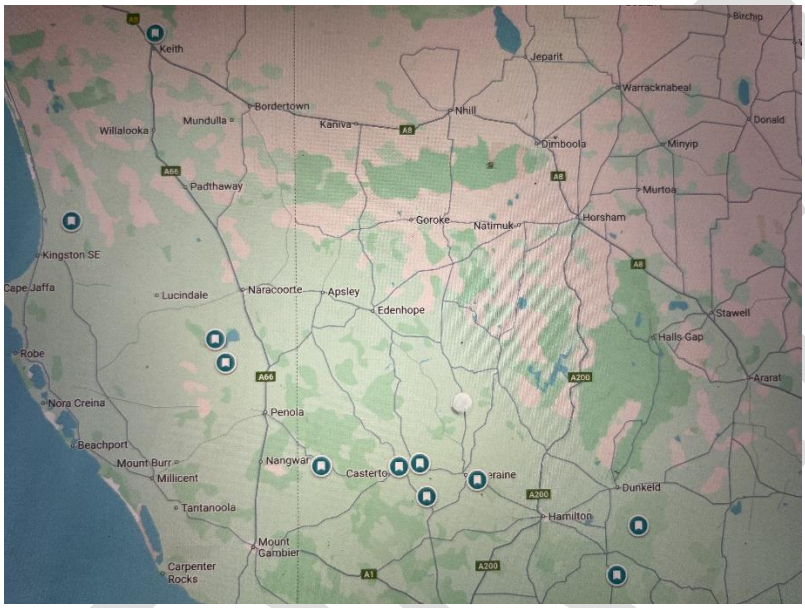
Background, activities and overview

This project was initiated in 2019, unfortunately not long before the outbreak of COVID-19. This and the associated lockdowns, particularly given the project ran over the border of Victoria and South Australia, proved a significant hurdle. Multiple changes in project management and changes in producer participation were also problematic. Initially designed as a three year project, we were able to extend the project for an additional two years to ensure an adequate volume of quality measurements were obtained for cost benefit analysis and comparison. Regrettably, both the LC and

WD experienced an extremely low rainfall year for 2024 which impacted data collection through both changes in management (eg early sale of weaners) and producer duress. Alas, with conditions in agriculture always changing it is perhaps a benefit to have results spanning across different seasonal conditions.

Initially, all businesses involved were to have a control and trial group of heifers and steers to explore and compare different post weaning strategies. It quickly became apparent however that it was unrealistic to expect businesses to achieve this for the duration of the project. Consequently, the model was changed to compare weaning strategies between farms and on the same farms between seasons. Locations of Core Producers are shown in Figure 1.

Figure 1: Locations of Core Producers



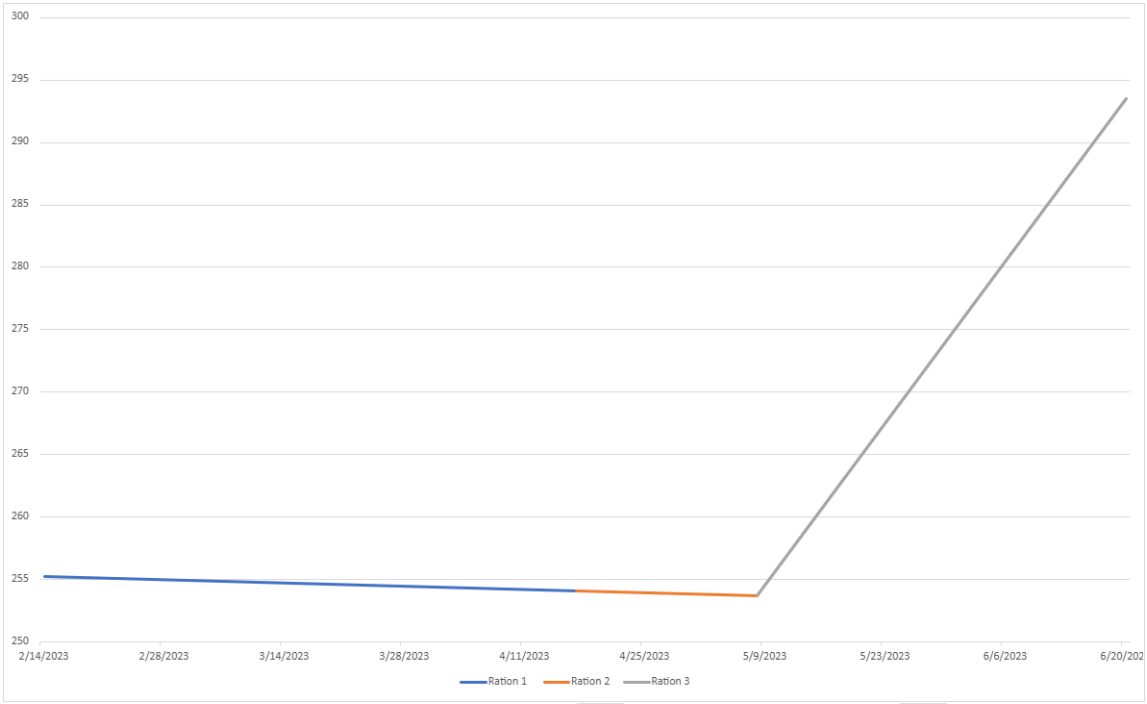
Outcomes

Economic analysis was undertaken using a gross margin evaluation examining the time frame from weaning to green feed on the ground and taking into account weight gain of weaners and cost of feed. As some farms purchased in hay or silage whilst others made their own, it was decided to use standard figure for feed pricing where an exact figure could not be provided. This will also offer some allowance for opportunity cost. Similarly, an industry standard figure was used for livestock sale price each year, allowing for more transparent comparison of data.

It was difficult to compare between farms due to copious variables including but not limited to differences in management. This was unable to be compensated for in data analysis owing to large gaps in the data made available. Consequently, the main benefit has come from comparison on individual farms across different seasons.

The figure below shows weight loss of weaners through the autumn period whilst on dry pasture and poor quality hay (ration 1 and 2), followed by a period of increasing growth through utilisation of pasture under a pivot (ration 3).

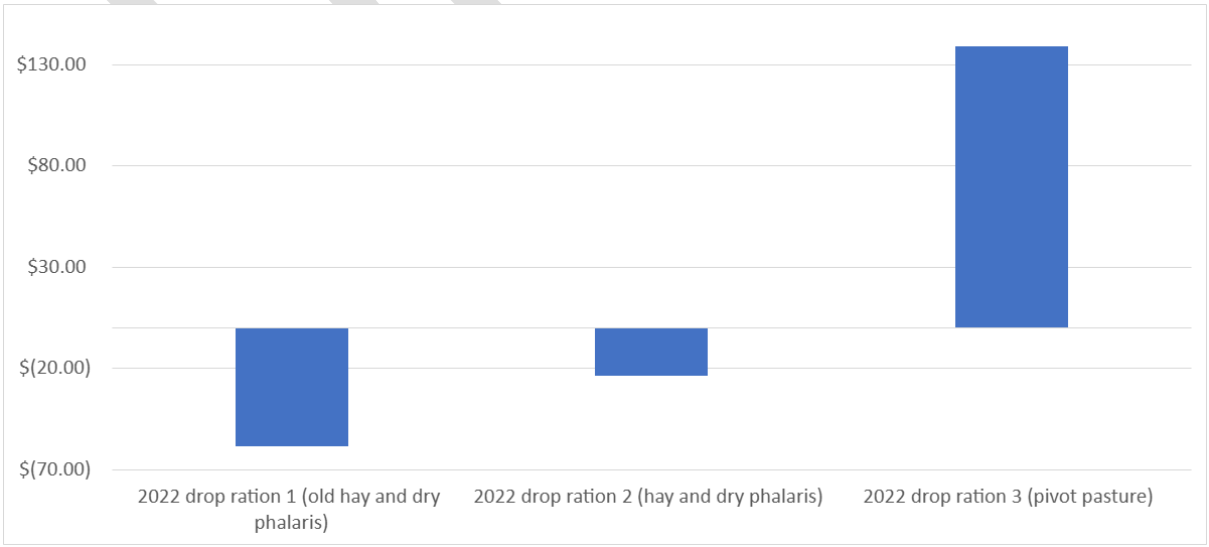
Figure 2: Farm 9 weaner growth rates in 2023



This pattern is all too common for beef weaners in southern Australia and highlights the need to address the autumn feed gap. Without adequate nutritional support during this period, growth rates can stagnate or decline as demonstrated, leading to both economic losses and compromised herd development.

The following figure depicts the gross margins for each of the periods where the weaners were fed different rations. These rations were fed *consecutively* i.e. one time period following another rather than *concurrently*.

Figure 3: Farm 9 gross margins for 2023

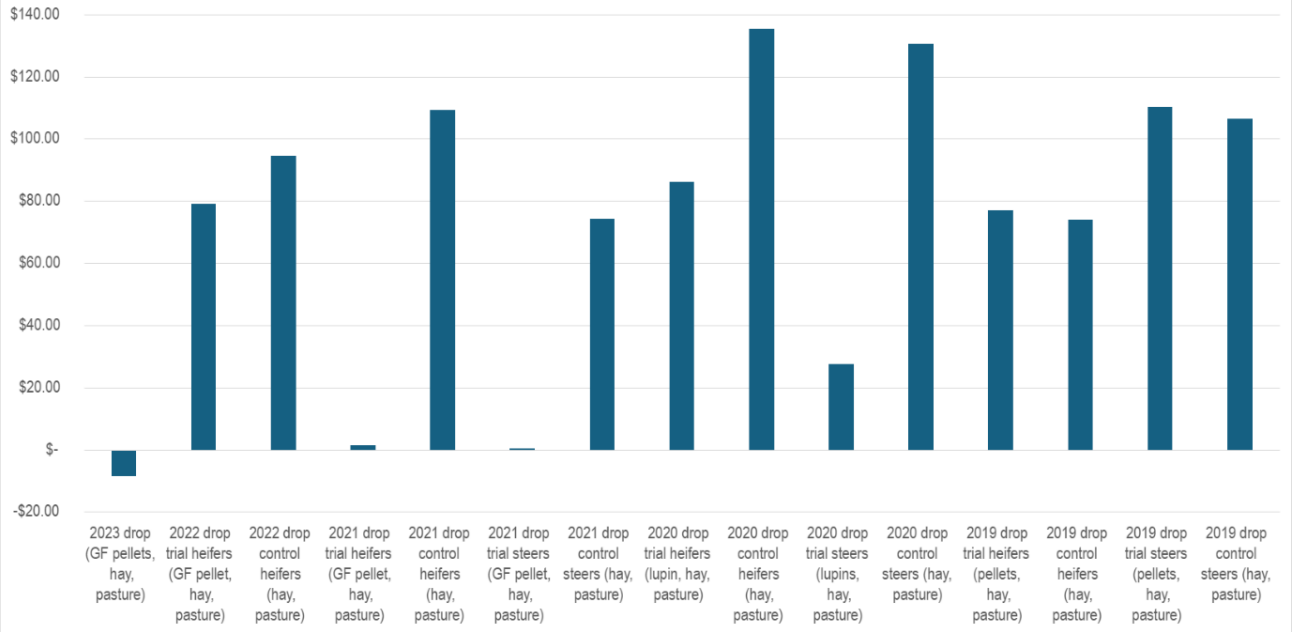


This indicates that while the weaners were stagnating in weight, they also recorded negative gross profits, reinforcing the financial consequences of inadequate nutrition. There was a low cost of

production associated with the pasture grown under the pivot which amplified the profitability, effectively demonstrating that lower ration costs are associated with higher gross margins as long as growth rates are maintained.

The following figure gives an overview of data collected from a PDS located near Woodhouse, Victoria.

Figure 4: Farm 6 gross margins



Results indicate that low-cost pasture-based systems can deliver strong economic returns, provided nutritional requirements are met. In contrast, rations like grain free pellets and lupins, while beneficial in some contexts, must justify their cost through significantly improved feed efficiency and weight gains.

Control groups relying on hay and pasture consistently demonstrated higher profitability, particularly in the 2021 and 2022 control heifers. This highlights the importance of strategic pasture management to extend feed availability into autumn, reducing dependence on high-cost supplements. However, seasonal variations remain unavoidable. Years with favourable conditions in the Western District supported stronger profitability for control groups, whereas prolonged low rainfall in 2024 exacerbated the autumn feed gap, leaving virtually no pasture available. Under these conditions, alternative supplementary feeding not only became necessary but also proved more profitable, as well-balanced rations helped maintain growth rates and optimize feed conversion efficiency.

Delayed rumen adaptation to different forage types may contribute to reduced growth rates during the measured period in some cases. This was likely observed in the lupin trials conducted in 2020, where slower adaptation may have played a role in the lower profitability of the trial groups compared to the control, alongside seasonal conditions. Implementing strategies to ensure a smooth transition between forage types can help minimise setbacks, improve feed conversion rates, and ultimately enhance profitability.

If the inclusion rate of high-quality feeds like lupins or grain is too low, as was the case in several of the trials on the PDS sites, the overall diet composition may not improve enough to significantly impact growth rates compared to a control group. This reinforces the need for careful ration formulation to ensure that supplementation provides meaningful benefits.

Whilst difficult to quantify, the animal health advantages of meeting nutritional requirements of weaners are also of significant benefit. Nutritional stress is one of the most significant stressors of

cattle in the post weaning period and can lead to increased incidence of disease, including pink eye and pneumonia, and even increase the frequency and severity of intestinal worm burdens through decreased immune function.

Not all producers have access to consistent irrigation and seasonal variability remains unavoidable. This underscores the need for flexible feed management, ensuring that during periods of limited pasture availability or declining quality, alternative supplementation is integrated to prevent setbacks and sustain profitability. By integrating cost-effective baseline feeding with the flexibility to pivot toward higher-quality supplements when needed, producers can optimize feed conversion efficiency, sustain growth rates, and ensure cattle reach target weights despite seasonal variability. Proactive planning, regular feed testing, and adaptable ration strategies further support effective navigation of the autumn feed gap, enhancing economic returns and maintaining herd performance amid fluctuating pasture conditions..

Comparing the data collected in this project presented challenges due to variations in weaner feeding durations and gaps in data collection. While the findings provide valuable insights, they do not yield clear-cut conclusions but instead highlight broader trends that can inform future management decisions. The following key messages remained consistent across the majority of gross margin summaries;

- Ensuring weaners have adequate protein and energy intake particularly during low rainfall years is crucial for optimising weight gain and overall profitability. Higher rates of ADG (above 0.5kg/day) were associated with stronger financial returns.
- Lower ration costs were associated with higher gross margins, however growth rates played a more important role overall.
- Where producers could provide a ration to their weaners at lower costs whilst maintaining a higher growth rate, the gross margins tend to be higher.
- ADG varies year-on-year and between mobs based on the quality of the ration provided.
- Gross margins tend to be higher where weight gain is higher, even where ration costs are also higher.
- While pasture and hay-based systems proved cost-effective, additional supplements like lupins or pellets are necessary in some seasons to prevent growth setbacks. Flexibility and foresight is important to optimise feeding strategies during this period.
- Optimising feeding strategies particularly when adapting the rumen to a different forage type and ensuring a balanced ration are important to ensure high-cost feeds can justify their expense with improved feed conversion efficiency.
- Poor quality rations resulted in poor weight gain despite cost of ration, underscoring the need for regular feed testing and ration selection.

This project has significantly improved the participating producers' awareness and ability to take appropriate measurements and make informed decisions when it comes to the management of their beef weaners. The networking within this project between research, industry and advisors has demonstrated to participants the value of ongoing animal health, nutrition and agronomy advice. Perhaps the most significant benefit to participating producers was the peer-to-peer learning with the facilitation of abundant discussion as well as the opportunity to inspect numerous different properties and farm businesses. Not only does this support learning opportunities, but it provides important networking and motivation in an otherwise often solitary work environment.

Recommendations (if appropriate and relevant)

Is there something interesting that you want to highlight or recommend implementing?

You don't know what you don't measure! Collecting data and reflecting on previous years has shown to give considerable advantage in decision making. If this project has taught us anything it is

that measurements vs estimations can be surprising; be that feed test results or animal weights or otherwise. We also know that there needs to be at least a 30% change in feed availability before it can be appreciated visually. Even with excellent estimation skills, this is a significant amount to be lagging. And of course, measurements will give a baseline so if you are considering making changes, the cost benefit can be quantified and thus the most viable long-term strategies for your business selected.

Summary and conclusions

A lot of the time we get stuck in a system because it can be easier to just do what you've always done, particularly if the system appears to be working. This project has aimed to encourage and inspire businesses to keep an open mind, use precise measurements and make sure you are choosing the most cost effective and profitable weaning strategies for your business. Conceivably it will also have encouraged businesses to maintain some flexibility in their systems and provided the confidence to try new strategies.

Written Acknowledgements

The management team for the post weaning management strategies in beef cattle PDS project would like to thank all producers who have been involved in the project over the last 5 years. Projects of this nature would not be possible without the farm businesses willing to invest their time and share their data with the wider industry and for that we are so grateful.

Appendix 16: Case study – Paul and Megan Mould

Case study – *Optimising management systems in beef cattle*

Paul and Megan Mould, Coleraine, Vic

Author: Jo Ward, Jo Ward Livestock Vet

Snapshot

Name:	Paul and Megan Mould **(together with their children Harry, Ava and Millie)**
Location:	Coleraine, Victoria
Average rainfall:	600mm
Enterprise:	640 Angus and F1 Wagyu breeding cows
Farm area:	930Ha
Soil type:	Approximately half black cracking soil on slopes, with the remainder red gum tableland
Pasture base:	Predominantly old Australian Phalaris, undergoing renovation with clover and ryegrass

Figure 1: Ava, Millie and Harry Mould

Business philosophy

"Establishing a profitable and sustainable enterprise that ethically produces high-quality beef while integrating business diversification as part of a strategic succession plan."

Optimising management systems in a beef herd: The Mould family's success story

Effective post-weaning management is essential for ensuring optimal cattle growth, improving herd productivity, and enhancing financial viability. Paul and Megan Mould manage a spring-calving Angus and F1 Wagyu enterprise near Coleraine, Victoria, where they have refined their approach to weaner nutrition and management to maximise efficiency and profitability.

Paul and Megan grew up north of Broken Hill and Port Augusta. The Moulds were managing the family farm 'Emu Springs' at Tintinara in South Australia before relocating to Victoria's Western District around 10 years ago, and have consistently sought opportunities to enhance their management practices. Their participation in the MacKillop Farm Management Group's 'Post-weaning management strategies for cattle herds' project has allowed them to trial new approaches, leading to tangible improvements in cattle performance, economic outcomes, and overall business resilience.

Enhancing post-weaning strategies

Participation in the project allowed the Moulds to refine their post-weaning strategies by implementing structured nutritional planning, improved handling techniques, and data-driven management decisions. Key developments included:

- Comparative feeding trials
  - Two feeding systems were trialled—one group-fed hay and silage, while another was pasture-fed without supplementation. These trials demonstrated the value of strategically meeting nutritional requirements, reinforcing the importance of balanced feeding programs to optimise weight gains.
- Improving yard weaning practices
  - Adjustments in the yard weaning phase led to improved calf adaptability, reducing stress and enhancing feed efficiency.
- Incorporating minerals into the ration
  - The introduction of minerals (using Beachport Liquid Minerals) anecdotally contributed to better calf demeanour and enhanced feed transitions, supporting overall herd performance.
- Trialling summer crop integration
  - A trial with 70 Angus steers on 27ha of summer crop demonstrated the potential for alternative feed sources. While initial acclimation challenges resulted in approximately 50% of the feed being consumed before cattle fully benefited, future refinements aim to optimise utilisation through adjusted stocking rates and targeted sowing strategies.
- Advancing supplementary feeding approaches
  - The Moulds transitioned from pellets to crushed barley, ultimately adopting a Farmgate Stockfeeds grain mix. Imprint feeding proved highly beneficial, allowing easier adaptation to feeders, reducing transition times, and ensuring more consistent feed uptake.

Economic impact and gross margin benefits

An assessment of financial outcomes following these refinements has demonstrated key economic advantages:

- lower feed costs while maintaining targeted growth rates
- healthier, more resilient weaners, leading to fewer animal health issues and improved overall herd wellbeing
- improved weight gain efficiencies, enhancing market readiness

By strategically meeting nutritional needs in the most cost-effective manner, the Moulds have strengthened their gross margin, demonstrating the importance of refined post-weaning strategies.

Diversification: Basalt Hills Beef & Lamb

Beyond their focus on production efficiency, the Moulds have embraced business diversification through the development of Basalt Hills Beef & Lamb, a premium farm-to-plate beef and lamb brand. The brand is run in conjunction with the Ross family from North Gums at Penshurst, who supply the lamb.

The venture is designed to provide greater control over farm gate prices, minimising exposure to market fluctuations while reinforcing financial sustainability through value-adding opportunities. Additionally, it supports succession planning in their business, ensuring long-term enterprise resilience. A key focus is bridging the gap between producers and consumers, fostering education and transparency around ethical farming practices.

The Moulds faced early production challenges, particularly due to drought conditions, which affected the consistency of their product. However, their initial product trials – including one 650kg steer and 12–15 lambs – produced exceptional quality meat, reinforcing confidence in their small-batch approach. The feedback was highly positive, especially regarding the taste and tenderness.

Consumer engagement has been a key focus, with social media marketing via Instagram driving direct sales and educational outreach.

The Moulds are committed to high welfare standards, ensuring pasture-raised livestock wherever seasonally achievable and prioritising minimal stress throughout the supply chain. By reducing carbon miles and shortening transport distances, the Moulds improve both sustainability and animal welfare while offering greater transparency, enabling consumers to understand exactly where their meat comes from.

As the business grows, developing a robust direct-to-consumer supply model remains a priority. The Moulds have established retail partnerships with a number of businesses around the Western District, including Hamilton Hamper, Penshurst Store, Freshly Fed, and The Bunyip pub, expanding their reach. Partnering with Arteka Farms for a market at The Roxborough in Hamilton has been a valuable local marketing strategy, providing exposure and direct engagement with consumers. This approach not only helps build brand recognition but also allows potential customers to sample individual cuts before committing to a full hamper. With plans to repeat the collaboration, it presents a strong opportunity to continue fostering local connections and increasing consumer confidence in the product. Future plans include diversifying product offerings, incorporating catering boxes and surprise meat packs to better utilise lower value cuts, and investing in refrigerated transport to scale distribution efficiently.

Key takeaways and final reflections

Paul and Megan Mould's journey through the project highlights several key insights for industry stakeholders:

1. Meeting nutritional requirements is essential for optimal growth rates and weaner health.
2. Low-stress handling and weaner education minimise time off feed, reduce disease risk at weaning and improve long-term handling, ultimately enhancing adaptability and overall herd performance.
3. Data-driven management ensures greater accuracy in decision-making and long-term sustainability.
4. Diversification of the business enhances resilience, supports succession planning, and ensures long-term sustainability, providing stability and adaptability for the future.

Reflecting on the experience, Paul and Megan gained more knowledge from the project than expected and valued the opportunity to have collaborated with like-minded producers. Their commitment to continuous improvement and strategic diversification serves as a model for other beef enterprises seeking to enhance post-weaning efficiency and long-term business sustainability.

Appendix 17: Case study – James Cameron

Case study: The importance of data collection

James Cameron, Casterton, Vic

Author: Jo Ward, Jo Ward Livestock Vet

Snapshot

Name: Dunan Pastoral, James Cameron

Location: Casterton, Victoria

Average rainfall: 650mm

Enterprise: Beef breeding (800 Angus cows), backgrounding, and trading

Farm area: 1000Ha

Soil type: Majority basalt clay loam

Pasture base: Perennial ryegrass, phalaris, clover, and annual grasses

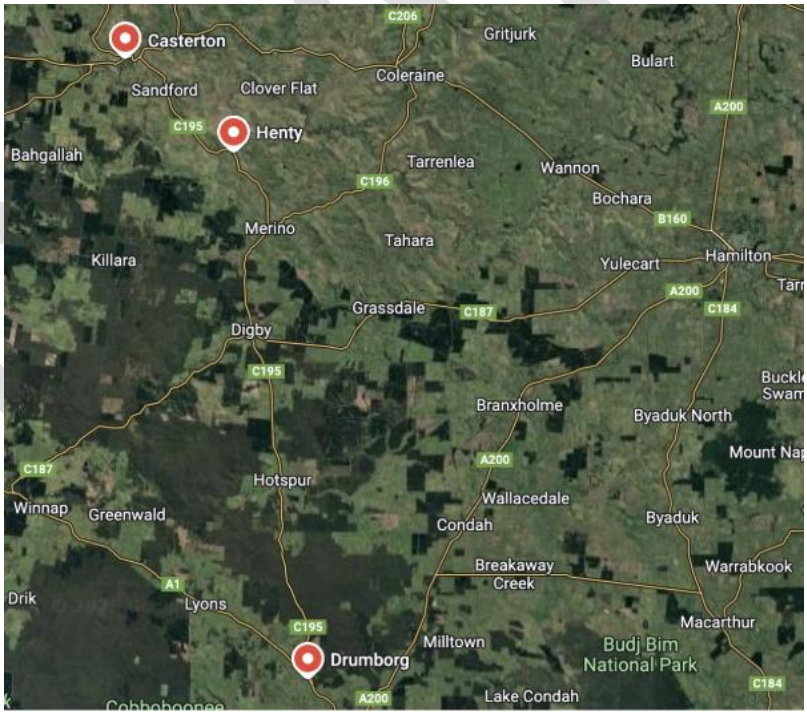
Business philosophy

"We aim to produce efficient, easy-doing cattle with elite carcase qualities that sell for above-average commercial values where possible, while utilising a resilient, low cost-of-production business model."

Background

Dunan Pastoral is a multi-generational, family-owned beef enterprise, operating with three full-time labour units. The business breeds Angus cattle at Casterton and Henty while growing out weaners at Drumborg, utilising higher rainfall pastures.

Figure 1: Location of land holdings for Dunan Pastoral



The operation follows a structured production cycle, where steers are raised to feeder weight and heifers are joined on their southern property before returning home to calve with the mature cows in late winter and early spring.

For over two decades, Dunan Pastoral has relied on internal artificial insemination (AI) programs to retain high-performing cows and bulls, ensuring consistency in genetic selection.

Historically, the farm has relied on purchased hay and silage rather than producing its own, using this fodder to sustain weaners. However, recent efforts have focused on enhancing the weaner

program to improve growth rates and increase resilience against poor seasonal conditions. To achieve this, the business has trialled various feeding systems, transitioning from traditional hay and silage methods to grain-based strategies, ensuring greater adaptability to shifting seasonal patterns. Dunan Pastoral aims to join heifers at 320kg, targeting a minimum weight of 250kg by mid-June to ensure adequate development. However, in poorer seasons, a minimum threshold of 290kg is accepted to maintain sufficient joining numbers. Heifers typically compensate with additional growth before calving, supported by extended pasture availability and a longer growing season on the Cameron's southern property.

Steers are typically sold between 16–21 months of age into the feeder market, generally weighing 440–520kg. A small percentage (5% or less) exceed feeder specifications and are retained to grow out as bullocks.

Traditionally, weaning strategies focused on transitioning cattle onto green feed, supplemented with hay as needed. More recently, the approach has shifted towards higher-quality hay and silage to enhance nutritional intake. Currently, specialty feeds and grains are being trialled to further improve production efficiency and optimise growth rates.

Historical weaning strategies

Weaning at Dunan Pastoral is normally conducted in late autumn, with timing dependent on seasonal conditions, cow and calf status, and feed availability. The general process involves:

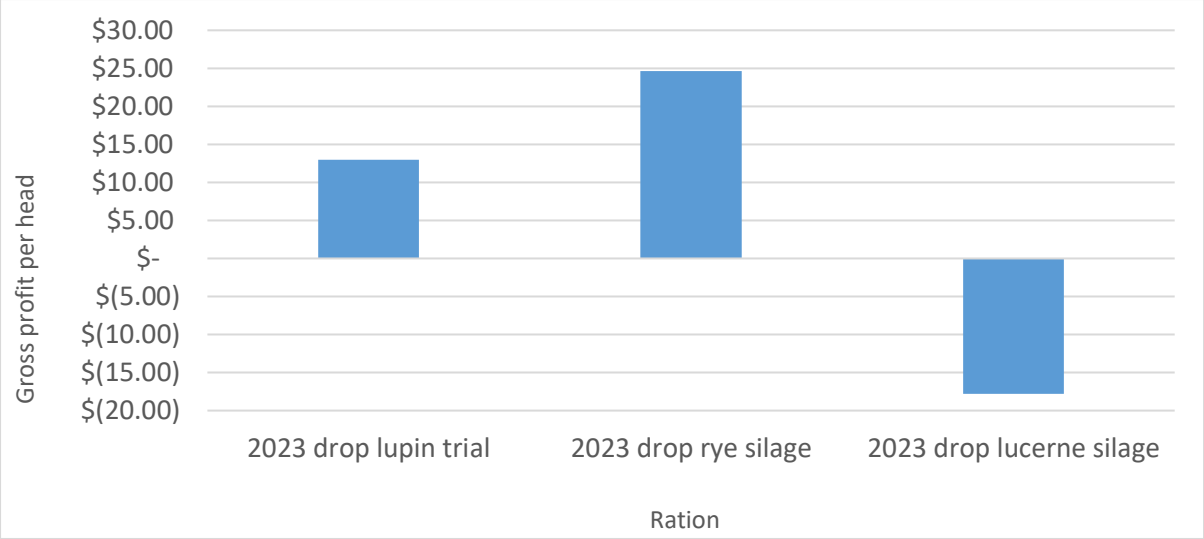
- separation of calves overnight in the yards, followed by removal of cows on day two or three, depending on herd behaviour
- exposure to human handling, movement through yards, and controlled dog pressure
- a variable yarding period (3–6 days, typically 4–5 days), adjusted based on calf temperament and response to handling.

This approach has been found to effectively manage weaning stress, ensuring cattle are conditioned for a lifetime of positive handling. By reducing stress, cattle are allowed to adapt more efficiently to their new environment and consequently time off feed and disruptions to growth are minimised. Additionally, lower stress levels contribute to disease minimisation, helping to reduce health complications and improve overall herd resilience.

2023 drop weaner management approach

Calves born in 2023 and weaned in autumn 2024 faced particularly challenging seasonal conditions. To assess performance under varying nutritional strategies, the weaners were divided into two groups, each receiving a different ration: lupins, or silage (rye silage followed by lucerne silage). The following table outlines the financial outcomes associated with each feeding program.

Table 1: Gross profit per head of rations provided to 2023 drop weaners



The financial performance of the three rations varied significantly due to differences in intake, feed conversion efficiency, and overall cost-effectiveness. Rye silage delivered the highest return at $25/head, attributed to its combination of higher average daily gain (ADG) and lower feeding costs. However, once the rye silage was depleted, the animals transitioned to lucerne silage, which resulted in a $17.81 loss/head. Despite being the lowest-cost ration per tonne, the lucerne silage's poor nutritional quality led to zero weight gain, underscoring the critical role of feed testing and strategic ration selection in optimising weaner performance. Additionally, the presence of grass seeds in the lucerne silage contributed to a high incidence of pink eye within the herd, further complicating management outcomes.

Lupins, despite their extended feeding period, generated a lower return of $13.02/head due to the limited feeding rate, which failed to meet the nutritional requirements necessary for higher growth rates. Additionally, rumen adaptation may have delayed the full benefits, as cattle typically require a couple of weeks to adjust. If not properly balanced with fibre, lupin intake can be inconsistent, further affecting feed efficiency and weight gain.

These results must be viewed within the context of unprecedented seasonal conditions, where uncertainty around rainfall necessitated a survival-focused approach to management. Decision-making prioritised immediate viability over optimal feeding strategies, meaning typical best practices may not have been fully applied. As a result, caution is required when analysing the data, as outcomes may have differed in a more typical season where feeding programs could be planned with greater certainty.

Gross margins were calculated based solely on livestock value and feed costs, excluding other operational expenses. Additionally, the duration of feeding varied across lupins, rye silage, and lucerne silage, which necessitates caution when making direct comparisons, as differences in feeding periods may influence overall performance outcomes.

Outcomes: the importance of data collection

Participation in the MacKillop Farm Management Group's 'Weaning management strategies for cattle herds' project has led to significant refinements in management at Dunan Pastoral, driving more goal-oriented decision-making and enhancing feeding strategies. These improvements have strengthened the ability to track weaner performance, optimise nutritional interventions, and refine resource allocation, contributing to more efficient and sustainable herd management.

Clearer objectives for weaner nutrition are being established based on measurable performance metrics, while more frequent weighing will ensure accurate tracking of growth rates. Regular feed testing has become a key component, allowing for optimised supplementary nutrition decisions. These changes bring several business benefits, including an improved ability to identify alternative feed options and assess their effectiveness. Greater confidence in trialling new feeding techniques is

leading to better economic outcomes, while discontinuing less effective silage types has reduced waste and inefficiencies. Additionally, decisions regarding the expansion of feeding equipment can now be made with greater certainty, supported by quantifiable benefits observed throughout the trials, further enhancing operational efficiency.

One of the most rewarding aspects of the project for the Camerons was engaging with industry professionals and fellow producers, gaining insights into different philosophies on feeding young cattle – from minimal input systems to intensive approaches – and understanding the economic and practical justification behind each. This exposure to diverse perspectives on feeding strategies has enabled more informed decision-making, contributing to a deeper understanding of the trade-offs and efficiencies in cattle management.

Key takeaways and final reflections

James Cameron's experience with data-driven weaner management demonstrates the value of structured feeding trials, frequent weight monitoring, and strategic feed evaluation in optimising herd performance.

This case study underscores several key takeaways:

- Accurate data collection informs better decision-making, driving economic and operational efficiencies.
- Trialling varied feeding systems ensures adaptability to seasonal fluctuations.
- Industry collaboration and peer-to-peer learning fosters knowledge exchange, supporting business resilience and growth.

The MacKillop Farm Management Group's 'Post-weaning management strategies for cattle herds' project successfully met expectations for Dunan Pastoral, delivering valuable insights and reinforcing the importance of data collection in refining management strategies. Where future PDS align to their business objectives and operational needs, the family would consider participating again.

James' refined approach to weaner nutrition and data-driven management will continue shaping Dunan Pastoral's long-term feeding strategies and profitability, reinforcing the importance of precision agriculture in livestock production.

Appendix 18: Case study – Tim & Stacey Morton

Case Study – *Early weaning to get through a tough season*

Tim and Stacey Morton, Penshurst, Vic

Author: Jo Ward, Jo Ward Livestock Vet

Snapshot

Name	Tooronga Partnership (Tim and Stacey Morton & Brian and Natalie Morton)
Location	Penshurst, Victoria
Average rainfall	600mm
Enterprise	500 Angus cows + 2,500 Corriedale ewes
Farm area	1,600Ha
Soil type	Predominantly loamy
Pasture base	Semi-improved (Vic Rye)

Business philosophy

'To grow the business and build a profitable business model that will be appealing and sustainable for the next generation.'

Background

Tim and Stacey Morton are part of a large family run operation near Penshurst, just south of Hamilton, in Victoria's Western District. Historically the business has sat at around 70% Corriedale sheep and 30% Angus cattle. They lamb in July/August and wean early November, with lambs run on summer crop through to sale from late December to February. Most lambs are sent as a trade weight 22kg carcase direct to processor. Their cattle calve in May/June and wean in February/March. Weaners are typically held until October/November, with around 70% sold into the feeder market and the remainder finished for a grassfed market.

Recently, the Morton family decided to make significant changes to their business model. Ten years ago, the business was making $40–$50/fleece, but as the Australian wool market experiences prolonged lows, sales have decreased to around $10/fleece. Consequently, the sale of wool struggles to cover the cost of shearing. This, combined with an increasing cost of production and the lower lambing percentages typically achievable with the dual-purpose Corriedale breed, the Morton family realised their sheep enterprise was soaking up their labour whilst scarcely making a profit. In addition, they were not finding the sheep work particularly enjoyable yet were drawing much greater satisfaction, and profit, from cattle work. Tim and Stacey therefore made the decision to switch from a 70% sheep to a 70% beef cattle operation. Not only will this improve the profitability of their enterprise, but by reducing labour requirements they also hope to spend more time with their young family. One of their main goals is to be able to hand a financially viable farm operation to their children, should their children decide to pursue a career in farming. As part of making these changes viable and profitable, the Mortons decided to get involved with the MacKillop Farm Management Group's PDS project, 'Post-weaning management strategies in beef herds', to improve the management of their weaner cattle.

Weaning strategies

Previously calving in May/June, the Mortons have found limited flexibility in their ability to sell cattle when seasonal conditions are unfavourable, leading to high supplementary feed requirements throughout calving. For this reason, they decided to change to a mid-July/August calving. They plan

to wean in February – allowing family holiday time in January – with flexibility to move it forward into January or even December should seasonal conditions demand.

In the past, the Mortons would hold weaner calves in the cattle yards overnight prior to letting them into a holding yard with ad lib hay for one week. After this time calves were processed through the yards to be weighed and receive a 7-in-1 booster vaccination and drench. They then went out to finish any paddock feed available before being supplemented with hay until adequate feed was available after the autumn break. Weaners typically weighed an average of 330kg for steers and 300kg for heifers and gained around 300g/day throughout February to April. Depending on the arrival of rain, they would stagnate for six weeks through May as the autumn flush came through before slowly increasing growth rates up to 2kg/day with compensatory growth in September. Whilst the Mortons were weighing calves and getting feed testing done on hay and pasture, they were not utilising this data to make management decisions.

Throughout the course of this PDS, the Mortons have refined their weaning process. Calves are now held in the yards for a minimum of three nights, with ad lib silage or vetch hay available as well as pellets. They are handled twice daily during this period, using low stress handling techniques. Tim and Stacey have been trialling different post-weaning management strategies including silage, silage and pellets, summer crop, sorghum and early weaning onto clover and ad lib pellets. Results have been varied, with growth rates of around 650g/day on summer crop (Pillar) yet closer to 1kg/day on silage and pellets.

Early weaning as a management tool

In September 2024, the PDS project held an information day discussing the intricacies of early weaning as a management tool in a tough season. Determining the most appropriate time for weaning depends on a variety of factors, including time of calving, seasonal variations, feed availability (both pasture and supplementary), options for sale, and labour availability. The PDS focused on maintaining flexibility around the time of weaning as a management tool under difficult seasonal conditions.

While dairy cows convert forage energy into milk at an efficiency of about 60%, it is highly probable this figure is lower in beef cows. Pre-ruminant calves convert milk to liveweight gain at an efficiency of approximately 90%, however as their rumen develops this efficiency will drop to as low as 63%. This change from simple digestion in the abomasum to a more mature ruminant has generally occurred by the time the calf is two to three months of age. Put simply, the conversion of forage energy consumed by the cow into calf liveweight gain will decrease in efficiency from 54% at birth to 38% at two to three months of age. Therefore, it is more efficient to feed a calf directly than to feed a cow to feed a calf three months old or more with milk.

Weaning early can minimise supplementary feed requirements, which in a tough season can be a hugely beneficial management tool. Furthermore, the cow calf unit will drink about 50L per day more than the pair if separated, which becomes an important factor to consider in these tough seasons depending on water availability. Weaning early can also increase marketing flexibility, allowing the sale of non-productive or cull cows earlier and in better condition. Getting rid of these cows early allows better pasture to be allocated to calves, or cash flow may facilitate the purchase of higher quality supplementary feed to maximise growth potential of weaners. Maintaining flexibility in the timing of weaning can also help sustain a more optimal body condition in breeding cows.

Whilst true early weaning is typically considered a minimum of three months of age and 130kg liveweight, in a lot of southern farming systems it is not unusual for calves to be weaned at nine months of age or older. Consequently, for the purpose of this case we are not necessarily describing true 'early' weaning but rather utilising an *earlier* weaning as a tool to help get through a tough season.

In 2024 the Western District of Victoria experienced extraordinarily dry conditions throughout autumn and winter. With their late autumn calving system, Tim and Stacey found themselves calving onto minimal paddock feed. Without an autumn flush of feed coming through, they were heading into winter with cattle in peak lactation and consequently extreme supplementary feed requirements to maintain condition of their cows. Spring forecasts were also looking unfavourable. With lush clover in early spring from the little rain they did get, the Mortons made the decision to wean earlier than usual for their enterprise. This allowed them to prioritise the feed on the ground for calves and maintain condition on their cattle with lower supplementary feed requirements.

Tim and Stacey weaned half of their calves early, at four to five months of age and with an average weaning weight of 150kg. After yard weaning, these calves went onto fresh clover pastures with between 2000–3000kg DM feed on offer (FOO). The calves had access to vetch hay and ad lib pellets in feeders, however they did not eat any significant amount of either supplementary feed until paddock feed was largely utilised. The calves gained around 500g/day throughout the entire period.

The Mortons were pleased with their decision to wean early given the seasonal conditions. Their cattle maintained excellent condition, joined well and are in great condition (BCS 3.5–4/5) coming into calving in 2025. They did not need to start supplementary feeding mature cattle until mid-April 2025, which is later than would have been expected given the continued dry conditions in the Western District. The biggest challenge found with an early weaning was increased calf losses, at 2.5% as opposed to their normal losses which sit below 1%. Unfortunately, these losses were quite random, experienced over an eight-week period and of animals of varying weights, and consequently no post-mortem examination was undertaken. Moving forward, Tim and Stacey plan to wean at around six months of age as a routine, utilising earlier weaning as a management tool when seasonal conditions are below average.

Figure 1 – Early weaning group session at the Mortons' farm looking at weaned calves on clover

Benefits of being involved in the PDS project: Post-weaning management strategies for beef herds

Over the course of this PDS project, participants heard presentations from livestock nutrition advisors to improve knowledge around the nutritional requirements of weaners and the different options for meeting these requirements. Interpreting and utilising feed test results was a key focus. The Mortons have used this information to make informed decisions when planning different post-weaning management strategies. It has allowed them to utilise data they were already collecting to understand potential outcomes and make managerial adjustments for the best chance of success. The benefits of this were most noticeable in the failed autumn of 2024, when the Mortons planned an early weaning to best manage their cattle through the difficult seasonal conditions.

One of the most valuable sessions for the Morton family was the stock handling session held with Dr Lachlan Strohfeldt of Livestock Production Vets. This session focused on minimising stress at weaning through handling and educating livestock during yard weaning. Not only does this have significant animal health and production benefits, it allows for safer handling throughout an animal's life, resulting in notable work health and safety (WH&S) advantages. While the Mortons have always practiced some low stress stock handling techniques and valued the importance of educating cattle at the time of weaning, this session was found to be a great refresher and encouraged the family to reprioritise time spent with weaner cattle and upskill those who didn't have the necessary experience.

The Morton family found great value in being involved in the MacKillop Farm Management Group's 'Post-weaning management strategies for beef cattle' PDS, particularly at a time when significant changes are being made and are grateful to have had the opportunity. Tim and Stacey feel they are now doing a better job with both their weaners and their heifers, as well as being better equipped to make management decisions around weaning strategies moving forward.

Key messages

1. **You don't know what you don't measure!**

- Collecting data, keeping good records and taking consistent measurements will be crucial to inform decision-making.

2. **Nutrition, nutrition, nutrition!**
   - Allocating feed to different classes of livestock will minimise the need for supplementary feeding. This year the Mortons are three to four months ahead of where they were last year, simply by implementing changes in where they have dedicated feed resources.
3. **Low stress handling has significant benefits.**
   - The benefits of low stress stock handling and weaner education have been emphasised throughout the course of this PDS, including animal health and production and long-term ease and safety of handling.

Appendix 22: Communication plan

Communications Plan: Producer Demonstration Sites

Project name: Post weaning management strategies for cattle herds L.PDS.1908

Date: 1 June 2025

Project overview

MLA Program Manager	Alana McEwan Brown (Russell Pattinson – PDS national coordinator)
Project objectives	1. Demonstrate and conduct cost benefit analysis of at least 8 local feeding strategies per year on at least 8 sites for weaner cattle management, from 1 weaning until 6 weeks post autumn break, using an industry standard cost benefit calculator. Local strategies may include dryland pasture, irrigated pasture/crops, lucerne, fodder crops, stubble, grain supplementation and/or containment, in keeping with the management of individual farms. Each site will choose the strategies to be trialled each year, based on the feed available and the most suitable feeding method for each farming business. 2. Assess the impact of different post weaning strategies on joining weight and conception rate of heifers by measuring: a. Growth rate from 1 week post-weaning until 6 weeks post autumn break b. Conception rate at pregnancy testing 3. Assess the impact of different post-weaning strategies on growth rate, turnoff time and carcass and animal value by measuring a. Growth rate from 1 week post-weaning until 6 weeks post autumn break b. Days from weaning until sale c. Carcass or animal value at sale 4. Assess feed value and feed on offer of each management strategy
What are the 'outcomes' for producers?	1. Undertake a comparison of different post weaning management strategies for cattle to identify which strategies result in the highest growth rates within an enterprise to ensure target joining and turn off weights are met 2. Ability to evaluate, measure and determine the most cost-effective post weaning management strategies 3. Improved livestock and pasture management skills 4. Understand the importance of undertaking an economic analysis
Measure of success of communication plan and/or activities (KPIs and how measured)	1. 100% of core producers understand and evaluate their current post weaning management and growth rates 2. 100% of core producers identify strategies to improve current post weaning management and growth rates 3. 100% of core producers adopt the most cost beneficial post weaning management strategies for their beef cattle enterprise 4. 50% of observer producers who attend a field implement or plan to implement changes to their current post weaning management strategies.

Primary audience (include regions/species)	Primary audience is beef cattle producers in the Limestone Coast of South Australia and the Western District of Victoria. Weaner cattle are the target stock class.
Secondary audience (include regions/species)	Secondary audience are beef cattle producers in the southern Australian high rainfall zones.

Communications Plan / Activities

Activity	Responsibility	Target Audience	Key messages and must-have elements	Timing	Estimated reach
Article	Robyn Terry	Secondary MFMG newsletter, website and social media Stock Journal Ag Connect SE From The Ground Up Agritalk MLA publications and E-News	Project overview, results to date, post-weaning management strategies.	September 2020	4000 beef producers read the article
First Annual Field Day	Robyn Terry, Meg Bell and Michael Wilkes	Primary and Secondary	Project overview, results to date, post-weaning management strategies.	September 2020	40 producers attend the day
Change of staff – Initial meeting	Jo Ward	Primary	Change of staff – initial catch up and COVID update	1 March 2021	6 core producers attend the meeting
Discussion Group Session	Jo Ward	Primary	Project overview, results to date, post-weaning management strategies, nutritional requirements of weaners	16 June 2021	10 core producers attend the day
Discussion Group Session	Jo Ward	Primary	Zoom meeting – update on data collection and cost benefit analysis	1 September 2021	3 producers attend the meeting

Article	Jo Ward	Secondary MFMG Newsletter Stock Journal Ag Connect SE From The Ground Up Agritalk MLA publications and E-News	Project overview, results to date, post-weaning management strategies.	September 2021	4000 beef producers read the article
Second Annual Field Day	Jo Ward	Primary and Secondary	Project overview, results to date, post-weaning management strategies.	September 2021	40 producers attend the day
Discussion Group Session	Jo Ward	Primary	Project overview, results to date, post weaning management strategies, weaner nutrition and the basics of utilising summer crops	27 November 2021	3 core producers attend the day
Discussion Group Session	Jo Ward	Primary	Project overview, results to date, post weaning management strategies, agronomist options for filling the autumn feed gap	2 March 2022	10 core producers attend the day
Discussion Group Session	Jo Ward	Primary	Project overview, results to date, post weaning management strategies, nutritional requirements of weaners	28 March 2022	10 core producers
Discussion Group Session	Jo Ward	Primary	Project overview, results to date, post weaning management strategies, common weaner health issues	21 June 2022	7 core producers

Article	Jo Ward	Secondary MFMG Newsletter Stock Journal Ag Connect SE From The Ground Up Agritalk MLA publications and E-News	Project overview, results to date, post-weaning management strategies. Yard weaning and weaner education.	December 2022	1000 beef producers read the article
Technical Session	Jo Ward, Meg Bell, Indi Lamond	Primary and Secondary	Project overview, results to date, post-weaning management strategies. Yard weaning and weaner education	September 2022	24 producers attend the day
Discussion Group Session	Jo Ward	Primary	Project overview, results to date, post weaning management strategies, ruminant nutrition	17 April 2023	6 core producers attend the day
Discussion Group Session	Jo Ward, Indi Lamond	Primary	Project overview, results to date, post weaning management strategies, agronomist discussion for filling autumn feed gap and using fert to your advantage	6 July 2023	8 core producers attend the day
Article	Jo Ward, Indi Lamond	Secondary MFMG Newsletter Stock Journal Ag Connect SE From The Ground Up Agritalk MLA publications and E-News	Project overview, results to date, post-weaning management strategies.	July 2023	1000 beef producers read the article

Technical Session	Jo Ward, Indi Lamond, Meg Bell	Primary and Secondary	Project overview, results to date, post-weaning management strategies. Business Management including profit drivers, partial budgeting etc.	September 2023	46 producers attend the day
Discussion Group Session	Jo Ward, Indi Lamond, Meg Bell	Primary	Project overview, results to date, post-weaning management strategies. Statistical analysis methods and analysis of results from the project.	November 2023	10 producers attend the day
Technical Session	Jo Ward, Indi Lamond, Meg Bell	Primary and Secondary	Project overview, results to date, post-weaning management strategies. Selection of Bulls to enhance genetic gain and bull health.	January 2024	22 producers attend the day
Discussion Group Session	Jo Ward, Meg Bell	Primary	Project overview, results to date, post-weaning management strategies. The intricacies and options of early weaning.	September 2024	15producers attend the day
Discussion Group Session	Jo Ward, Meg Bell	Primary	Wrap up, presentation and discussion of project results	June 2025	
3 Case Studies	Jo Ward, Meg Bell	Primary and Secondary	Comparison of different post weaning management strategies for cattle in individual cattle enterprises.	June 2025	1000 beef producers read the case studies

Podcast	Jo Ward, Meg Bell	Primary and Secondary	A podcast episode will be produced by the end of the project, promoting the outcomes of the project and telling the story of one of the group members and their involvement with the project.	April 2025	100 beef producers listen to the podcast episode
Video	Jo Ward, Meg Bell	Primary and Secondary	A 5 minute video will be completed by the end of the project, promoting the outcomes of the project.	June 2025	1000 beef producers watch the video