

FEED365 – Reducing supplementary feeding

Hosts: Green Range - Lester Family, Mt Barker - Slade Family, Mt Barker - Mackie Family.

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KEY MESSAGES:

- The project aims to investigate livestock forage systems to create all-year-round grazing opportunities with minimal supplementary feeding.
- Two demonstration sites we established in 2023, one in Mount Barker and the other in Green Range. Only the Mount Barker site was measured, Green Range was not grazed due to dry conditions.
- The Mount Barker demonstration compared autumn grazing of a spring-sown winter canola paddock (control) with grazing of a similar winter canola over sown in autumn with Maximus Barley (treatment).
- Grazing of the winter canola and barley mix, resulted in increased liveweight gain, compared with grazing of the winter canola only.
- Confinement feeding before the break of season is less profitable because pasture is not being deferred.

Background

The Feed365 project is part of a portfolio of projects established under the SheepLinks Program, co-funded by Department of Primary Industries and Regional Development (DPIRD) and Meat & Livestock Australia (MLA) to support the WA sheep industry.

The project is investigating livestock forage systems for grazing all-year-round in Mediterranean environments, environments that are being challenged by climate change with increasingly hotter, drier, and more variable seasons. The goal is to create innovative, resilient, low-risk systems, allowing growers to maintain or increase livestock returns with minimal supplementary feeding, in the face of a variable and drying climate. Key to the project is evaluating a range of commercial forage treatments (annual, perennial, grass, legume), and the measurement of animal performance data at a farm level.

The project aims to develop a partnership between growers, scientists, and extension workers to develop and test new feed base options and integrate them into grazing systems.

Stirlings to Coast Farmers involvement in the state-wide

project includes establishing and maintaining paddock-scale demonstration sites of selected forage treatments that are used to fill critical feed gaps and to collect sheep performance data (liveweight change, condition score, grazing days). The project commenced in 2023 and will run throughout 2024 and 2025.

Methodology

Two paddock-scale demonstrations will be established each year of the project. Each site will test various pastures and forage plants against what the host producer would typically be doing i.e., a treatment paddock and a control paddock, or parts thereof. This will be done to gauge what will best suit producers in the Albany Port Zone to assist in reducing supplementary feeding.

The following pasture and stock measurements will be taken for each site for both the treatment and control paddocks (and corresponding mobs of sheep):

- Pasture nutritive value
- Pasture dry matter cuts, pre & post grazing
- Sub-sample livestock weight gains and condition scores, pre & post grazing

Each site will ensure that 'Animal Ethics Committee' (AEC) approval is given prior to commencement.

Site One - Mount Barker - 2023

Site one, Mt Barker, which was a paddock of 120ha in size, was sown with Clavier winter canola in September of 2022. The paddock was then over sown with Maximus Barley in March 2023 at a rate of 30kg/ha. A nearby control paddock of straight Clavier winter canola was used as the control paddock (producer standard practice).

Site two - South Stirlings - 2023

Site two, South Stirlings, consisted of two 40ha paddock of which one (the treatment paddock) was divided into two, to enable two treatments to be investigated. The treatment paddocks were sown on the 31 August 2023 (with waterlogging delaying an earlier sowing).

Treatment one (20ha) was sown with a mix of base ryegrass at 20kg/ha, chicory at 1kg/ha and red clover at 8kg/ha. Treatment two (20ha) was sown with a mix of base ryegrass at 20kg/ha, chicory at 1kg/ha, strawberry clover at 4kg/ha and white clover at 1kg/ha. The control paddock (40ha) consisted of ryegrass and Balansa clover which was over sown with Illabo wheat on the 24 April 2023.

Results 2023

Site One - Mount Barker

Lambs began grazing the treatment and control paddocks on 2 June 2023, for 26 days, and were removed on the 28 June on both paddocks. The treatment paddock hosting 495 lambs and the control 452 lambs.

Pasture cuts were taken prior to the area being grazed on the 30 May 2023 to determine biomass. The Canola and Maximus Barley treatment had more biomass than the control (Canola only) prior to grazing (Table 1). The second dry matter cuts were taken on the 12 July 2023. Post grazing, both treatments showed decreased biomass, as expected. The control, by 112.5kg/ha and the Canola and Barley by 213kg/ha.

Table 1: Site one, Mt Barker - Dry Matter cuts (average t/ha).

Site one - Mt Barker	30/05/2023	12/07/2023
Canola	0.8625 t/ha	0.75 t/ha
Canola & Maximus Barley	1.375 t/ha	1.1625 t/ha

Nutritive value analysis was performed on these cuts by

Feed Test, Werribee VIC. Given there was ample feed available in both scenarios throughout the whole grazing period, it is likely that the addition of the barley was driving the nutritional benefit (Table 2). The nutrient value analysis shows that the main differences between the two feed sources were crude protein and fibre. The addition of the barley resulted in a better balance of protein and fibre in the feed source, a factor that was likely the driver of the increased productivity on the lambs.

Table 2: Site one, Mt Barker - Nutritive Value Analysis.

Determinant	Control: Canola	Variable: Canola + Maximus
Dry Matter	16.5%	15.9%
Moisture	83.5%	84.1%
Crude Protein	26.0% of dry matter	18.5% of dry matter
Acid Detergent Fibre	12.3% of dry matter	13.3% of dry matter
Neutral Detergent Fibre	19.9% of dry matter	22.7% of dry matter
Digestibility (DMD)	88.9% of dry matter	87.7% of dry matter
Digestibility (DOMD) (Calculated)	82.1% of dry matter	81.1% of dry matter
Est. Metabolised Energy (Calculated)	13.7MJ/kg DM	13.5MJ/kg DM
Fat	6.0% of dry matter	5.8% of dry matter
Ash	11.8% of dry matter	11.6% of dry matter

Live weight gains, class, and condition score were taken on all lambs before entering both paddocks and when being removed to compare growth rates. There was a significant increase in the recorded average live weight gain (Figure 1) and condition scores for the canola and barley mix (treatment) in comparison to the canola only (control).

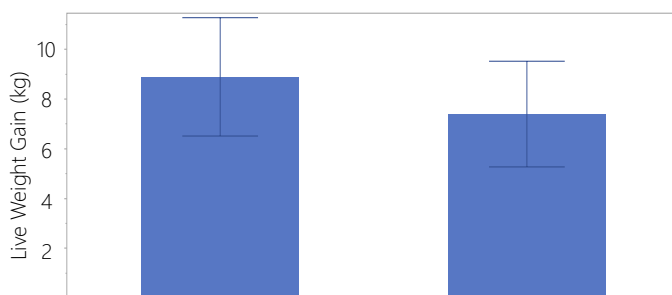


Figure 1: Site one, Mt Barker - Live weight gain vs treatment.

Site two - South Stirlings

Due the season unfolding as it did between August 2023 and now, the second site is yet to be grazed.

Conclusions

The first year of the project showed the treatment paddock (winter canola over sown with Maximus barley) to be more productive in comparison with a straight winter canola pasture type. This was ultimately supported by the live weight gain and condition score results produced. The project will continue in 2024, with another two demonstration sites implemented and the continuation of the South Stirling site (two).

Acknowledgements

Stirlings to Coast Farmers would like to acknowledge MLA and DPIRD for the joint funding of this project.



Field walk, Lester Family Farm, Green Range, September 2023.



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