Feed365 – feeding sheep with pasture 365 days of the year

Mackie Family, Mount Barker

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Key Messages

- The 2024 demonstration compared a pasture sown to Wonambi triticale, cereal rye, Saia oats and Margurita serradella (treatment) to a more standard pasture of Williams oats, ryegrass and sub clover (control).
- The treatment pasture produced marginally more biomass than the control pasture, however, overall nutritive value was better in the control pasture.
- The project will continue into 2025 with demonstration sites planned for the Takalarup area.

BACKGROUND

The SheepLinks/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 investigates 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.

SCF, as a collaborative partner, has been working with local farming members to demonstrate alternative combinations of forages on a paddock scale, targeting the autumn feed gap. The SCF component of the project is coming into its third and final year in 2025 with the results from the 2024 demonstration reported in this article.

METHODOLOGY/TREATMENTS

The demonstration sown in 2024 was located in a 6 ha paddock in Mount Barker. The starting pasture base consisted of mixed sub clover and ryegrass. This paddock was divided into two, with the treatment half (3 ha) over-sown with Wonambi triticale, cereal rye, Saia oats and Margurita serradella in June 2024 at a rate of 40kg/ha each for the cereals and 5kg/ha for the serradella. The remain 3 ha (control) was over-sown with Williams oats, ryegrass and sub clover on the same day at a rate of 40kg/ha oats, 20kg/ha ryegrass and 1kg/ha sub clover.

Initially, the first grazing was planned to commence 28 June 2024 so pasture measurements were taken prior to this date, on the 24 June. However, grazing was delayed due to seasonal conditions resulting in reduced pasture growth. Pasture cuts, samples for feed NV testing and species composition measurements were taken again on the 29 July, prior to ewes grazing.

After the measurements were taken, 50 ewes commenced grazing both the control and treatment pasture (25 in each 3 ha) on 5 August 2024, with the plan to remove the ewes once the paddocks (treatment & control) no longer supported the animals to avoid over grazing. The 50 ewes initially used in the trial had their live weight, class, and condition score recorded prior to entering both paddocks.

This was completed early (on the 19 June 2024) at pregnancy day 120 for welfare reasons. The first lamb was dropped on the 28 June 2024.

On the 30 August there was still adlib feed, so the dividing fence was removed and a total of 225 ewes with 338 lambs at foot crash grazed the demonstration site and were removed on the 16 September 2024.

RESULTS AND DISCUSSION

Nutritive Value Analysis

The nutritive value samples that were collected from the site on 29 July 2025 showed the treatment pasture (Wonambi triticale, cereal rye, Saia oats and Margurita serradella) to have an overall slightly lower nutritive value result than the control pasture (Williams oats, ryegrass and sub clover)(Table 1). The control pasture also had a slightly higher crude protein, lower neutral detergent fibre and higher metabolisable energy contributing to a slightly better nutritive value all round.

Table 1 - Site three, Mt Barker - Nutritive Value Analysis

Determinant	Control: Williams oats, rye-grass and sub clover	Variable: Wonambi triticale, cereal rye, Saia oats and Margurita serradella
Dry Matter	9.5%	9.1%
Moisture	90.5%	90.9%
Crude Protein	26.4% of dry matter	22.3% of dry matter
Acid Detergent Fibre	19.6% of dry matter	21.9% of dry matter
Neutral Detergent Fibre	39.4% of dry matter	44.0% of dry matter
Digestibility (DMD)	74.8% of dry matter	72.2% of dry matter
Digestibility (DOMD)(Calculated)	70.2% of dry matter	68.% of dry matter
Est. Metabolised Energy (Calculated)	11.2MJ/kg DM	10.8MJ/kg DM
Fat	5.9% of dry matter	6.0% of dry matter
Ash	12.3% of dry matter	11.6% of dry matter

Dry Matter Cuts

Early biomass pasture cuts showed the treatment pasture to have slightly higher biomass (t/ha) than the control (Table 2). Later biomass pasture cuts showed a similar result with the treatment pasture again having slightly higher biomass. Unfortunately, post grazing biomass was not collected as the total demonstration site (dividing fence removed) was crash grazed by a total of 225 ewes and 338 suckling lambs.

Table 2 - Dry matter cuts (average t/ha) for site 3 in Mt Barker

	24 June (early biomass)	29 July (pre grazing)
Control	0.261 t/ha	1.328 t/ha
Treatment	0.322 t/ha	1.508 t/ha

Pasture Composition

Pasture composition data was collected on the 29 June using the quadrat method showed a dominant species in both pastures (treatment & control) to be broadleaf weeds (Table 3). Interestingly, desirable grass was higher in the treatment pasture (even through oats and ryegrass had been sown into the control) and legume higher in the control pasture.

Table 3 – Pasture composition (% cover estimate) for site 3 in Mt Barker

% cover estimate	Trial	Control
Legume	6	23
Desirable grass	42.5	26.5
Broadleaf weed	41	44.5
Grass weed	2	4
Litter	0	0
Bare ground	8.5	2

Photo 1. Pasture Composition - Control 44.5% broadleaf weeds and 26.5% desirable grasses.

Photo 2. Pasture Composition - Treatment 41% broadleaf weeds and 42.5% desirable grasses.

Live Weight Gains & Condition Scores

On the 19 June 2024, weight and condition score were recorded for the 50 ewes that entered the demonstration site on the 5 August. This was done early for welfare reasons as the ewes were yellow tag twin bearers. Unfortunately, as the ewes were pregnant at the time of initial weighing, post weights were not recorded as these would have been somewhat meaningless with lambs having dropped. Also, ewes with lambs at foot could not be weighed in yards for welfare reasons.

CONCLUSIONS

The initial biomass cuts and nutritive value samples collected from both the treatment and control pastures showed that there was a compromise to be made between quality and pasture biomass. The treatment pasture had an overall lower nutritive value; however, biomass production was slightly higher. This was shown to be the reverse for the control pasture.

The project will continue to run in the 2025 season with two demonstration paddocks planned for the Takalarup area (hosted by the Pieper Family).

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