

Alternate forage crops for Southern WA

Is there value in Winter Wheat compared to Ryegrass/ Clover pasture in filling cattle farming systems feed gaps in HRZ of Western Australia?

In the high rainfall zone of Western Australia there has been a noticeable increase in the frequency of summer rainfall. This presents an opportunity for producers to utilise this to fill long-standing feed gaps in their farming systems in this period of time. This Producer Demonstration Site looks to compare winter wheat and ryegrass/clover pastures in regards to their feed value, and stocking rates and live weight gain of beef cattle grazing these forages and pastures.

In 2022, 25.5ha of ryegrass/clover pasture was grazed with 35 yearling steers and compared to 85ha of DS Bennett winter wheat grazed with 210 yearling heifers on Tim Metcalfe's property in the Porongurups, Western Australia.

"Ideally, the cattle grazing the two treatments should have been of the same class," Tim said. "I thought these animals would have been okay to compare against each other in this trial but it highlights the difference that sex and genetic variation can play in an animal's growth and this difference should be kept in mind when comparing the results."

Winter wheat was chosen as the comparison at this site because it is suited to the high rainfall zone and is a great alternate feed source. Advantages of DS Bennett include higher biomass production which in turn supports higher stocking rates compared to traditional annual pastures. Sowing winter wheat early for early grazing opportunities can allow farmers to defer grazing on germinating pastures.

In the previous year the site host trialed sorghum and compared it to senesced ryegrass with excellent results Tim was keen to try something else to see if an alternative forage could give the same results.

Is alternate admissible?

Biomass cuts of the clover rye pasture equated to 1.86t/ha across the 25.5ha and the DS Bennett wheat averaged just over double at 3.88t/ha across 85ha. Nutritive value samples showed both feed sources

were relatively comparable with the DS Bennett being of slightly higher quality (Table 1). This extra biomass and quality allowed the DS Bennett to support a higher stocking rate of 2.5 heifers/ha, compared to the 1.4 steers/ha on the clover rye mix.

Table 1: Nutritive Value analysis of forages over the two years.

NV Analysis	Ryegrass / Clover	DS Bennett
Crude protein (% of DM)	20.0	21.7
Digestibility (DMD) (% of DM)	71.1	84.3
Est. Metabolisable Energy (MJ/kg DM)	10.6	12.9

Table 2: Stocking rates and average weight gain of cattle over the two years.

NV Analysis	Ryegrass / Clover	DS Bennett
Stocking Rate (yearling cattle/ha)	1.4	2.5
Weight gain (Avg kg)	74	48
Total weight gain (kg/ha)	101.2	118.4

Despite the positive feed quality and biomass quantity, this was not reflected in the weight gain of the cattle when comparing the average weight gain per animal. Yearling cattle gained 74kg on average on the ryegrass pasture and 48kg on average on the winter wheat (Table 2). When compared in kg/ha/day the alternate forage performed slightly better with a 0.43kg/ha/day difference between the clover rye pasture and winter wheat.

"One of my favourite aspects of DS Bennett wheat was the versatility and range of options it gave," Tim said. "I took full advantage of this diversity and cut 17 ha for silage which yielded 290 rolls at approximately 700kg each (12t/ha). The remaining 68 ha were taken through to harvest, with an average yield of 3.6t/ha."



Table 3: Yearling cattle live weight gains and calculated profit over the two years.

Description	Ryegrass / Clover	DS Bennett
Weight gain (kg lwt) per cattle	74	48
Average weight gain (kg/head/day)	1.85	1.2
Profit (calculated per ha)	\$498	\$583
Additional Profit (calculated per ha)		\$1292

Table 4: Other revenue from the Winter Wheat

Other revenue	\$
290 rolls silage @700kg each on 17 hectares valued at \$110 per roll minus \$35 cost for mowing, baling, and wrapping	21,750
3.6t/ha grain on 68 hectares valued at \$360 per tonne	88,128

Is it financially viable?

When comparing the two forages in profit per ha, the DS Bennett outperformed, with an extra \$85.00 per ha as well as additional revenue from the grain & silage (Table 3).

Alternate forage options require producers to consider the risks and rewards, and this study aims to help local producers better calculate these to consider their options in future years.

At the conclusion of the study, Tim Metcalfe was very happy with the results on the DS Bennett. The heifers were able to be finished and the stocking rate the DS Bennett was able to support allowed him to defer grazing on winter pastures, allowing them to get away.

This Producer Demonstration Site was run by Stirlings to Coast Farmers, with technical support from consultant Lucy Anderton for economic analyses.

Takeaway messages for producers from the PDS include:

- Winter wheat produced more than double the biomass (3.88t/ha across 85ha) compared to the clover rye pasture (1.86t/ha across 25.5ha).
- Total livestock weight gain was 17.2kg/ha higher on the DS Bennet compared to the clover rye pasture.
- DS Bennet benefits extend beyond grazing to include future grazing opportunities, silage/hay production or taking grain through to harvest. This adds to the profit of including the winter wheat in the farming system over and above the grazing value alone.

