

Perennial vs annual pasture performance

Farm details:

- Will Stanton
- Timber Creek Road,
MacGillivray
- Rainfall: 550mm
- Soil type: Sandy loam over clay
- Soil pH_{CaCl2}: 4.8 (0–10cm), 4.4 (10–20cm).
- Colwell P: 42 mg/kg
- Phosphorous Buffering Index (PBI): 125
- Livestock: Cattle

Why the comparison was done

During the 2025 growing season, with the assistance of Tim Prance from T Prance Rural Consulting, the performance of a perennial phalaris pasture (Top paddock) was compared with an unimproved annual pasture (House Trial paddock) using a rising plate meter. There were five assessments taken throughout the growing season from June to November 2025.

The perennial pasture in the Top paddock was sown in May 2020 to a mix of Holdfast GT Phalaris, Yanco and Monti sub clover and Endurance plantain. Only the occasional plantain plant remained in the sward in 2026. The density of the phalaris was around 10 plants per square metre.

The first assessment on the 3rd June 2025, was taken at a time of tight feed when SA (and Kangaroo Island) was in drought. By this time, the paddocks had received 97mm in April and May according to neighbours rainfall record.

Winter feed and growth performance

3 June 2025	
Paddock	Total grown (kg DM/ha)
Perennial	930
Annual	440

Perennial advantage: 490kg DM/ha

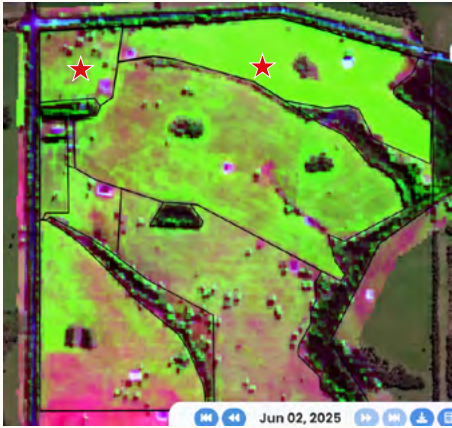
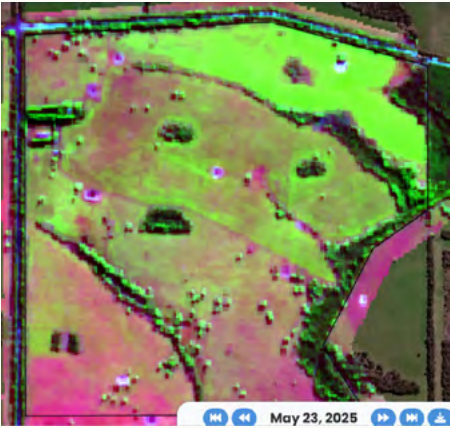


Image: Cibo labs satellite imagery taken 10 days apart. Red stars show where the pasture was measured on 3rd June 2025.

The Top Paddock, which is the bright lime green paddock which runs along East West One Highway, had an average dry matter of 930kg/ha.

Meanwhile the annual pasture (sub clover, annual grasses and capeweed) in the House Trial paddock to the left of the Top paddock contained 440 kg/ha. Photos can be seen at the back of the report.

At the time, hay landed on KI was costing ~\$650/t delivered. That means the extra perennial feed was worth approximately \$318 per hectare in early June alone.

Importantly, pasture ME (~12 MJ/kg DM) would exceed purchased hay (~9 MJ/kg DM).

Pasture growth summary tables

TABLE 1: Pasture growth rate per period (kg DM/ha)

Date	Annual	Growth rate /day	Phalaris	Growth rate /day
3 June	440		930	
16 July	1485	30	1785	32
17 August	2450	30	2940	59
11 September	4400	78	5830	159
27 November	3500	0*	3500	40

*Pasture had senesced in October so there was no additional growth.

As can be seen in Table 1, in early winter, the growth rates were fairly similar, but by mid winter phalaris jumped ahead strongly. In mid-late August to early September growth was explosive - annuals peaked at 78 kg DM/ha/day, whilst phalaris peaked at 159 kg DM/ha/day.

TABLE 2: Total pasture grown over whole period (June-Nov 2025)

Paddock	Total grown (kg DM/ha)
Annuals	4651
Phalaris	9601

Extra feed from perennial pasture: 4950 kg DM/ha.

Why did the perennial system win?

- ✓ **1. Early Base Feed** – To achieve high winter pasture growth rates especially with a late break, a dense pasture containing both sub clover and phalaris is required. The phalaris maintained a living root over the summer/autumn period and thus was quicker to get away once it rained.
- ✓ **2. Synergy** – The clover and phalaris are a match made in heaven – the clover supplies the nitrogen which enables the phalaris to thrive.
- ✓ **3. Stability** – A perennial grass such as phalaris provides stability to the pasture composition by maintaining ground cover over summer/autumn and competes with capeweed and winter grass/silver grass in winter.
- ✓ **3. Recovery** – The pasture was allowed to rest between grazing, allowing it to refuel its reserves.



Management principles that drive performance

- ✓ **Dense phalaris base** (~10 plants/m²) and sub clover.
- ✓ **Maintain adequate soil P** to optimise clover production.
- ✓ **Soil pH toward >5.5 (water)** to 20cm depth.
- ✓ **Graze sub clover to 5–6cm in spring** to maximise seed set. This maximises the production of underground buds from phalaris making the plants larger going into summer and the following autumn.
- ✓ **Back off grazing once soil dries out** and maintain 100% ground cover over summer/autumn.
- ✓ **Defer grazing following the opening rains** until the clover has 2-3 true leaves

3 June 2025

Perennial: 930kg DM/ha.



Annual: 440kg DM/ha.



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Pasture utilisation

Total amount of pasture removed by grazing excluding wastage:

Perennial 2913 kg/ha = 30% total grown

Annual 503 kg/ha = 11% total grown

The remainder of the pasture (70% in the case of the perennial and 89% in the case of the annual) was carryover dry feed or wasted during grazing.

Target utilisation is 50%, indicating there is still room for improvement even in a well-managed perennial pasture.

16 July 2025

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Perennial: 1785kg DM/ha.



Annual: 1485kg DM/ha.



11 September 2025

Perennial: 5830kg DM/ha.



Annual: 4400kg DM/ha.



27 November

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Perennial: ~3500kg DM/ha.



Annual: ~3500kg DM/ha.



Take home messages

- ✓ **The perennial phalaris pasture produced nearly 5t DM/ha more feed than annual pasture**, in a 200mm below-average rainfall year (352mm total).
- ✓ **The strong perennial base gave rise to earlier growth** with the opening rains.
- ✓ **Management matters** – soil fertility, pH and correct grazing timing drive performance.

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Australian Government



Contact

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