

Improved perennial pastures for Kangaroo Island

Background

Refer to the 2010 KI Trials booklet for more detail on the trial establishment and cultivars.

Three replicated pasture trials were successfully established in May 2009 on the following properties

- Merv and Marilyn Tremaine, Playford Hwy, Parndana
- Dale Paxton, Harriet Road, Vivonne Bay
- Simon Murton, Johncock Road, Middle River

The trials have been assessed for plant density (perennial plants/m²) and plant size/vigor (% basal cover) in late summer 2010 and 2011, and again in 2012 (Tremaine's only). The 2010 and 2011 results were summarized in the 2011 KI Trials booklet

All trial paddocks have been rotationally grazed since establishment, and have been fertilized annually.

Following an inspection in June 2011, Paxton's site was abandoned, as the remaining perennial species in this trial (Fletcha tall fescue) had disappeared. The sub clover cultivars at Paxton's site can still be monitored in future years.

At Murton's site, observations were made during 2011, but no measurements taken. This site will be monitored in future years.

Total dry matter production from the perennial grasses at Tremaines was measured in September and December 2011.

Results – Tremaine's site

Cocksfoots. Plant numbers/m² of the European cocksfoots (summer active) Porto, Lazuly, Vision and Megatas have dropped an average 66% since May 2010 (all varieties similar), but plants are tending to become larger (basal cover increasing). On the other hand, plant numbers/m² of the summer dormant (supposedly more drought tolerant) Mediterranean cocksfoots (Uplands and Sendace) have dropped 81%, with basal cover also decreasing.

Perennial ryegrass (One 50 with the AR1 novel endophyte) has almost completely dropped out (after three summers).

Fletcha Tall Fescue (summer dormant) is still hanging on, but plants are very small.

Phalaris. Plants still very small, with numbers declining.

Dry matter production August 2011

All European cocksfoots were similar averaging 32 kg/ha/day dm, whilst Uplands averaged 18 kg/ha/day dm. Other cultivars (inc sub clovers) were not assessed as they contained capeweed. However Gosse, Napier and Trikkala contained noticeably less capeweed than the other sub clovers.

Dry matter production in **early summer (November/December)** is presented in Table 3

There was no growth during **January and February 2012** when it didn't rain.

RESULTS

TABLE 1: Perennial pasture species

What has survived to end February 2012

	Tremaine's Site	
	Density plants/m ²	% basal cover
Porto cocksfoot	44	49
Megatas cocksfoot	29	46
Lazuly cocksfoot	37	54
Vision cocksfoot	32	48
Uplands cocksfoot	24	14

TABLE 2 Perennial pasture species

What is looking sad at end February 2012

	Tremaine's Site	
	Density plants/m ²	% basal cover
Sendace cocksfoot	7	5
Oxen cocksfoot	18	14
Fletcha tall fescue Max P	32	14
One 50 AR1 perennial ryegrass	11	5
Landmaster phalaris	12	10
Sirosa phalaris	16	5
Exeltas grazing brome	4	1

TABLE 3: Perennial grass dry matter production November/December (assessed Dec 14th)

Tremaine's site kg/ha/day

Porto cocksfoot	23
Megatas cocksfoot	44
Vision cocksfoot	34
Lazuly cocksfoot	41
One 50 AR1 perennial ryegrass	20
Uplands cocksfoot	13

A feed test sample was collected from the Lazuly cocksfoot in mid December. The sample consisted of an estimated 500 kg/ha green leaf (no stalks or dead leaf) from a total 3600 kg/ha dry matter on offer.

Results: ME = 9.8 MJ/kg, CP = 19%, NDF = 61% and dm = 31%

Discussion

Cocksfoots. After three summers, the most promising perennial grasses are the European (summer active) cocksfoots - Porto (a public cultivar) and Lazuly (Seed Force) followed by Megatas (Tasglobal seeds) and Vision (Cropmark seeds). Uplands (Tasglobal seeds), a summer dormant Mediterranean cockfoot, has not performed well at Parndana, although it has done well at Stokes Bay on a shallow stony soil.

Lazuly looks promising, with an adequate plant density, with plants that are becoming larger. Lazuly has a slightly finer leaf than Porto and doesn't appear to have become as clumpy as Porto, Megatas or Vision.

Uplands has a very fine leaf with moderately slow establishment, so a new stand is not a good weed competitor, therefore more difficult to establish. This explains why it is performing better than other cultivars at Murtons, which is very clean site, but with shallow stony soils subject to drying out in early summer.

One 50 AR1 Perennial ryegrass has dropped out of the trial site.

Phalaris cultivars along with **Fletcha tall fescue**, showed early promise, but plant size is still very small, and plant numbers are declining.

Sub clovers are still the preferred annual legume, with no other legume showing any promise for persistence and productivity. **Gosse** is a standout sub clover, with an excellent ability to compete with capeweed. **Napier** is a surprise, showing good promise for a very late flowering cultivar. **Trikkala** has also performed well.

Other promising sub clovers are **Riverina** (white seeded) and **Campeda** (black seeded).

There is nothing to recommend Arrowleaf and Persian clovers or Serradella.

Feed quality. The feed test from the best quality cocksfoot collected mid December was of only average quality, similar to kikuyu, although much better than dry annual grass.

Take home messages

- Lazuly and Porto cocksfoots are standout perennial grass cultivars, with Uplands cocksfoot showing promise for persistency in shallow dry soil environments.
- Gosse sub clover the standout annual legume, with Napier showing promise as a later cultivar. Trikkala sub clover still a good performer.

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Funding/Sponsors

- KI Natural Resources Management Board
- SA Government Community Landcare grant
- Yankalilla seeds
- Stephens seeds
- TasGlobal seeds
- Seed Force

- Cropmark seeds
- Seed Distributors
- Pristine Forage Technology