

Grain and Graze

Sub-tropical Perennial Grass Variety Trials

Aim: To determine the suitability of a range of sub-tropical perennial grasses to the medium rainfall zone of the NAR.

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Location: East Pithara, West Buntine



Background: The focus of the NAR Grain and Graze project is to increase the capacity of growers to change their rotations / systems to include perennials so that economic and environmental success is assured. This variety trial is a component of the Grain and Graze project and will be monitored for the 4-year duration of the project.

Previously, various sub-tropical perennial grasses have been found to grow successfully in the West Midlands area of the NAR, due to the combination of mild temperatures in early spring and the likelihood of rains in early autumn in this area. There have been few studies on the suitability of sub-tropical grasses in the eastern medium rainfall zone of the NAR. This trial includes a variety of the sub-tropical species that have been successful in the West Midlands (i.e. Rhodes grass, Green panic, Setaria), plus a few others that may be more suited to the Liebe area due to their reputed high drought tolerance (i.e. Bambatsi panic, Premier digit grass), as well as some newer species that have not been widely tested (i.e. Strickland finger grass and Siratro - a perennial legume).

Two sites with differing soil types were chosen; loamy soil at Pithara and a sandplain site at Buntine, to try and take into account variation in soil types within the region.

Trial Details:

Plot size and replication	16 treatments including controls with plots 7m x 3.6m with 3 replicates (Pithara), 12 treatments including controls with plots 7m x 3.6m with 3 replicates (Buntine).
Soil type	Red loamy sand (Pithara), Sand/Gravel (Buntine)
Sowing date	25/8/04 (Pithara), 26/8/04 (Buntine)
Conditions at sowing	Moderate soil moisture
Machinery	Sown with a five run experimental seeder, which has lucerne knife points at the front of a single disk opener (with wide depth wheel) followed by a press wheel. Fertiliser is deep banded in behind the lucerne point and the aim is to place the seed at a depth of about 5 mm.
Seeding rate	Varies on species and seed quality
Fertiliser	super:potash 3:1 @ 200 kg/ha at sowing
Herbicides and Insecticides	Knockdown – Roundup @ 2 L/ha
Paddock History	2004 = Cadiz

Results:**Table 1:** Establishment counts (plants/m²) taken on the 27th of October 2004.

Buntine		Pithara	
Species	Plants/m²	Species	Plants/m²
Green Panic	49.6	Green Panic	51.1
Lucerne Spring	43.7	Signal grass	47.4
Callide Rhodes	41.5	Katambora	45.9
Katambora Rhodes	37.8	Lucerne Spring	42.2
Premier Digit Grass	33.3	Callide	39.3
Signal Grass	23.0	TWG Autumn	38.5
Splenda setaria	14.0	Premier Digit	12.6
Siratro	12.6	Strickland finger	10.4
Bambasti Panic	9.6	Bambatsi	8.1
		Splenda setaria	5.2
		Siratro	3

Summary:

- Germination of half the species at each trial site was above 33 plants/m²
- Although most the species achieved this good germination many of the plants have now died or are looking very water stressed.
- On visual assessment, both the Rhodes species and Signal grass have experienced the highest survival rate and are looking the least water stressed.
- The grasses would benefit greatly from a summer rainfall event.

Technically reviewed by: Geoff Moore