

Testing pasture establishment techniques in the Desert Uplands

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Introduction

The Desert Uplands bioregion comprises 75,000 km² of grazing land in north Queensland. Sowing pasture species for pasture improvement is not common practice due to low rainfall and low soil fertility however the desire to increase productivity has producers considering a new approach. A pasture establishment demonstration has been initiated on *Stratford* located approximately 50 km south of Jericho. The aim is to determine the outcomes of broadcasting legume (and grass) seed into various seedbed preparation conditions in red sandy-loam soil typical of the Desert Uplands region.

Methods and results

Treatments implemented were considered achievable in this landscape with machinery commonly available. Five soil renovation methods with and without fertiliser were replicated twice and randomly allocated to plots (Fig. 1). Soil disturbance with a Yeomans ripper was undertaken a few days prior to planting, and Roundup herbicide (4L/ha) was applied at planting. The site was planted on the 26th of February 2025. A mix of stylo legumes (15% caatinga stylo (Primar and Unica) and 85% shrubby stylo (Seca and Siran)) were broadcasted at 3.9kg/ha, and coated Buffel grass (Gayndah) seed was included (31.2kg/ha) with the legume mix in one treatment. A soil test was taken (0-10cm layer only) prior to planting which showed low nitrogen, phosphorus, sulfur and calcium levels thus 239kg/ha of single super-phosphate was broadcasted at planting.

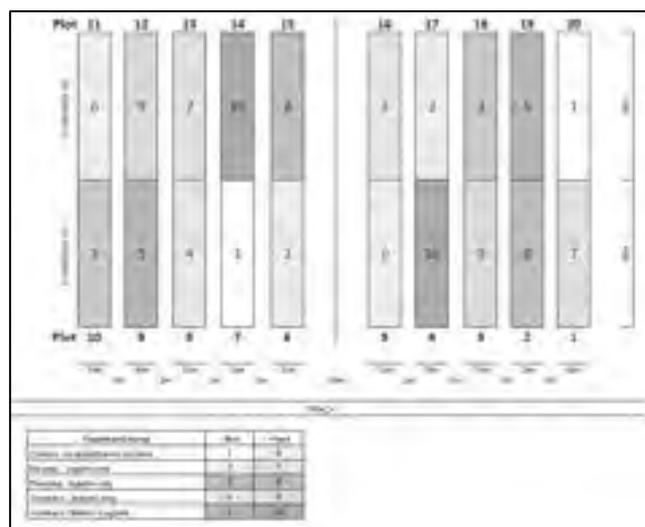


Fig. 7. Stratford demonstration design

Renovation method	Plants/m ²	
Nil, no legume	0.2	c
No prep + legume	5.4	bc
Roundup + legume	26.2	a
Yeomans + legume	19.1	ab
Yeomans + legume + buffel	33.9	a
P value	0.1	
s.e.	5.3	
s.e.d	7.5	
l.s.d	17.2	

* Values with different letters are significantly different.

Table 3. Legume population established (averaged across fertiliser treatments)

Discussion and conclusion

Despite the dry planting conditions, 160 mm of soaking rain in late March produced good plant establishment in all sown treatments. Assessments on the 19th June 2025 showed significantly higher legume population where the pasture and/or soil was disturbed (Table 1). However, no significant difference was measured between applying herbicide or ripping with yeomans plough prior to planting. The number of plants established in the *No-prep + legume* treatment was significantly lower than the other disturbed treatments, but establishment may be sufficient to generate further thickening if these plants survive to produce more seed. No impact of fertiliser on plant establishment or growth has been generated yet. Initial observations from this demonstration holds promise for the potential to increase productivity through establishing sown pastures in the Desert Uplands bioregion.

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