

Shrubby stylo grazing development trial "Carfax" - Brigalow area III – Queensland

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The more productive arable soils of the Brigalow Development Scheme are being lost to grazing following the expansion of cropping on to beef properties. As a consequence, animal productivity is being reduced to a greater extent than the reduction in grazing area indicates. Improving the productivity of non-arable country is a major concern. Such country has mainly duplex soils which are very susceptible to erosion, particularly when cleared. The development of practices which increase the productivity of this land while preserving its stability is of immediate concern.

The work reported describes the introduction of Shrubby Stylo (*Stylosanthes scabra*) into the native pasture to improve the protein level of the diet. Subsequent nitrogen transfer may also improve the quality of the pasture generally.

Methods

The unreplicated trial consists of two adjacent 100-ha paddocks in uncleared poplar box (*Fuayl. atas populnea*) savanna woodland, each paddock running twelve Brahman cross yearling steers. One paddock was aerially sown to Stylo at 1 kg/ha in December 1981, following burning. A poor initial strike led to resowing at the same rate in December 1982.

Each year since 1982, pasture yield and botanical composition have been recorded after the wet season. The Stylo populations were recorded concurrently from 400 random 0.25 m² quadrats.

Results and Discussion

From 1982 to 1984 the Stylo populations and yields increased very slowly. However since 1985 they have increased dramatically so that the population in 1986 was 1.78 plants m⁻²; the contribution to dry matter yield was 29.5%; and frequency of occurrence was 25.7% (Table 1). Dry matter yields in 1986 were 2077 kg ha⁻¹ in the Stylo paddock and 1344 kg ha⁻¹ in the Control paddock. Stylo d.m. yield of 612 kg ha⁻¹ accounts for the majority of this difference.

Table 1. Stylo populations (plants m⁻²), percent frequency and percent composition recorded each year in late summer.

Year	Population	% frequency	% composition
1982	0.12	1.3	0
1983	0.18	3.4	<1
1984	0.64	10.1	<1
1985	1.13	14.1	9.2
1986	1.78	25.7	29.5

The inclusion of Stylo in this native pasture appears to augment total pasture yield. Its population expansion is not at the expense of the major yield contributing native species although it may be replacing some of the poorer forage species.

Table 2. Annual average daily liveweight gain (g/head/day)

Treatment/year	1982	1983	1984	1985	1986
Stylo	189	567	310	509	284
Control	167	548	293	547	274

The range in weight gains (Table 2) is a reflection of the seasons. Although the stylo is palatable and being grazed, it has not improved liveweight gains. This may be due to unseasonal winter rains in the past three years. The trial is continuing.