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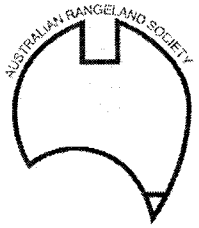

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COMPARISON OF CONTINUOUS AND CELL GRAZING ON BRIGALOW COUNTRY IN CENTRAL QUEENSLAND

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INTRODUCTION

The use of "cell grazing" (CG) systems in rangelands has attracted significant interest from Australian pastoralists. This study was conducted to compare cell grazing with the conventional continuous grazing (CT) traditionally used in the brigalow country of Central Qld.

EXPERIMENTAL WORK

The sites studied were comprised of cleared brigalow (*Acacia harpophylla*) country on a property 30 km west of Wandoan. The CG system had been established for 5 years before measurements were taken over a 2 year period (2000-2001). The period of measurement was very dry; the stocking rates (LSU/ha) were:

Year	Continuous Grazing	Cell Grazing
2000	0.46	0.77
2001	0	0.39

The measurements were taken at the end of a rest period on the CG padddock.

RESULTS/DISCUSSION

The results are summarised in the Tables 1, 2 and 3. Ecosystem Function Analysis indicated the CG ecosystem had a higher level for soil stability, nutrient cycling and infiltration than the CT. There was also a higher plant density under CG. Other data indicated a higher level of available soil moisture and more favourable botanical composition on the CG. Observations suggested that biological activity (particularly dung beetles) was higher on the CG than on the CT. Biological crusts were present only on the CG site.

Table 1: Ecosystem Function Analysis data – year 1

Parameter	Continuous Grazing	Cell Grazing
No.obstructions/10 m	12.3	10.3
Total obstruction width (cm/10m)	228.0	301.0
Average fetch length (cm)	49.0	26.0
Perennial grass cover %	39.1	73.1
Stability index (%)	43.3	71.7
Infiltration/runoff index (%)	45.3	58.8
Nutrient cycling index (%)	45.5	54.4

Table 2: Ecosystem Function Analysis data – year 2

Parameter	Continuous Grazing	Cell Grazing
No.obstructions/10 m	9.3	22.0
Total obstruction width (cm/10m)	153.3	432.0
Average fetch length (cm)	91.7	31.0
Perennial grass cover %	9.7	26.5
Stability index (%)	35.4	59.3
Infiltration/runoff index (%)	36.8	56.5
Nutrient cycling index (%)	30.5	54.4

Table 3: Plant density

Grazing System	Density of Grass Species (no. plants/m^2)				
	Buffel	Qld blue	Forest blue	Wire	Total
Continuous	9.7	1.6	0	0.8	12.1
Cell	5.6	15.4	0.6	0	21.6

Landscape function analysis indicated the ecosystem had a higher level for soil stability, nutrient cycling and infiltration under the CG compared to the CT. There was also a higher plant density under CG. Other data indicated a higher level of available soil moisture and more favourable botanical composition on the CG. Observations suggested that biological activity (particularly dung beetles) was higher on the CG than on the CT. Biological crusts were present only on the CG site.

The results indicated that CG may provide opportunities for maintenance and improvement of rangeland condition in the brigalow country.

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