SHALLOW CALCAREOUS LOAM

General Description: *Greyish brown powdery calcareous loam, becoming more silty with depth and grading to weathering calcareous siltstone bedrock within one metre*

Landform: Upper slopes of undulating to rolling low hills

Substrate: Weathered siltstone mantled by soft carbonate

Vegetation:

Type Site: Site No.: CM054

1:50,000 sheet:	6630-1 (Burra)	Hundred:	Kingston
Annual rainfall:	375 mm	Sampling date:	02/08/94
Landform:	Mid slope of undulating low hills, 7% slope		
Surface:	Firm with 2-10% siltstone and calcrete fragments to 60 mm in size		

Soil Description:

Depth (cm)	*Description*
0-10	Dark brown highly calcareous loam with weak granular structure and 2-10% siltstone fragments. Clear to:
10-23	Brown highly calcareous clay loam with moderate subangular blocky structure and 10-20% siltstone fragments. Sharp to:
23-25	Moderately cemented discontinuous massive calcrete pan. Sharp to:
25-36	Brown highly calcareous massive clay loam with 20-50% carbonate nodules and 20-50% siltstone fragments. Abrupt to:
36-60	Pale yellow highly calcareous massive clay loam with 20-50% soft carbonate and more than 50% siltstone fragments. Clear to:
60-100	Calcareous weathering siltstone.

Classification: Hypervescent, Paralithic, Supracalcic Calcarosol; medium, slightly gravelly, loamy / clay loamy, moderate.

Summary of Properties

Drainage Well drained. The soil is friable and well aerated and is unlikely to remain saturated for any appreciable length of time.

Fertility Natural fertility is moderate, mainly due to the high carbonate content throughout, limiting availability of phosphorus and trace elements. Phosphorus levels are low at pit site, but organic carbon (therefore nitrogen reserves are satisfactory). Zinc and possibly manganese may be deficient in some seasons and should be monitored.

pH Alkaline at the surface, strongly alkaline with depth.

Rooting depth 60 cm in pit, but very few roots below 36 cm.

Barriers to root growth

Physical: Shallow rock and calcrete limit the depth of root penetration.

Chemical: High carbonate content and very high pH restrict root growth below 36 cm.

Water holding capacity Approximately 50 mm.

Seedling emergence Good.

Workability Good.

Erosion Potential

Water: Moderate. Although the soil is relatively resistant to erosion, the slope is such that it will wash if unprotected.

Wind: Low, but excessive cultivation or livestock trampling will pulverize the surface causing it to blow.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.4	7.7	7.7	0.13	0.82	1.7	12	192	8.8	1.6	-	-	-	-	14.8	16.3	1.17	0.08	0.52	0.5
0-10	8.4	7.7	9.0	0.12	0.80	1.7	15	191	9.9	1.1	-	-	-	-	12.7	14.7	1.15	0.07	0.55	0.6
10-23	8.6	7.8	9.5	0.12	0.73	1.2	3	95	8.4	0.6	-	-	-	-	13.1	14.8	1.03	0.09	0.35	0.7
23-25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-36	8.8	7.8	23.9	0.12	0.70	1.1	4	113	8.8	1.0	-	-	-	-	8.4	10.8	0.96	0.16	0.16	1.9
36-60	9.6	7.8	36.7	0.14	0.79	0.4	3	40	6.9	1.3	-	-	-	-	2.3	3.94	0.49	0.47	0.02	20.4
60-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.