CALCAREOUS SANDY LOAM OVER CLAY

General Description: *Calcareous sandy loam grading to a highly calcareous sandy clay loam over a clayey substrate from about 100 cm*

Landform: Flat to gently undulating plains.

Substrate: Pleistocene age Blanchetown Clay - heavy red mottled clay with strong coarse prismatic structure.

Vegetation: Mallee

Type Site: Site No.: MM050

1:50,000 sheet:	7029-3 (Loxton)	Hundred:	Paringa
Annual rainfall:	250 mm	Sampling date:	28/07/92
Landform:	Flat plain		
Surface:	Soft with no stones		

Soil Description:

Depth (cm)	*Description*
0-5	Reddish brown moderately calcareous sandy loam. Abrupt to:
5-14	Reddish brown moderately calcareous fine sandy clay loam. Abrupt to:
14-25	Reddish brown highly calcareous fine sandy clay loam. Clear to:
25-75	Reddish yellow, red and reddish brown highly calcareous fine sandy clay loam. Gradual to:
75-87	Yellowish red, reddish brown and pink highly calcareous light medium clay. Clear to:
87-120	Yellowish red and light grey hard moderately calcareous medium clay with coarse prismatic structure. Diffuse to:
120-140	Brown, yellowish red and light grey hard moderately calcareous medium clay with coarse prismatic structure. Diffuse to:
140-180	As above, but non calcareous.

Classification: Epihypersodic, Regolithic, Hypercalcic Calcarosol; medium, non-gravelly, loamy / clay loamy, moderate

Summary of Properties

Drainage Moderately well drained. Soil is unlikely to remain wet for more than a week following heavy or prolonged rainfall.

Fertility Inherent fertility is moderate, as indicated by the exchangeable cation data. Phosphorus and nitrogen deficiencies are common, and zinc, manganese and copper may be required occasionally. Organic carbon levels are satisfactory at sampling site.

pH Alkaline at the surface, strongly alkaline with depth.

Rooting depth 40 cm in pit, but few roots below 25 cm.

Barriers to root growth

Physical: No physical barriers above the substrate clay (87 cm).

Chemical: High pH, salinity, sodicity and boron from 25 cm inhibit root growth.

Water holding capacity Approximately 30 mm in potential root zone.

Seedling emergence: Satisfactory.

Workability: Soft surface is easily worked.

Erosion Potential

Water: Low.

Wind: Moderately low.

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	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	8.7	8.0	3.0	0.15	0.59	0.96	14	665	2.1	0.5	2.9	5.3	0.4	17.3	11.92	3.19	0.59	1.85	3.4
0-5	8.6	8.0	5.2	0.14	0.50	1.05	27	727	1.9	0.5	2.9	5.1	0.6	16.4	11.36	2.07	0.23	1.96	1.4
5-14	8.7	8.1	7.4	0.14	0.47	0.86	11	705	1.8	0.6	2.3	3.9	0.5	15.3	11.05	2.74	0.47	2.10	3.1
14-25	-	-	-	-	1.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-75	9.7	8.8	24.1	1.57	13.92	0.12	<5	516	18.6	1.0	4.3	0.3	0.2	14.1	1.53	6.04	6.14	1.46	43.5
75-87	-	-	-	-	13.98	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87-120	9.4	8.8	4.9	2.16	14.30	0.01	<5	606	21.7	0.5	7.1	0.4	0.2	21.7	1.53	8.55	8.80	1.67	40.6
120-140	-	-	-	-	14.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-
140-180	-	-	-	-	15.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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.