SHALLOW SALINE CLAY LOAM OVER CALCRETE

General Description: Weakly structured saline sandy clay loam over calcrete at shallow depth, with a watertable between 100 and 150 cm

Landform: Gently undulating plain with

extensive sandhills and sporadic saline depressions.

Substrate: Calcreted sandy limestone

Description

(Coomandook Formation).

Vegetation: Mallee.



Type Site: Site No.: MM116 1:50,000 mapsheet: 6827-3 (Moorlands)

Hundred:RobyEasting:379450Section:50Northing:6076500

Sampling date: 01/04/1993 Annual rainfall: 400 mm average

Marginally saline flat with a soft surface and more than 50% calcrete stones (60-200 mm).

Soil Description:

Depth (cm)

0-8 Dark greyish brown firm fine sandy clay loam with weak granular structure and 20-50% calcrete fragments (60-200 mm). Abrupt to: 8-20 Dark brown massive firm fine sandy clay loam with 20-50% calcrete fragments (60-200 mm). Sharp to: 20-42 Laminar to nodular calcrete. Clear to: 42-55 Brown friable massive highly calcareous sandy clay loam with more than 50% calcrete fragments (200-600 mm). Abrupt to: 55-90 Light grey firm massive highly calcareous light sandy clay loam. Diffuse to:

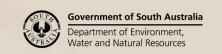
Light grey friable massive highly calcareous sandy clay with 10-20% carbonate nodules.



Classification: Epihypersodic, Petrocalcic, Supracalcic Calcarosol; medium, very gravelly, clay loamy / clay

loamy, very shallow

Watertable.



90-125

125-



Soil Characterisation Site data sheet

Summary of Properties

Drainage: Imperfectly drained. Soil may remain wet for several weeks at a time due to the

influence of the watertable.

Fertility: Inherent fertility is moderate as indicated by the exchangeable cation data. Regular

phosphorus applications are essential. Nitrogen required for grasses because legumes will not persist (salinity). Zinc and copper deficiencies are possible. Organic carbon

levels are high.

pH: Alkaline at the surface, strongly alkaline with depth.

Rooting depth: 55 cm in pit.

Barriers to root growth:

Physical: The calcrete impedes root growth to some extent, but there is some penetration.

Chemical: High pH, salinity and sodicity from 55 cm prevent deeper root growth. High surface

boron is a summer phenomenon. Early winter rains will leach it away from

germinating seeds.

Waterholding capacity: Approximately 30 mm in the rootzone.

Seedling emergence: Satisfactory, provided that salt and boron have been leached. Otherwise fair to poor.

Workability: Soft surface is easily worked, but soil is often wet and boggy during winter.

Erosion Potential:

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaC1 ₂	CO ₃	EC1:5 dS/m	ECe dS/m	Org.C	Avail. P	P K mg/kg			0 0				Exchangeable Cations cmol(+)/kg				ESP
							mg/kg	mg/kg		Cu	Fe	Mn	Zn	(+)/kg	Ca	Mg	Na	K	
Paddock	8.3	7.8	2	1.95	18.9	2.0	23	640	18	0.50	27	8.1	1.3	17.7	10.51	2.96	3.72	2.06	21.0
0-8	8.4	7.8	3	0.82	6.9	2.2	15	640	11	0.39	33	7.1	0.74	17.1	11.13	3.03	2.08	1.88	12.2
8-20	8.4	7.8	2	0.91	9.6	1.4	8	560	10	0.33	17	6.7	0.21	18.4	10.90	3.05	2.82	1.80	25.9
20-42	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	
42-55	8.8	8.3	30	1.74	14.8	0.4	5	610	10	0.25	1.7	2.1	0.10	4.8	2.42	1.29	0.09	0.30	1.9
55-90	9.4	8.5	22	1.16	12.3	<0.1	2	440	6.4	0.11	1.5	0.80	0.14	6.4	3.12	1.29	3.05	1.17	47.7
90-125	9.3	8.5	23	1.61	13.3	<0.1	2	810	15	0.31	3.4	0.63	0.07	14.7	4.15	2.65	7.67	2.04	52.2

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.

Further information: DEWNR Soil and Land Program



