

SANDY LOAM OVER POORLY STRUCTURED BROWN CLAY

General Description: *Firm loamy sand to sandy loam over a coarsely structured dispersive brown sandy clay loam to sandy clay, calcareous with depth*

Landform: Gently undulating plain with extensive jumbled sandhills.

Substrate: Medium to coarse grained Tertiary sediments (Parilla Sand equivalent).

Vegetation: Mallee.



Type Site: Site No.: MM127

1:50,000 sheet: 7028-2 (Peebinga)

Hundred: Peebinga

Annual rainfall: 315 mm

Sampling date: 22/05/96

Landform: Swale

Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-12	Dark brown firm light sandy loam with platy structure. Abrupt to:
12-20	Orange firm massive light sandy loam. Sharp to:
20-35	Orange very hard fine sandy clay loam with coarse columnar structure. Clear to:
35-65	Very pale brown very hard massive fine sandy light clay with 10-20% fine carbonate segregations. Gradual to:
65-90	Yellow very highly calcareous hard massive fine sandy clay loam. Gradual to:
90-165	Very pale brown and brownish yellow highly calcareous hard massive fine sandy clay loam. Diffuse to:
165-190	Yellowish brown and brownish yellow moderately calcareous hard massive fine sandy loam.



Classification: Calcic, Subnatric, Brown Sodosol; medium, non-gravelly, loamy / clayey, moderate

Summary of Properties

Drainage	Moderately well drained. Soil may remain wet for up to a week following heavy or prolonged rainfall.
Fertility	Inherent fertility is moderately low, as indicated by the exchangeable cation data. Phosphorus, nitrogen, zinc and copper deficiencies are all likely. At the sampling site, concentrations of phosphorus, zinc, copper and sulphur all appear to be low. Manganese may be required for lupins. Organic carbon levels are low for this environment.
pH	Neutral at the surface, strongly alkaline with depth.
Rooting depth	65 cm in pit, but few roots below 20 cm.
Barriers to root growth	
Physical:	The clayey subsoil restricts root growth to some extent and prevents uniform root distribution patterns.
Chemical:	High pH and sodicity from 35 cm significantly impede root growth.
Water holding capacity	Approximately 40 mm in root zone.
Seedling emergence:	Satisfactory.
Workability:	Firm surface is easily worked, although some areas set hard and are more restrictive.
Erosion Potential	
Water:	Low.
Wind:	Moderately low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl 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	6.8	6.2		0.05	0.54	0.7	10	356	3	0.7	0.06	11	6.99	0.43	7.1	4.44	1.43	0.15	0.69	2.1
0-12	6.8	6.3		0.06	0.56	0.8	10	330	3	0.8	-	-	-	-	7.4	4.90	1.46	0.15	0.76	2.1
12-20	7.4	6.5	<0.1	0.03	0.20	0.4	4	223	2	0.8	-	-	-	-	5.9	3.87	1.15	0.18	0.49	3.1
20-35	8.7	7.6	<0.1	0.10	0.66	0.2	<4	262	2	2.2	-	-	-	-	12.2	5.17	5.25	1.34	0.58	10.9
35-65	9.8	8.7	10.1	0.63	2.81	0.2	<4	246	32	12.6	-	-	-	-	10.7	2.19	6.10	4.24	0.51	39.5
65-90	9.9	8.9	5.5	0.78	3.48	0.1	<4	242	71	14.0	-	-	-	-	8.8	1.59	5.19	4.26	0.40	48.5
90-165	9.9	8.9	3.1	0.68	4.15	<0.1	<4	217	82	12.4	-	-	-	-	8.3	1.28	4.19	3.87	0.35	46.7
165-190	9.6	8.9	0.4	0.79	6.88	<0.1	<4	232	89	12.7	-	-	-	-	8.7	0.85	4.45	3.44	0.42	39.4

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.