

LOAMY SAND OVER RED POORLY STRUCTURED CLAY

General Description: *Medium thickness firm loamy sand abruptly overlying a coarsely structured dispersive red clay, calcareous with depth*

Landform: Slopes of undulating rises.

Substrate: Tertiary age (cemented) sand, clayey sand or sandy clay, mantled by fine carbonate.

Vegetation:



Type Site: Site No.: CL907

1:50,000 sheet:	6629-2 (Kapunda)	Hundred:	Light
Annual rainfall:	450 mm	Sampling date:	07/03/91
Landform:	Lower slope of undulating rise, 3% slope		
Surface:	Soft with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-6	Reddish brown soft single grain sand – probably recent drift. Abrupt to:
6-14	Dark reddish brown firm massive loamy sand. Abrupt to:
14-58	Yellowish red hard medium clay with strong coarse prismatic structure. Gradual to:
58-119	Reddish yellow hard very highly calcareous light clay with weak subangular blocky structure and 20-50% fine carbonate segregations. Diffuse to:
119-130	Yellowish red firm massive sandy loam with 2-10% fine carbonate segregations in pockets.



Classification: Hypercalcic, Red Sodosol; medium, non-gravelly, sandy / clayey, deep

Summary of Properties

Drainage: Moderately well drained. Water perches on the poorly structured dispersive clay for a week or so following heavy or prolonged rainfall. The shallow depth to clay increases the waterlogging impact.

Fertility: Inherent fertility is low due to the low clay and organic matter content of the surface soil (restricted nutrient retention capacity). Concentrations of zinc and manganese are low.

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

Rooting depth: 40 cm in pit.

Barriers to root growth:

Physical: The poorly structured dispersive clay subsoil restricts root growth by confining them to the surfaces of the coarse aggregates with little internal penetration.

Chemical: High pH and probably sodicity, and moderate salinity from 58 cm prevent deeper root growth.

Water holding capacity: Approximately 45 mm in the root zone.

Seedling emergence: Satisfactory, although water repellence may be a problem where drift sand has accumulated.

Workability: The sandy surface is easily worked.

Erosion Potential

Water: Moderate.

Wind: Moderate.

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	
0-6	6.6	5.6	0	0.10	-	0.65	54	280	-	-	0.3	75	5.4	0.6	-	-	-	-	-	-
6-14	7.3	5.8	0	0.06	-	0.35	5	200	-	-	0.6	28	11.1	0.1	-	-	-	-	-	-
14-58	8.7	7.5	0	0.20	-	0.40	2	270	-	9	0.7	12	3.2	0.1	-	-	-	-	-	-
58-119	9.3	8.5	27	1.65	-	0.12	1	300	-	14	0.5	4.4	0.5	0.0	-	-	-	-	-	-
119-130	9.5	8.4	5	1.15	-	0.04	1	190	-	-	0.1	3.6	0.2	0.1	-	-	-	-	-	-