

SILTY LOAM OVER RED BROWN CLAY

General Description: *Hard massive silty loam clearly overlying a red or brown, often mottled coarsely structured dispersive clay, weakly calcareous with depth.*

Landform: Alluvial flats and terraces.

Substrate: Medium to fine textured alluvium, often containing a mildly saline water table

Vegetation:

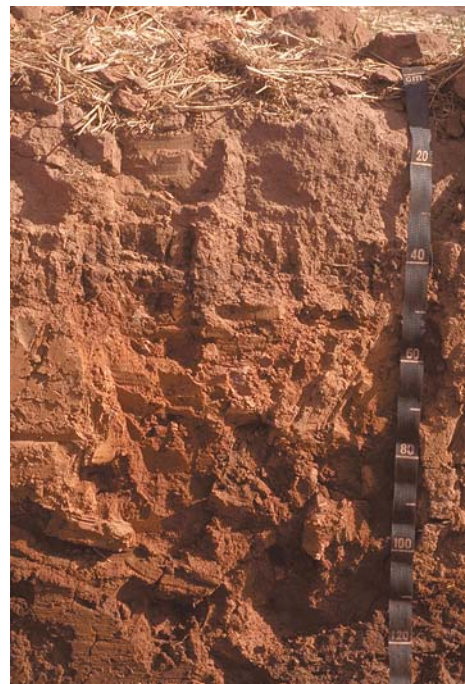


Type Site: Site No.: CL903

1:50,000 sheet: 6629-2 (Kapunda) Hundred: Kapunda
Annual rainfall: 500 mm Sampling date: 06/03/91
Landform: Terrace or Light River, 0% slope
Surface: Hard setting with no stones. Water table (5000 mg/l) at 130 cm.

Soil Description:

Depth (cm)	Description
0-28	Brown hard massive silty loam. Clear to:
28-40	Reddish brown hard medium clay with moderate coarse angular blocky structure. Gradual to:
40-140	Yellowish red firm moderately calcareous light clay with weak coarse subangular blocky structure.



Classification: Calcic, Red Sodosol; medium, non-gravelly, silty / clayey, deep

Summary of Properties

Drainage: Moderately well to imperfectly drained. The soil may remain wet for a week or two following heavy or prolonged rainfall. This is due to a combination of perching of water on the dispersive clay subsoil, and impeded deep drainage caused by shallow water tables.

Fertility: Inherent fertility is moderate. Surface clay content of about 20% and organic carbon concentrations of less than 1% are too low for optimum nutrient retention capacity.

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

Rooting depth: 70 cm in pit, but few roots below 40 cm.

Barriers to root growth:

Physical: The coarsely structured clayey subsoil restricts root density and elongation, but does not prevent root growth.

Chemical: High boron concentrations, high pH, probably high sodicity and the effects of the moderately saline water table combine to limit root growth.

Water holding capacity: Approximately 65 mm in the root zone.

Seedling emergence: Fair. Hard setting surface tends to seal over, preventing full seedling emergence.

Workability: Fair. The surface soil tends to shatter if worked too dry, and puddle if worked too wet.

Erosion Potential

Water: Low.

Wind: 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	
0-28	5.9	5.0	0	0.07	-	0.85	31	260	-	-	0.8	56	23.0	1.2	-	-	-	-	-	-
28-40	9.0	7.9	1	0.21	-	0.30	3	540	-	28	1.0	8.8	4.4	0.9	-	-	-	-	-	-
40-140	9.5	8.4	5	0.70	-	0.10	1	500	-	14	0.8	5.7	1.9	0.1	-	-	-	-	-	-