

LOAM OVER POORLY STRUCTURED RED CLAY

General Description: *Hard loam to clay loam abruptly overlying a coarsely structured dispersive red clay, calcareous with depth, continuing below 100 cm.*

Landform: Gently inclined fans to flat plains.

Substrate: Alluvial clay (Pooraka Formation), mantled by fine carbonate

Vegetation:



Type Site: Site No.: CL902
1:50,000 sheet: 6629-2 (Kapunda) Hundred: Kapunda
Annual rainfall: 500 mm Sampling date: 06/03/91
Landform: Outwash fan adjacent to low hill, 3% slope
Surface: Hard setting with no stones

Soil Description:

Depth (cm)	Description
0-22	Dark reddish brown hard massive loam. Sharp to:
22-56	Dark reddish brown hard medium clay with coarse prismatic structure. Clear to:
56-125	Reddish brown hard moderately calcareous medium clay with moderate coarse angular blocky structure and 2-10% carbonate nodules. Diffuse to:
125-150	Yellowish red hard moderately calcareous medium clay with moderate coarse angular blocky structure and 2-10% carbonate nodules.



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

Summary of Properties

Drainage: Moderately well drained. Water perches on the dispersive clayey subsoil for a week or so following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately high. Surface clay content of 20-25% provides adequate nutrient retention capacity, which could be increased by higher organic matter levels. Nutrient availability is favoured by neutral pH. Trace element concentrations in the surface are satisfactory.

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

Rooting depth: 56 cm in pit.

Barriers to root growth:

Physical: The hard dispersive clayey subsoil restricts root growth and density but does not prevent root growth.

Chemical: High boron, high pH, moderate salinity, and probably high sodicity below 56 cm limit deeper root growth. Low trace element availability may also play a part.

Water holding capacity: Approximately 75 mm in the potential 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: Moderately 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	
0-22	6.9	6.2	0	0.10	-	0.92	18	320	-	-	1.1	22	22.0	0.6	-	-	-	-	-	-
22-56	8.1	6.9	0	0.16	-	0.53	2	650	-	15	2.0	10	5.7	0.2	-	-	-	-	-	-
56-125	9.4	8.3	6	0.56	-	0.14	1	610	-	18	0.9	4.2	1.0	0.1	-	-	-	-	-	-
125-150	9.4	8.2	7	0.66	-	0.12	1	530	-	-	0.9	4.1	0.9	0.1	-	-	-	-	-	-