

LOAM OVER RED CLAY ON ROCK

General Description: *Hard loam over a well structured red clay, calcareous with depth, grading to weathering basement rock.*

Landform: Slopes of undulating to rolling rises and low hills.

Substrate: Precambrian siltstone, mantled by fine carbonate.

Vegetation:



Type Site: Site No.: CL905

1:50,000 sheet:	6629-2 (Kapunda)	Hundred:	Gilbert
Annual rainfall:	475 mm	Sampling date:	07/03/91
Landform:	Lower slope of undulating low hill, 6% slope		
Surface:	Hard setting with no stones		

Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown firm loam with weak granular structure. Clear to:
10-21	Reddish brown hard massive loam. Abrupt to:
21-53	Dark red hard medium clay with strong medium prismatic (breaking to polyhedral) structure. Clear to:
53-121	Reddish yellow hard very highly calcareous light clay with moderate medium subangular blocky structure and 20-50% fine carbonate segregations. Gradual to:
121-140	Weathering siltstone with 10-20% fine carbonate in fissures.



Classification: Sodic, Hypercalcic, Red Chromosol; medium, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage: Well drained. The soil rarely remains wet for more than a few days following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately high. At this site, high surface organic matter levels provide additional nutrient retention capacity. As is usual with increasing pH and carbonate content, availability of zinc, copper and manganese declines dramatically with depth.

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

Rooting depth: 105 cm in pit, but few roots below 53 cm.

Barriers to root growth:

Physical: There are no significant physical barriers.

Chemical: High pH and probably high sodicity from 53 cm cause root growth restrictions.

Water holding capacity: Approximately 90 mm in the root zone.

Seedling emergence: Satisfactory at this site with favourable surface condition. Similar soils characteristically have hard setting, sealing surfaces which reduce seedling emergence percentages.

Workability: This soil is relatively easy to work, but surfaces of similar soils elsewhere tend to shatter if worked too dry, and puddle if worked too wet.

Erosion Potential

Water: Moderate.

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	
0-10	5.9	5.4	0	0.12	-	1.57	46	390	-	-	1.3	45	26.0	0.8	-	-	-	-	-	-
10-21	6.2	5.3	0	0.05	-	0.64	18	240	-	-	1.0	25	23.0	0.2	-	-	-	-	-	-
21-53	7.7	7.1	2	0.25	-	0.60	4	370	-	4	1.2	13	9.4	0.1	-	-	-	-	-	-
53-121	9.3	8.3	32	0.23	-	0.16	2	390	-	10	0.6	3.8	0.7	0.1	-	-	-	-	-	-
121-140	9.4	8.3	13	0.20	-	0.07	1	210	-	-	0.4	5.1	0.6	0.0	-	-	-	-	-	-