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:

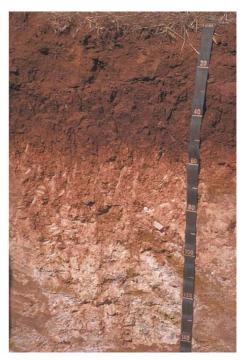
53-121 Reddish yellow hard very highly calcareous light

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 CaC1 ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	%	P	Avail. K mg/kg	mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)			CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	
							mg/kg	mg/kg			Cu	Fe	Mn	Zn	(1)/125	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	-	-	-	-	-	-