

LOAM OVER POORLY STRUCTURED RED CLAY

General Description: *Hard setting loam abruptly overlying a coarsely structured dispersive red clay, calcareous with depth*

Landform: Fans and flats.

Substrate: Coarsely structured heavy red clay (Hindmarsh Clay equivalent).

Vegetation:

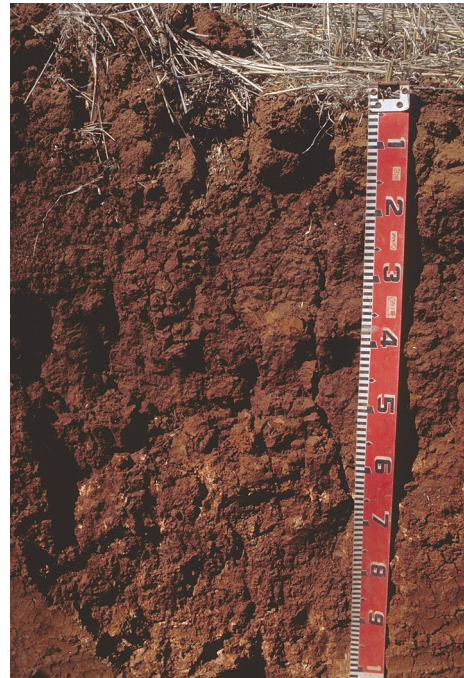


Type Site:	Site No.:	CM913	1:50,000 mapsheet:	6630-2 (Apoinga)
	Hundred:	Hanson	Easting:	296200
	Section:	432	Northing:	6253550
	Sampling date:	21/03/2000	Annual rainfall:	510 mm average

Alluvial fan with slopes of 2%. Hard setting surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-15	Dark reddish brown hard massive loam with less than 2% quartz gravel (2-6 mm). Abrupt to:
15-55	Dark reddish brown very hard heavy clay with strong coarse prismatic structure. Gradual to:
55-110	Red very hard moderately calcareous heavy clay with strong coarse prismatic structure and 2-10% fine carbonate segregations. Gradual to:
110-180	Red very hard heavy clay with strong coarse prismatic structure and 2-10% fine carbonate segregations.



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



Summary of Properties

Drainage: Moderately well drained. The dispersive subsoil clay perches water for up to a week following heavy or prolonged rainfall.

Fertility: Inherent fertility is high. Clay content exceeding 20%, high organic carbon levels and slightly acidic pH combine to provide favourable nutrient retention and availability characteristics. Phosphorus and nitrogen concentrations are high.

pH: Slightly acidic at the surface, alkaline with depth.

Rooting depth: 110 cm in pit, but few roots below 55 cm.

Barriers to root growth:

Physical: The hard coarsely structured clay does not prevent root growth, but it causes reduced density as roots are forced around aggregates, with few penetrating inside.

Chemical: High sodicity and moderate salinity at depth restrict deep root growth.

Waterholding capacity: Approximately 75 mm in the rootzone.

Seedling emergence: Fair. Hard setting, sealing surface affects emergence percentage.

Workability: Fair. Surface 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 mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-15	5.8	5.7	-	0.40	-	1.53	74	553	231	2.7	-	-	-	-	11.3	8.19	1.6	0.28	1.27	2.5
15-55	8.5	7.8	-	0.28	-	-	-	-	-	3.6	-	-	-	-	32.4	15.5	10.8	4.21	1.79	13.0
55-110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110-180	8.8	8.3	-	1.03	-	-	-	-	-	13.1	-	-	-	-	30.8	11.5	10.3	7.56	1.46	24.5

Note: Sum of cations (an estimate of cation exchange capacity or CEC) is a measure of the soil's capacity to store and release major nutrient elements.
 ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the estimated CEC.

Further information: [DEWNR Soil and Land Program](#)

