

LOAM OVER RED CLAY

General Description: *Hard setting loam to clay loam abruptly overlying a strongly structured red clay, calcareous with depth, grading to unconsolidated sediments.*

Landform: Alluvial plains and outwash fans.

Substrate: Fine grained alluvium with variable grit and gravel.

Vegetation:



Type Site: Site No.: CL914

1:50,000 sheet: 6730-3 (World's End) Hundred: Apoinga
 Annual rainfall: 350 mm Sampling date: 21/03/00
 Landform: Very gently inclined alluvial plain, 1% slope
 Surface: Hard setting with no stones

Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown hard light clay loam with weak granular structure. Abrupt to:
10-18	Pink hard massive clay loam. Abrupt to:
18-45	Dark reddish brown hard medium clay with strong coarse prismatic (breaking to medium angular blocky) structure. Gradual to:
45-85	Red firm very highly calcareous light medium clay with weak angular blocky structure and 10-20% fine carbonate segregations. Gradual to:
85-140	Red firm highly calcareous massive light medium clay with 20-50% fine carbonate segregations and a gritty lens between 85 and 90 cm.



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

Summary of Properties

- Drainage:** Well drained. The soil never remains saturated for more than a few days following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is high. Clay and organic carbon levels are favourable at the surface, ensuring good nutrient retention capacity, and fixation problems are unlikely as pH is neutral.
- pH:** Neutral at the surface, alkaline with depth.
- Rooting depth:** 85 cm in pit, but few roots below 45 cm.
- Barriers to root growth:**
- Physical:** The coarsely structured clayey subsoil presents a slight limitation, due to its effect on root densities, but it is not dispersive, so adverse impacts should be minimal.
 - Chemical:** There are no apparent chemical restrictions.
- Water holding capacity:** Approximately 85 mm in the root zone.
- Seedling emergence:** Fair. Hard setting sealing surface reduces establishment in some seasons.
- Workability:** Fair. The surface soil tends to shatter if worked too dry, and puddle if worked too wet.

Erosion Potential

- Water:** Moderately low.
- Wind:** Moderately 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)				Sum of cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
0-10	6.7	6.0	-	0.10	-	1.67	28	825	6.8	1.4	-	-	-	-	16.0	10.8	3.23	0.14	1.82	0.9	
10-18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45-85	9.0	8.0	-	0.16	-	0.34	2	333	2.9	1.2	-	-	-	-	19.9	11.8	5.73	1.58	0.80	7.9	
85-140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the sum of cations (an estimate of cation exchange capacity).