

SANDY LOAM OVER DISPERSIVE RED CLAY

General Description: *Sandy loam to light sandy clay loam over a red poorly structured clay, calcareous with depth*

Landform: Lower slopes and outwash fans of undulating rises and low hills

Substrate: Fine to medium grained outwash sediment (Pooraka Formation), mantled by secondary carbonate

Vegetation:



Type Site: Site No.: EE214
 1:50,000 sheet: 6230-4 (Mangalo) Hundred: Hawker
 Annual rainfall: 375 mm Sampling date: 17/09/01
 Landform: Lower slope of undulating low hills, 1% slope.
 Surface: Hard setting with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Reddish brown massive coarse sandy loam. Clear to:
10-25	Dark reddish brown massive coarse sandy loam. Clear to:
25-50	Yellowish red slightly calcareous and slightly dispersive light medium clay with moderate subangular blocky structure. Gradual to:
50-110	Strong brown very highly calcareous light medium clay with weak subangular blocky structure.



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

Summary of Properties

- Drainage:** Moderately well drained. Soil is unlikely to remain wet for more than a week following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is high, as indicated by the exchangeable cation data. At the pit site, concentrations of all tested elements are satisfactory with the exception of nitrate nitrogen (subject to seasonal fluctuations). Organic carbon levels are adequate for this environment.
- pH:** Neutral at the surface, strongly alkaline with depth.
- Rooting depth:** 50 cm in pit.
- Barriers to root growth:**
- Physical:** The slightly dispersive clayey subsoil impedes root growth to a limited extent.
 - Chemical:** High pH / sodicity from 25 cm restrict deeper root growth.
- Water holding capacity:** Approximately 65 mm in the potential root zone.
- Seedling emergence:** Fair due to the tendency of the surface to seal over and set hard.
- Workability:** Fair. The surface tends to puddle if worked too wet, and shatter if worked too dry. Gritty surface soil may abrade implements.

Erosion Potential

- Water:** Moderately low. Run on water from upslope may cause rilling of unprotected surfaces.
- Wind:** Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	Org.C %	NO ₃ mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum of cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-10	7.2	6.6	nd	0.11	1.18	4	37	512	4.5	1.3	0.56	13.0	0.66	11.9	9.9	6.65	1.66	0.36	1.27	3.6
10-25	8.7	7.8	nd	0.10	0.42	3	7	255	2.5	1.4	0.47	2.48	0.19	2.53	9.3	5.72	2.27	0.73	0.60	7.8
25-50	9.7	8.7	nd	0.43	0.36	3	5	331	12.1	8.9	1.67	5.21	0.15	1.38	26.4	8.91	10.6	6.09	0.80	23.1
50-110	9.6	8.8	nd	0.59	0.21	2	5	300	63.5	10.6	0.96	2.29	0.18	0.61	22.5	7.18	7.71	6.88	0.74	30.6

Note: Sum of cations in neutral to alkaline soils is an approximation of cation exchange capacity (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 sum of cations.