

## SANDY LOAM OVER POORLY STRUCTURED BROWN CLAY

**General Description:** *Loamy sand to sandy clay loam, sharply overlying yellow, brown and red mottled clay.*

**Landform:** Slopes of rolling low hills

**Substrate:** Weakly consolidated clayey sand to sandy clay sediments deposited in ancient glacial valleys

**Vegetation:** Pink and blue gum woodland



<b>Type Site:</b>	Site No.:	CH005	1:50,000 mapsheet:	6527-2 (Yankalilla)
	Hundred:	Yankalilla	Easting:	262200
	Section:	1189	Northing:	6069900
	Sampling date:	30/01/92	Annual rainfall:	620 mm average

Lower slope of rolling low hills, 14% slope. Firm surface, no stones.

### Soil Description:

Depth (cm)	Description
0-10	Dark greyish brown weakly granular sandy loam. Clear to:
10-21	White, massive loamy sand. Sharp to:
21-40	Greyish brown and yellowish brown strongly prismatic medium clay. Gradual to:
40-90	Light olive brown and pale olive strongly prismatic medium clay. Gradual to:
90-140	Light olive grey, brownish yellow and brown weakly prismatic sandy medium clay, with traces of fine carbonate. Gradual to:
140-175	Brown, light grey and brownish yellow massive sandy clay, with minor pockets of fine carbonate.



**Classification:** Calcic, Mottled-Subnatric, Brown Sodosol; medium, non-gravelly, loamy / clayey, deep



## Summary of Properties

- Drainage:** Moderately well to imperfect. Soil may remain wet for a week to several weeks.
- Fertility:** Low. Surface soil has very low natural fertility, as indicated by its low CEC. This is a result of cation leaching. Calcium, magnesium and potassium are all deficient. Phosphorus and boron levels are also low.
- pH:** Strongly acidic in the surface, moderately acidic in the upper subsoil, alkaline in lower subsoil. Lime or preferably dolomite required to correct the problem.
- Rooting Depth:** 60 cm at type site, although root density below the top layer is low.
- Barriers to root growth:**
- Physical:** Root development is retarded by the tough clay subsoil (caused by high levels of exchangeable sodium and magnesium).
  - Chemical:** Very low fertility and high acidity (possibly with associated aluminium toxicity).
- Waterholding capacity:** 60-80 mm in rootzone (moderately low). This is not all available to plants because of the poor root density below the surface soil layer.
- Seedling emergence:** Good to fair, depending on hardness and water repellence of surface.
- Workability:** Good to fair, depending on hardness of surface.
- Erosion potential:**
- Water:** Moderately high due to the slope and the highly erodible nature of the soil. This is due to the poorly structured, sandy, thin surface and the slowly permeable subsoil.
  - Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl 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	4.7	4.2	0	0.07	0.4	1.9	13	68	34	0.6	0.4	303	15.4	0.6	4.4	1.7	0.3	0.1	0.1	3
10-21	5.1	4.5	0	0.04	0.2	0.1	12	47	24	0.2	<0.1	59	4.5	<0.1	1.7	0.5	0.2	0.1	0.1	6
21-40	5.9	5.1	0	0.08	0.4	0.5	29	400	15	2.4	6.8	66	2.0	0.3	26.9	13.8	8.1	1.8	1.1	7
40-90	6.3	5.6	0	0.12	0.4	0.3	18	380	37	3.1	0.2	21	<0.5	<0.1	27.2	13.3	8.2	2.2	1.0	8
90-140	7.4	6.7	<0.1	0.19	1.0	0.1	8	220	101	2.1	0.2	7	<0.5	<0.1	16.3	9.8	4.7	1.7	0.4	10
140-175	8.5	8.0	3.7	0.42	2.8	0.0	12	210	330	1.6	0.1	4	<0.5	<0.1	16.4	10.9	4.4	1.9	0.4	11

**Note:** CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements. ESP (exchangeable sodium percent) is derived by dividing the exchangeable sodium value by the CEC.

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

