

## THICK BLEACHED SANDY LOAM OVER CLAY

**General Description:** *Delved thick sandy loam to light sandy clay loam with a bleached sandy subsurface layer over a coarsely structured yellowish clay, calcareous with depth.*

**Landform:** Very gently undulating plain.

**Substrate:** Tertiary age sandy clay.

**Vegetation:**



<b>Type Site:</b>	Site No.:	SE125	1:50,000 mapsheet:	7025-4 (Cannawigara)
	Hundred:	Cannawigara	Easting:	468070
	Section:	52	Northing:	5993810
	Sampling date:	30/10/06	Annual rainfall:	480 mm average

Flat on very gently undulating plain with low sand hills. Firm to hard compacted surface with no stones. Paddock delved to 40 cm

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-14	Dark brown hard compacted light sandy clay loam with weak platy structure. Many roots. Clear to:
14-35	Pale brown (bleached) soft to firm single grain sand. Very few roots. Sharp to:
14-45	Delved zone - mix of upper three horizons along delve line. Very few roots.
35-80	Olive brown and yellowish red firm light medium clay with coarse columnar, breaking to moderate subangular blocky, structure. Few roots. Diffuse to:
80-100	Light yellow brown firm light clay with weak coarse prismatic, breaking to strong moderate subangular blocky, structure. Very few roots. Clear to:
100-120	Olive yellow hard light clay with moderate to fine subangular blocky structure and more than 50% carbonate veins. No roots.



**Classification:** Hypercalcic, Mottled-Subnatric, Yellow Sodosol; thick, non-gravelly, loamy / clayey, deep



## Summary of Properties

- Drainage:** Moderately well to imperfectly drained. Water is likely to perch on top of the clay subsoil for a week to several weeks at a time following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderately low, as indicated by the exchangeable cation data, but delving has improved cation status of near surface soil (compare original subsurface layer 14-35 cm with delved sand layer 14-45 cm). Soil test data indicate that phosphate levels are low, and trace element levels are marginal (tissue test required for confirmation).
- pH:** Neutral to slightly alkaline at the surface, alkaline in the subsoil, and strongly alkaline at depth.
- Rooting depth:** 80 cm in sampling pit, with a very few roots to 100 cm.
- Barriers to root growth:**
- Physical:** The coarsely structured clay subsoil restricts root growth, confining most roots to the surfaces of the aggregates. Delving has improved root growth potential by disrupting the sharp break between topsoil and subsoil, and breaking up the clay.
- Chemical:** High pH from 80 cm, and very high pH from 100 cm limit root growth.
- Waterholding capacity:** Approximately 95 mm total available water in potential rootzone.
- Seedling emergence:** Fair due to compaction of surface.
- Workability:** Fair to satisfactory. There is sufficient clay in the surface that it will tend to puddle if worked too wet, and shatter if worked too dry.
- Erosion Potential:**
- Water:** Low.
- Wind:** Low to moderately 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	Cl mg/kg	Org.C %	NO <sub>3</sub> + NH <sub>4</sub> mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -S mg/kg	React Fe mg/kg	Ext Al mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
															Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-14	7.3	6.6	1	0.06	0.55	14	1.27	6	11	279	5.8	500	0	1.4	1.0	77	10.4	1.0	9.6	6.91	1.8	0.14	0.71	1.5
14-35	7.7	7.1	0	0.04	0.30	8	0.26	3	7	26	3.1	249	0	0.3	0.6	114	0.8	0.3	1.9	1.48	0.32	0.08	0.06	4.1
35-80	8.4	7.4	0	0.17	0.69	20	0.33	4	2	765	21.3	635	0	3.1	0.2	30	1.6	0.2	21.0	10.2	7.04	1.63	2.13	7.8
80-100	9.0	8.1	0	0.22	0.62	18	0.20	2	2	785	14.1	606	0	4.8	2.2	42	17.8	1.0	22.2	10.1	7.73	2.2	2.09	9.9
100-120	9.3	8.2	55	0.27	0.89	27	0.26	2	2	548	16.8	423	0	3.4	0.1	12	2.6	0.2	19.8	10.7	5.57	2.13	1.43	10.7
14-45 *	8.1	7.0	0	0.15	0.71	42	0.53	10	2	601	9.9	734	0	2.2	0.4	49	1.0	0.4	19.0	11.3	5.47	0.62	1.58	3.3
14-45 **	8.1	7.0	0	0.05	0.33	8	0.31	3	3	60	5.9	400	0	0.5	6.7	233	1.2	1.5	3.6	2.69	0.67	0.09	0.16	2.5

**Note:** Sum of cations, in a neutral to alkaline soil, approximates the CEC (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 CEC, in this case estimated by the sum of cations.

- \* Clay lumps sampled from within the zone altered by delving.
- \*\* Sand sampled from within the zone altered by delving.

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

