

## BLEACHED SAND OVER CLAY

**General Description:** *Delved sandy loam with a bleached sandy subsurface layer over a moderately well structured reddish clay, calcareous with depth*

**Landform:** Very gently undulating plain.

**Substrate:** Tertiary age sandy clay loam.

**Vegetation:**



<b>Type Site:</b>	Site No.:	SE124	1:50,000 mapsheet:	7025-4 (Cannawigara)
	Hundred:	Cannawigara	Easting:	473120
	Section:	2	Northing:	5994380
	Sampling date:	30/10/06	Annual rainfall:	480 mm average

Slope (1%) on very gently undulating plain. Soft surface with no stones. Paddock delved to 45 cm.

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-12	Very dark greyish brown soft sandy loam. Clay fragments common. Abundant roots. Clear to:
12-30	Yellowish brown (bleached) friable sand. Very few roots. Sharp to:
30-60	Yellowish red firm to hard light clay with weak medium angular blocky structure. Very few roots (however, roots common under delve line). Diffuse to:
12-44	Delved zone - mix of upper three horizons along the line of delve tine. Many roots.
60-105	Brownish yellow and yellowish brown mottled hard light clay with weak coarse prismatic structure and 20-50% carbonate veins. Very few roots. Gradual to:
105-120	Brownish yellow and red mottled massive firm sandy clay loam. No roots.



**Classification:** Bleached, Calcic, Red Chromosol; thick, non-gravelly, loamy / clayey, deep



## Summary of Properties

- Drainage:** Moderately well drained. Water is likely to perch on top of the clay subsoil for up to a week 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 12-30 cm with delved sand layer 12-44 cm). Soil test data indicate that phosphate levels are low, but concentrations of other nutrient elements are adequate.
- pH:** Under natural conditions, slightly acidic at the surface, but now slightly alkaline at the surface due to delving and / or past liming, alkaline in the subsoil.
- Rooting depth:** 60 cm in sampling pit, with a very few roots to 105 cm.
- Barriers to root growth:**
- Physical:** The clay subsoil restricts root growth to some extent, but is naturally moderately well structured. Delving has improved root growth by disrupting the sharp break between topsoil and subsoil, and breaking up the clay.
- Chemical:** No apparent barriers apart from very low subsurface nutrient retention capacity.
- Waterholding capacity:** Approximately 90 mm total available water in potential rootzone.
- Seedling emergence:** Satisfactory.
- Workability:** Good.
- Erosion Potential:**
- Water:** Low.
- Wind:** Moderately low due to relatively low clay content of surface soil.

## 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	
0-12	7.4	6.4	0	0.06	0.48	11	1.20	5	12	213	7.5	276	0	1.2	2.7	83	15.4	2.0	5.3	3.93	0.83	0.09	0.49	1.7
12-30	5.9	5.1	0	0.02	0.21	7	0.13	4	8	65	4.6	201	0.6	0.5	2.1	62	4.2	0.9	1.4	0.97	0.2	0.06	0.15	na
30-60	7.6	6.5	0	0.05	0.38	11	0.49	6	2	475	4.8	490	0	2.4	0.1	18	6.8	0.4	15.1	8.69	4.85	0.29	1.25	1.9
60-105	8.5	8.2	9	0.19	0.55	21	0.28	4	2	351	8.5	604	0	4.0	0.1	7	1.3	0.3	20.0	13.3	5.31	0.54	0.91	2.7
105-120	8.7	8.4	3	0.13	0.42	11	0.12	2	2	172	5.9	505	0	2.2	0.1	6	2.7	0.3	12.4	9.3	2.32	0.33	0.45	2.7
12-44 *	7.3	6.6	0	0.13	1.11	22	0.60	21	4	445	32.8	493	0	2.6	2.4	41	6.7	1.0	13.1	8.56	3.17	0.28	1.13	2.1
12-44 **	6.5	5.4	0	0.04	0.36	6	0.93	6	12	90	8.9	253	0.5	0.7	6.8	97	10.2	2.2	3.2	2.48	0.44	0.08	0.2	2.5
44-60 #	8.3	7.5	0	0.13	0.64	24	0.43	7	2	423	17.7	604	0	3.0	0.4	19	6.7	0.2	15.9	9.81	4.57	0.36	1.12	2.3

**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.
- # Clay under delve line

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

