

## SANDY LOAM OVER SODIC RED CLAY

**General Description:** *Massive sandy loam to sandy clay loam over a red coarsely structured clay, calcareous with depth. Ironstone gravel occurs throughout.*

**Landform:** Very gently undulating to level plains

**Substrate:** Tertiary age clay

**Vegetation:**



<b>Type Site:</b>	Site No.:	SE164B	1:50,000 mapsheet:	7124-4 (Goroke)
	Hundred:	State of Victoria	Easting:	512100
	Section:	-	Northing:	5935670
	Sampling date:	27/08/2007	Annual rainfall:	545 mm average

Flat plain. Hard setting surface with no stones. Irrigated barley.

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-9	Dark reddish brown and very dusky red friable sandy loam with weak subangular breaking to granular structure and 2-10% ironstone nodules (2-6 mm). Abrupt to:
9-25	Reddish brown and red firm light clay with weak coarse angular blocky structure, breaking to moderate medium angular blocky, and 2-10% ironstone nodules (2-6 mm). Clear to:
25-60	Red firm light medium clay with moderate coarse subangular blocky structure and 2-10% ironstone nodules (2-6 mm). Diffuse to:
60-100	Yellowish brown and red firm light clay with moderate coarse subangular blocky structure, 10-20% soft carbonate segregations and 2-10% ironstone nodules (2-6 mm). Diffuse to:
100-150	Brownish yellow friable moderately calcareous light clay with moderate coarse prismatic structure, breaking to coarse subangular blocky, and 2-10% ironstone nodules (2-6 mm).



**Classification:** Calcic, Mesonatric, Red Sodosol; thin, non gravelly, loamy / clayey, very deep



## Summary of Properties

- Drainage:** Moderately well drained. Water perches on top of the subsoil clay for a week or so following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderate, as indicated by the exchangeable cation data. Laboratory data indicate a possible copper deficiency.
- pH:** Acidic at the surface, alkaline in the subsoil, and strongly alkaline at depth.
- Rooting depth:** 100 cm in sampling pit, but few roots below 60 cm.
- Barriers to root growth:**
- Physical:** The subsoil clay layer imposes a slight restriction on root growth, mainly by confining many roots to the faces of coarse aggregates.
- Chemical:** High chloride and elevated salinity from 25 cm, and high pH (and probably high sodicity) from 60 cm limit deep root growth.
- Waterholding capacity:** (Estimates for potential rootzone of irrigated crops)  
 Total available: 90 mm  
 Readily available: 40 mm
- Seedling emergence:** Fair to satisfactory. Tendency to seal over can reduce establishment percentage.
- Workability:** Fair. Surface tends to shatter if worked too dry, and puddle if worked too wet.
- Erosion Potential:**
- Water:** Low.
- 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	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	
0-9	6.5	5.8	0	0.21	2.93	111	2.22	50	77	274	34.3	1976	0	1.6	0.69	398	15.9	3.82	12.3	7.96	2.84	0.89	0.64	7.2
9-25	8.2	7.3	0	0.33	2.58	165	0.49	-	4	271	39.2	1007	0	-	-	-	-	-	18.2	6.98	7.44	3.15	0.61	17.3
25-60	9.0	8.1	0	0.82	4.62	665	0.25	-	3	301	107	764	-	-	-	-	-	-	-	-	-	-	-	-
60-100	9.6	8.7	4	0.98	5.95	1088	0.1	-	2	294	155	596	-	-	-	-	-	-	-	-	-	-	-	-
100-150	9.5	8.7	6	1.19	6.06	1338	0.12	-	1	260	126	548	-	-	-	-	-	-	-	-	-	-	-	-

**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.

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

