

## SANDY LOAM OVER RED CLAY

**General Description:** *Hard sandy loam to light sandy clay loam over a strongly structured red clay, calcareous from shallow depth*

**Landform:** Lower slopes and outwash fans.

**Substrate** Gritty medium to coarse textured alluvium

**Vegetation:**



**Type Site:** Site No.: MP001

1:50,000 sheet:	6728-3 (Tepko)	Hundred:	Finniss
Annual rainfall:	350 mm	Sampling date:	30/07/92
Landform:	Lower slope of gently undulating rise, 3% slope		
Surface:	Hard setting with minor quartz stone		

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Firm reddish brown massive light sandy clay loam with 2-10% quartz gravel. Abrupt to:
10-25	Hard red light clay with strong coarse breaking to medium angular blocky structure. Gradual to:
25-50	Firm red highly calcareous clay loam with moderate polyhedral structure. Clear to:
50-85	Firm yellowish red with brown and yellow mottles highly calcareous clay loam with moderate polyhedral structure. Clear to:
85-125	Friable moderately calcareous red and brown coarse sandy loam. Clear to:
125-160	Hard massive orange, yellow and brown sandy clay loam. Clear to:
160-195	Hard massive red and brown sandy loam.  Minor quartz grit throughout.



**Classification:** Sodic, Hypercalcic, Red Chromosol; medium, slightly gravelly, loamy / clayey, moderate

## Summary of Properties

**Drainage** Well drained. The soil is unlikely to remain wet for more than a day or so following heavy or prolonged rainfall.

**Fertility** Inherent fertility is high as indicated by the exchangeable cation data. Except for phosphorus levels which are marginal, all other measured nutrient elements are in adequate supply. Organic carbon concentration is high.

**pH** Neutral at the surface, strongly alkaline with depth.

**Rooting depth** 85 cm in pit but few roots below 50 cm.

### Barriers to root growth

**Physical:** The clayey subsoil presents a slight barrier due to its hardness.

**Chemical:** From 85 cm, pH, boron concentration and sodicity are all high enough to prevent root growth.

**Water holding capacity** Approximately 120 mm in the root zone.

**Seedling emergence:** Fair, due to hard setting, sealing surface.

**Workability:** Fair. There is a narrow moisture range between soil being too hard and prone to shattering, and too wet, causing pugging.

### Erosion Potential

**Water:** Moderately 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	Org.C %	Avail. P mg/kg	Avail. K 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	
Paddock	7.1	6.8	<0.1	0.11	0.69	1.53	25	660	1.8	0.7	7.8	16.0	1.0	16.1	12.46	3.42	0.27	1.82	1.7
0-10	7.4	6.9	0.1	0.14	0.68	1.70	43	740	1.7	0.6	12.6	13.8	1.5	14.4	10.98	3.45	0.26	1.96	1.8
10-25	7.8	7.4	0.5	0.22	0.48	1.16	<5	690	3.9	1.2	8.6	2.7	0.4	31.1	22.34	8.33	1.03	2.37	3.3
25-50	8.7	8.0	28.3	0.23	0.61	0.61	<5	350	3.6	1.0	5.9	1.0	0.2	22.3	13.13	7.30	1.75	1.11	7.8
50-85	9.2	8.2	23.2	0.42	1.54	0.28	<5	470	6.8	0.6	4.8	0.6	0.2	18.1	6.10	8.62	3.82	1.40	21.1
85-125	9.4	8.6	1.9	0.47	1.23	0.09	<5	410	16.6	0.3	3.1	0.1	0.2	13.3	2.35	7.18	3.92	0.85	29.5
125-160	9.6	8.7	0.4	0.37	1.90	0.03	<5	280	13.1	0.2	4.1	0.1	0.2	9.6	1.21	5.12	3.46	0.56	36.0
160-195	9.4	8.6	<0.1	0.28	0.68	0.03	<5	280	14.0	0.2	4.9	0.1	0.2	11.7	1.12	5.77	4.73	0.58	40.4

**Note:** Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.

CEC (cation exchange capacity) is 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