

## HARD SANDY LOAM OVER RED CLAY

**General Description:** *Hard loamy surface abruptly overlying a red brown well structured clayey subsoil with soft carbonate at depth, grading to weathering rock*

**Landform:** Undulating rises

**Substrate:** Highly weathered fine grained basement rock

**Vegetation:**



**Type Site:** Site No.: CU032

1:50,000 sheet: 6631-3 (Bundaleer)      Hundred: Reynolds  
Annual rainfall: 425 mm      Sampling date: 14/01/94  
Surface: Midslope of an undulating rise, with a slope of 3%  
Surface: Firm surface with minor surface calcrete and quartz stone

### Soil Description:

Depth (cm)	Description
0-12	Dark brown massive firm fine sandy loam. Clear to:
12-31	Brown massive firm fine sandy loam. Gradual to:
31-48	Brown massive firm loam with minor quartz gravel. Clear to:
48-100	Red very firm medium heavy clay with strong coarse prismatic structure, breaking to very fine polyhedral. Gradual to:
100-155	Red firm highly calcareous medium clay with moderate fine polyhedral structure. Diffuse to:
155-205	Red firm highly calcareous medium clay with strong fine polyhedral structure. Diffuse to:
205-230	Red firm highly calcareous medium clay with weak fine polyhedral structure and 10-20% quartz and shale fragments.



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

## Summary of Properties

<b>Drainage</b>	Moderately well drained.
<b>Fertility</b>	Natural fertility is high as indicated by the exchangeable cation data. Surface fertility relies on organic carbon, the level of which is satisfactory. Phosphorus is low in the paddock sample.
<b>pH</b>	Slightly acidic at the surface, alkaline with depth.
<b>Rooting depth</b>	Approximately 110 cm in pit.
<b>Barriers to root growth</b>	
<b>Physical:</b>	Hard clayey subsoil and massive surface soil restrict root distribution.
<b>Chemical:</b>	There are no apparent chemical barriers.
<b>Water holding capacity</b>	More than 100 mm in the root zone, although not all is available due to poor root distribution patterns below 48 cm.
<b>Seedling emergence</b>	Fair to good, provided that organic matter levels are maintained to preserve surface condition.
<b>Workability</b>	Good to fair.
<b>Erosion Potential</b>	
<b>Water:</b>	Moderate, due to the slope and erodible surface soil.
<b>Wind:</b>	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	SO <sub>4</sub> -S 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	6.3	6.2	0	0.10	0.58	1.3	6	432	-	1.6	1.8	25	48	1.0	11.8	8.3	2.0	0.26	1.09	2.2
0-12	6.5	6.4	0	0.11	0.70	1.6	37	560	-	1.3	1.6	16	43	2.4	13.1	9.8	2.3	0.17	1.50	1.3
12-31	6.5	6.1	0	0.06	0.40	0.6	15	305	-	1.1	1.6	11	31	0.3	9.0	6.3	1.8	0.23	0.75	2.6
31-48	6.7	6.2	0	0.04	0.18	0.3	9	185	-	1.1	1.6	9	25	0.1	7.3	4.8	2.3	0.27	0.41	3.7
48-100	6.8	6.1	0	0.09	0.47	0.4	4	291	-	2.6	2.4	13	9.6	0.2	26.9	11.7	12.1	1.38	1.33	5.1
100-155	8.6	8.1	2.7	0.18	0.55	0.1	5	247	-	2.8	2.0	3	2.4	0.2	19.0	7.7	8.8	1.33	0.99	7.0
155-205	8.6	8.1	1.4	0.21	0.51	0.1	4	304	-	5.7	1.1	3	1.5	0.1	25.7	8.9	13.4	2.42	1.33	9.4
205-230	8.8	8.2	5.7	0.20	0.50	0.1	6	280	-	3.9	1.0	3	1.4	0.2	22.1	7.7	11.3	1.99	1.09	9.0

**Note:** Paddock sample bulked from 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.