

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 mapsheet:	6631-3 (Bundaleer)
	Hundred:	Reynolds	Easting:	279300
	Section:	280	Northing:	6300350
	Sampling date:	14/01/1994	Annual rainfall:	475 mm average

Midslope of an undulating rise, with a slope of 3%, firm surface and 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

Drainage:	Moderately well drained.
Fertility:	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.
pH:	Slightly acidic at the surface, alkaline with depth.
Rooting depth:	Approximately 110 cm in pit.
Barriers to root growth:	
Physical:	Hard clayey subsoil and massive surface soil restrict root distribution.
Chemical:	There are no apparent chemical barriers.
Waterholding capacity:	More than 100 mm in the rootzone, although not all is available due to poor root distribution patterns below 48 cm.
Seedling emergence:	Fair to good, provided that organic matter levels are maintained to preserve surface condition.
Workability:	Good to fair.
Erosion Potential:	
Water:	Moderate, due to the slope and erodible surface soil.
Wind:	Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ 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.

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

