

SANDY LOAM OVER CLAY ON ROCK

(Shallow Cleve soil)

General Description: *Hard sandy loam over a red or brown clay, calcareous with depth over weathering basement rock*

Landform: Undulating rises and low hills.

Substrate: Weathering schist or meta sandstone mantled by fine carbonate.

Vegetation:



Type Site:	Site No.:	EE053	1:50,000 mapsheet:	6130-1 (Rudall)
	Hundred:	Campoona	Easting:	634750
	Section:	31	Northing:	6285250
	Sampling date:	14/4/1989	Annual rainfall:	415 mm average

Slope of undulating low hill. Hard setting surface.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-8	Dark brown massive sandy loam. Abrupt to:
8-20	Brown medium clay with strong coarse subangular blocky structure. Clear to:
20-35	Dark yellowish brown very highly calcareous medium clay with moderate coarse subangular blocky structure. Gradual to:
35-70	Reddish brown very highly calcareous massive sandy clay. Diffuse to:
70-140	Reddish brown highly calcareous fine sandy clay loam (deeply weathered rock).



Classification: Sodic, Calcic, Brown Chromosol; thin, non-gravelly, loamy / clayey, deep



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:** Natural fertility is moderate, as indicated by the exchangeable cation data. Nutrient retention capacity is moderately low in the surface, but high in the subsoil at shallow depth. Regular phosphorus applications are essential. Nitrogen levels depend on legume status of pastures and cropping history.
- pH:** Acidic at the surface, strongly alkaline with depth.
- Rooting depth:** Not recorded. Estimate 70 cm.
- Barriers to root growth:**
- Physical:** The clayey subsoil restricts root growth to some extent. Rootzone depth is limited by underlying rock where it is within 100 cm of the surface.
 - Chemical:** High pH from 70 cm limits further root growth.
- Waterholding capacity:** Approximately 85 mm in the rootzone.
- Seedling emergence:** Fair to satisfactory depending on the degree of surface sealing.
- Workability:** Some restriction caused by poor surface structure. Soil tends to shatter if worked too dry, and puddle if worked too wet.
- Erosion Potential:**
- Water:** Moderate.
 - Wind:** Low to moderately 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	
0-8	5.7	5.1	0	0.20	2.18	-	-	-	-	1.1	0.86	37	124	0.90	8.5	3.30	1.60	0.11	0.52	1
8-20	6.7	6.1	1	0.18	1.25	-	-	-	-	3.1	1.49	27	7.04	0.19	23.0	?	8.80	0.62	1.20	3
20-35	8.3	7.5	5	0.23	1.03	-	-	-	-	3.0	1.95	15	10.6	0.17	19.0	?	8.00	0.70	0.90	4
35-70	9.0	7.9	10	0.22	0.85	-	-	-	-	3.1	1.36	8.2	3.57	0.16	13.0	?	7.20	1.20	0.59	9
70-140	9.7	8.1	3	0.25	0.79	-	-	-	-	3.5	0.61	5.3	1.25	0.21	7.0	?	5.60	1.70	0.37	24

Note: 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.

* Exchangeable calcium (Ca) values not presented for sub-surface layers because the laboratory procedure used was inappropriate for calcareous samples.

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

