

CALCAREOUS SANDY CLAY LOAM

(Bookabie soil)

General Description: *Calcareous sandy loam to sandy clay loam, continuing below 100 cm with variable carbonate rubble*

Landform: Undulating rises.

Substrate: Medium textured very highly calcareous windblown Woorinen Formation deposits, overlying granite.

Vegetation: Mallee.



Type Site:	Site No.:	EW093	1:50,000 mapsheet:	5733-1 (Nunyah)
	Hundred:	Nunyah	Easting:	441800
	Section:	7	Northing:	6439110
	Sampling date:	24/11/1993	Annual rainfall:	290 mm average

Upper slope of undulating rise, 3% slope. Firm surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark reddish brown friable highly calcareous sandy clay loam with moderate fine subangular blocky structure. Clear to:
10-30	Brown soft very highly calcareous sandy loam with minor carbonate concretions (2-6 mm). Gradual to:
30-45	Strong brown soft very highly calcareous sandy loam with 2-10% carbonate concretions (2-6 mm). Gradual to:
45-85	Light brown soft very highly calcareous sandy clay loam. Gradual to:
85-190	Reddish yellow soft very highly calcareous sandy clay loam.



Classification: Epihypersodic, Regolithic, Hypercalcic Calcarosol; thick, non-gravelly, clay loamy / clay loamy, very deep



Summary of Properties

- Drainage:** Rapid. The soil rarely remains wet for more than a few hours at a time.
- Fertility:** Inherent fertility is moderately low as indicated by the exchangeable cation data. Phosphorus levels are high, and although zinc and copper deficiencies can be expected from time to time, concentrations at the sampling site are adequate. Nitrogen levels depend on legume content of pastures and cropping history. Organic carbon concentrations are marginally low.
- pH:** Alkaline to strongly alkaline throughout.
- Rooting depth:** 150 cm in pit, but few roots below 30 cm.
- Barriers to root growth:**
- Physical:** There are no physical barriers.
 - Chemical:** High boron concentrations and moderately high salinity from 45 cm restrict deeper root growth.
- Waterholding capacity:** Approximately 65 mm in the rootzone.
- Seedling emergence:** Satisfactory.
- Workability:** Firm surface is easily worked.
- Erosion Potential:**
- Water:** Moderately low.
 - Wind:** 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	
0-10	8.6	7.8	4	0.12	0.58	0.82	55	700	-	2.8	0.31	2.4	4.5	0.68	9.7	8.66	1.12	0.06	1.57	0.6
10-30	8.9	8.0	11	0.16	0.81	0.93	3.2	270	-	7.0	0.23	2.2	2.1	0.23	11.6	10.34	2.80	0.39	0.69	3.4
30-45	9.3	8.4	16	0.76	6.21	0.69	3.2	260	-	11	0.22	2.0	1.7	0.27	8.7	5.40	3.70	2.44	0.63	28.0
45-85	9.3	8.5	31	1.64	14.07	0.29	3.6	470	-	35	0.17	1.6	0.71	0.22	7.2	2.36	4.21	3.59	1.15	49.9
85-190	8.6	8.2	24	2.64	14.18	0.16	2.8	530	-	26	0.28	1.6	0.73	0.53	7.5	5.35	3.49	2.80	1.22	37.3

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

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

