

CALCAREOUS CLAY LOAM

(Wiabuna soil – clay loamy)

General Description: *Calcareous clay loam becoming more clayey and calcareous at depth with variable rubble content*

Landform: Gently inclined outwash fan.

Substrate: Sandy alluvial sediments.

Vegetation: Mallee.



Type Site:	Site No.:	EE137	1:50,000 mapsheet:	6130-1 (Rudall)
	Hundred:	Yadnarie	Easting:	634410
	Section:	8	Northing:	6264960
	Sampling date:	7/09/1995	Annual rainfall:	350 mm average

Upper slope of outwash fan, 1% slope. Firm surface with 2-10% calcrete stone.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Brown friable highly calcareous clay loam with moderate fine subangular blocky structure. Clear to:
10-20	Reddish brown friable massive very highly calcareous light clay. Clear to:
20-30	Reddish brown soft massive very highly calcareous light clay with 10-20% calcrete fragments (6-20 mm). Abrupt to:
30-55	Rubbly calcrete in a matrix of yellowish red soft massive very highly calcareous light clay. Clear to:
55-65	Reddish yellow soft massive very highly calcareous light clay with 10-20% calcrete fragments (6-20 mm). Clear to:
65-150	Red firm massive very highly calcareous loamy coarse sand with abundant quartz gravel.



Classification: Epihypersodic, Regolithic, Lithocalcic Calcarosol; medium, slightly gravelly, clay loamy / clayey, moderate



Summary of Properties

- Drainage:** Well drained. The soil rarely remains wet for more than a couple of days following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderate, as indicated by the exchangeable cation data. High clay content and favourable organic carbon levels provide ample nutrient retention capacity. Concentrations of all tested elements are adequate at the sampling site. Nitrogen levels depend on legume content of pastures and cropping history.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 65 cm in pit.
- Barriers to root growth:**
- Physical:** There are no physical barriers.
 - Chemical:** High pH from 30 cm and high sodicity from 55 cm restrict deeper root growth.
- Waterholding capacity:** Approximately 60 mm in the rootzone.
- Seedling emergence:** Satisfactory.
- Workability:** Firm surface is easily worked.
- Erosion Potential:**
- Water:** Low.
 - 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	
0-10	8.8	8.1	6	0.15	0.77	1.2	28	473	28	2.3	1.0	5	4.8	0.9	12.4	12.02	2.76	0.16	1.21	1.3
10-20	8.9	8.3	9	0.14	0.63	0.7	6	348	40	2.5	0.9	4	2.4	0.3	11.7	11.20	3.33	0.25	0.90	2.2
20-30	9.2	8.5	12	0.20	1.09	0.8	5	266	53	3.8	1.5	4	3.8	0.3	11.8	9.37	5.07	0.54	0.70	4.6
30-55	9.8	8.7	29	0.34	2.16	0.4	4	266	35	7.7	1.5	2	1.3	0.2	9.3	3.20	7.75	1.73	0.71	18.6
55-65	10.2	9.0	40	0.62	2.50	<0.1	4	409	56	10.8	1.1	1	0.7	0.4	8.6	1.32	5.85	3.84	1.00	44.7
65-150	10.2	8.9	<1	0.55	2.86	<0.1	<4	389	36	13.5	0.6	2	0.5	0.2	8.2	0.87	2.93	4.67	0.79	56.9

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](#)

