

CALCAREOUS SANDY CLAY LOAM

(Wiabuna soil)

General Description: *Calcareous sandy clay loam to clay loam grading to a very highly calcareous light clay merging with heavy clay at depth*

Landform: Gently undulating rises.

Substrate: Coarsely structured heavy clay (Hindmarsh Clay equivalent).

Vegetation: Mallee



Type Site: Site No.: EE051
Hundred: Cortlinye
Section: 25
Sampling date: 17/3/1989

1:50,000 mapsheet: 6131-1 (Kimba)
Easting: 622700
Northing: 6345500
Annual rainfall: 330 mm average

Slope of gentle rise.

Soil Description:

Depth (cm)	Description
0-6	Highly calcareous reddish brown light sandy clay loam. Clear to:
6-20	Highly calcareous brown sandy clay loam. Clear to:
20-35	Very highly calcareous orange light clay. Gradual to:
35-65	Very highly calcareous orange medium clay. Gradual to:
65-110	Slightly calcareous red coarsely structured medium clay.



Classification: Epihypersodic, Regolithic, Hypercalcic Calcarosol; medium, non-gravelly, loamy / clayey, moderate



Summary of Properties

Drainage: Moderately well drained. The clayey substrate prevents free drainage and the soil may remain wet for up to a week following heavy or prolonged rainfall.

Fertility: Natural fertility is moderate as indicated by the exchangeable cation data. The relatively high clay content allows good nutrient retention capacity, but moderate carbonate levels reduce availability of phosphate and some trace elements. Zinc and possibly copper deficiencies can be expected, along with nitrogen and phosphorus.

pH: Alkaline at the surface, strongly alkaline with depth.

Rooting depth: 65 cm, but few roots below 35 cm in pit.

Barriers to root growth:

Physical: The clayey substrate is hard and coarsely structured, confining roots to the surfaces of the aggregates.

Chemical: High pH, sodicity and boron concentrations from 35 cm. Salinity is also elevated from this depth.

Waterholding capacity: Approximately 65 mm in the rootzone.

Seedling emergence: Satisfactory.

Workability: Firm surface is easily worked.

Erosion Potential:

Water: Moderately 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	
0-6	8.6	8.0	6	0.26	1.66	-	-	-	-	3.08	1.69	6	19.1	0.28	19.0	?	2.80	0.28	1.10	1
6-20	8.7	8.1	14	0.32	2.35	-	-	-	-	3.45	1.74	6	11.7	0.10	16.0	?	3.60	0.37	0.67	2
20-35	9.2	8.4	27	0.64	5.37	-	-	-	-	9.06	1.87	9	6.57	0.11	16.0	?	6.90	1.60	0.60	10
35-65	9.7	8.8	21	1.14	8.23	-	-	-	-	40.5	1.79	10	2.01	0.13	22.0	?	12.00	7.20	1.50	33
65-110	9.2	8.1	2	1.70	11.76	-	-	-	-	67.0	1.55	12	3.34	0.11	29.0	?	15.00	9.99	2.40	34

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 because the laboratory procedure used was inappropriate for calcareous samples.

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

