

DEEP RUBBLY CALCAREOUS LOAM

General Description: *Medium thickness calcareous sandy loam to loam over rubbly carbonate, grading to very highly calcareous sandy loam to clay loam with variable rubble at depth*

Landform: Gently undulating rises.

Substrate: Very highly calcareous medium to fine grained Woorinen Formation deposits.

Vegetation:



Type Site: Site No.: CY023

1:50,000 sheet:	6428-4 (Curramulka)	Hundred:	Wauraltee
Annual rainfall:	365 mm	Sampling date:	22/12/93
Landform:	Very gentle slope of 1%		
Surface:	Soft with 2-10% calcrete stone (6-20 mm)		

Soil Description:

Depth (cm)	Description
0-10	Dark brown friable highly calcareous loam with weak granular structure and 2-10% carbonate nodules (6-20 mm). Clear to:
10-28	Dark brown friable massive very highly calcareous fine sandy clay loam with 20-50% carbonate nodules (2-20 mm). Abrupt to:
28-40	Rubbly calcrete comprising more than 90% carbonate nodules (2-20 mm). Clear to:
40-55	Reddish yellow friable massive sandy loam with 50-90% carbonate nodules (6-20 mm). Clear to:
55-100	Reddish yellow friable massive sandy loam with 20-50% carbonate nodules (2-20 mm). Gradual to:
100-130	Reddish yellow friable massive fine sandy light clay with 2-10% carbonate nodules (2-6 mm).



Classification: Endohypersodic, Regolithic, Lithocalcic Calcarosol; medium, slightly gravelly, loamy / loamy, deep

Summary of Properties

Drainage	Well drained to rapidly drained. Soil never remains wet for more than a day or so.
Fertility	Natural fertility is moderate as indicated by the exchangeable cation data. Surface fertility relies on organic matter levels which are high at the sampling site, and on adequate phosphorus concentrations (also satisfactory). Nutrient availability problems due to the high free lime content (CaCO ₃ %) and high pH are characteristic of this soil. Zinc and copper deficiencies can be expected from time to time.
pH	Alkaline at the surface, strongly alkaline at depth.
Rooting depth	Approximately 100 cm in pit.
Barriers to root growth	
Physical:	The rubble layer can impede root growth where it is sufficiently dense.
Chemical:	High sodicity and pH from 100 cm restrict deeper root growth.
Water holding capacity	Approximately 70 mm in rootzone. Limited in subsoil by hard carbonate nodules and fragments. Some of this is effectively unavailable due to low root density in the deep subsoil.
Seedling emergence:	Good. Organic matter levels need to be maintained to preserve soil structure.
Workability:	Good.
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 -S 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	8.1	7.8	4.4	0.17	0.82	2.1	44	829	-	2.3	0.7	6	8.4	0.5	27.0	22.6	2.6	0.3	3.5	1.0
0-10	8.1	7.8	5.4	0.18	0.90	2.1	54	896	-	2.4	0.6	6	9.4	0.6	25.7	21.9	2.6	0.2	3.7	0.9
10-28	8.2	7.9	14.6	0.18	0.62	1.6	24	568	-	2.6	0.9	7	4.8	0.5	24.3	20.6	2.8	0.3	2.5	1.2
28-40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40-55	8.6	8.0	62.9	0.23	1.32	0.5	8	151	-	3.8	0.6	5	1.1	0.4	10.5	8.2	2.9	0.8	0.7	8.0
55-100	8.9	8.1	69.9	0.33	2.44	0.4	4	246	-	5.1	0.4	1	0.2	0.2	7.5	4.2	3.2	1.4	1.0	18.8
100-130	9.5	8.4	70.1	0.61	3.64	0.3	4	346	-	9.4	0.4	2	0.5	0.3	7.5	2.3	4.2	2.8	1.2	36.9

Note: Paddock sample bulked from 20 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