

CALCAREOUS SANDY LOAM OVER WEATHERING ROCK

General Description: *Calcareous sandy loam to sandy clay loam, becoming more clayey and calcareous with depth, overlying weathering basement rock within 100 cm*

Landform: Undulating rises.

Substrate: Gneisses of the Mangalo / Cooke Gap Formations.

Vegetation:



Type Site:	Site No.:	EE207	1:50,000 mapsheet:	6130-1 (Rudall)
	Hundred:	Yadnarie	Easting:	635550
	Section:	50	Northing:	6268950
	Sampling date:	17/09/2001	Annual rainfall:	375 mm average

Midslope (5%) of an undulating rise. Soft surface, with 2-10% quartz stones (6-20 mm).

Soil Description:

Depth (cm)	Description
0-10	Dark brown firm massive highly calcareous sandy clay loam. Clear to:
10-25	Strong brown massive friable very highly calcareous fine sandy light clay with 2-10% gneiss fragments (20-60 mm). Diffuse to:
25-45	Reddish yellow massive friable very highly calcareous fine sandy light clay with 10-20% gneiss fragments (20-60 mm). Clear to:
45-70	Weathering granite with minor pockets of fine carbonate.



Classification: Epihypersodic, Paralithic, Hypercalcic Calcarosol; medium, slightly gravelly, clay loamy / clayey, shallow



Summary of Properties

- Drainage:** Rapidly drained. The soil is unlikely to remain wet for more than a few hours following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is high, as indicated by the exchangeable cation data. Concentrations of all measured nutrient elements are satisfactory, but lime-induced deficiencies of phosphorus, manganese, zinc and copper are possible. Organic carbon levels are good for this rainfall zone.
- pH:** Alkaline throughout.
- Rooting depth:** A few roots penetrate fissures in the weathering rock, but most are in the upper 45 cm.
- Barriers to root growth:**
- Physical:** The underlying rock is the only physical barrier – depth likely to be highly variable.
 - Chemical:** There are no chemical barriers to root growth.
- Waterholding capacity:** Approximately 70 mm above the weathering rock.
- Seedling emergence:** Satisfactory, but surface is prone to sealing if excessively worked.
- Workability:** The calcareous soil is easily worked, but is liable to puddle if over-worked.
- Erosion Potential:**
- Water:** Moderate, due to the slope of the land.
 - Wind:** Moderately low. Calcareous surfaces become powdery if over-grazed or over-cultivated, predisposing them to wind erosion.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	Org.C %	NO ₃ mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum of cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-10	8.5	8.1	nd	0.13	1.40	6	42	335	5.7	1.7	0.43	5.6	1.05	1.81	21.1	17.5	2.54	0.26	0.85	1.2
10-25	8.8	8.4	nd	0.15	0.89	4	7	160	13.8	2.4	1.00	5.6	0.19	1.17	25.4	19.4	4.82	0.83	0.39	3.3
25-45	9.1	8.5	nd	0.96	0.55	6	6	180	147	5.2	1.18	3.4	0.18	0.99	24.4	11.0	7.81	5.12	0.48	21.0
45-70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Sum of cations in neutral to alkaline soils is an approximation of cation exchange capacity (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 sum of cations.

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

