

CALCAREOUS SANDY LOAM OVER ROCK

General Description: *Calcareous sandy loam over a very highly calcareous and often rubbly sandy loam to sandy clay loam, grading to weathering basement rock*

Landform: Undulating rises.

Substrate: Schists of the Mangalo / Cooke Gap Formation.

Vegetation:



Type Site: Site No.: EE211
 1:50,000 sheet: 6230-4 (Mangalo) Hundred: Mann
 Annual rainfall: 380 mm Sampling date: 17/09/01
 Landform: Upper slope of undulating rise, 4% slope
 Surface: Soft with minor calcrete and schist fragments (6-20 mm)

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark reddish brown soft massive slightly calcareous sandy loam. Clear to:
10-21	Dark reddish brown soft massive slightly calcareous light sandy clay loam with 10-20% carbonate nodules (2-6 mm) and 2-10% schist fragments (6-20 mm). Clear to:
21-50	Brown soft massive very highly calcareous sandy loam with 20-50% carbonate nodules (2-20 mm). Gradual to:
50-75	Light brown soft massive very highly calcareous sandy loam with 20-50% carbonate nodules (2-20 mm) and 2-10% schist fragments (60-200 mm). Gradual to:
75-110	Reddish yellow friable massive very highly calcareous sandy loam with more than 50% schist fragments (60-200 mm). Diffuse to:
110-150	Weathering schist.



Classification: Ceteric, Paralithic, Supracalcic Calcarosol; medium, slightly gravelly, loamy / loamy, deep

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 moderately high, as indicated by the exchangeable cation data. Concentrations of all measured elements are satisfactory, and organic carbon levels are adequate for this environment. Fixation of phosphorus, zinc, manganese and copper (which is characteristic of calcareous soils) will be minimal at this site due to the low carbonate levels at the surface.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 110 cm in the pit.
- Barriers to root growth:**
- Physical:** There are no physical barriers above the basement rock (not limiting at this site)
 - Chemical:** High pH from 75 cm restricts root growth to some extent, but as salinity, boron concentrations and sodicity are relatively low, root growth is not severely impeded.
- Water holding capacity:** Approximately 100 mm in the potential root zone.
- Seedling emergence:** Satisfactory.
- Workability:** The soft surface is easily worked, and unlikely to be degraded unless severely over-cultivated or over-grazed.

Erosion Potential

- Water:** Moderately low.
- Wind:** Moderately low. These soils can become fluffy and erodible after repeated working or livestock trampling.

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	8.4	7.8	nd	0.08	1.09	5	41	555	4.2	1.3	0.53	5.8	1.15	5.72	13.2	9.78	1.93	0.15	1.38	1.1
10-21	8.5	7.9	nd	0.10	0.79	3	20	288	2.3	0.8	0.52	4.0	0.35	2.34	17.8	14.7	2.26	0.18	0.73	1.0
21-50	9.0	8.1	nd	0.10	0.97	3	7	92	4.9	0.9	1.24	2.3	0.77	1.61	17.2	14.9	1.92	0.26	0.20	1.5
50-75	9.4	8.3	nd	0.18	0.68	3	5	98	14.3	1.5	2.34	1.3	1.05	0.71	16.1	10.6	4.11	1.11	0.25	6.9
75-110	9.6	8.5	nd	0.27	0.50	3	3	174	20.8	2.2	1.81	0.5	1.14	0.62	21.6	11.1	7.03	3.10	0.43	14.3

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.