

## GRADATIONAL CALCAREOUS LOAM

(Wiabuna soil)

**General Description:** *Calcareous sandy loam to clay loam grading to a very highly calcareous sandy clay loam to light clay, becoming more clayey with depth*

**Landform:** Undulating rises.

**Substrate:** Heavy clay (deeply weathered rock) grading to freshly weathered rock.

**Vegetation:**

<b>Type Site:</b>	Site No.:	EE064	1:50,000 mapsheet:	6230-4 (Mangalo)
	Hundred:	Mann	Easting:	639510
	Section:		Northing:	6270830
	Sampling date:	20/1/1993	Annual rainfall:	375 mm average

Lower slope of undulating rise, 1% slope. Soft surface with minor large schist stones.

### Soil Description:

Depth (cm)	Description
0-9	Dark brown soft massive coarse sandy loam (recent wash?). Clear to:
9-22	Dark reddish brown friable massive very highly calcareous sandy clay loam with 2-10% fine quartz gravel. Clear to:
22-46	Strong brown friable very highly calcareous medium clay with weak subangular blocky structure and 2-10% fine quartz gravel. Clear to:
46-64	Yellowish red friable very highly calcareous medium clay with moderate subangular blocky structure and 2-10% fine quartz gravel. Clear to:
64-80	Red hard moderately calcareous medium clay with strong fine angular blocky structure and 20-50% quartz stones. Abrupt to:
80-130	Red hard heavy clay with strong fine angular blocky structure. Clear to:
130-230	Weathered slate.



**Classification:** Endohypersodic, Regolithic, Hypercalcic Calcarosol; medium, non-gravelly, clay loamy / clayey, moderate



## Summary of Properties

- Drainage:** Well drained. The soil rarely remains wet for more than a day or so following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderately low as indicated by the exchangeable cation data. High carbonate levels to within a few cm of the surface tie up phosphorus and regular applications are essential. Levels are satisfactory at the sampling site. Nitrogen status depends on legume content of pastures and cropping history. Trace element deficiencies may occur from time to time - concentrations are adequate at the site. Organic carbon levels are low.
- pH:** Neutral to slightly alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 100 cm in pit.
- Barriers to root growth:**
- Physical:** The hard clayey substrate restricts root growth.
  - Chemical:** High pH, high boron concentrations and high sodicity limit root growth below 80 cm.
- Waterholding capacity:** Approximately 100 mm in the rootzone.
- Seedling emergence:** Satisfactory.
- Workability:** Soft surface is easily worked.
- Erosion Potential:**
- Water:** Low.
  - Wind:** Moderately low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> 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	7.0	6.0	<1	0.04	0.38	0.6	23	390	-	2.5	0.42	9.1	22	0.87	6.5	4.01	1.25	0.24	0.85	3.7
0-9	7.9	7.3	<1	0.12	1.14	1.0	53	570	-	2.3	0.45	3.2	7.3	1.2	9.1	5.79	1.07	0.04	1.70	0.44
9-22	8.8	8.1	14	0.12	1.14	0.5	13	680	-	3.4	1.2	21	12	0.26	12.8	10.69	2.72	0.21	1.79	1.6
22-46	9.0	8.1	27	0.13	0.85	0.2	5	360	-	2.5	1.3	16	9.5	0.19	11.5	7.85	1.37	0.46	1.01	4.0
46-64	9.3	8.2	30	0.20	1.30	-	-	-	-	4.9	0.93	21	12	0.18	15.0	5.00	6.92	1.46	0.55	9.7
64-80	9.7	8.4	8	0.30	1.95	-	-	-	-	13	0.61	100	68	0.24	11.6	2.20	6.07	2.65	0.52	22.8
80-130	9.5	8.7	2	0.79	5.14	-	-	-	-	38	0.47	7.0	1.10	0.16	16.3	1.18	7.99	9.40	0.96	57.7

**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

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

