

GRADATIONAL RED BROWN LOAM ON CALCARENITE

General Description: *Organic loam over well-structured red clay on highly calcareous rubbly light clay over calcarenite.*

Landform: Stranded coastal dune range

Substrate: Calcarenite

Vegetation: -



Type Site: Site No.: SE082

1:50,000 sheet:	6922-1 (Millicent)	Hundred:	Mayurra
Annual rainfall:	760 mm	Sampling date:	29/09/04
Landform:	Mid to lower slope of dune range, 20% slope		
Surface:	Soft with extensive calcrete stone and outcropping reefs of calcreted calcarenite. Shallow soils occur upslope in close proximity.		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-30	Black non-calcareous loam, with moderate medium size subangular blocky structure. Diffuse change to:
30-65	Dark reddish brown sandy light clay with medium size subangular blocky structure. Non-calcareous. Sharp break to:
65-80	Reddish brown, massive sandy light clay with many (50%) carbonate nodules and fragments.
80-180	Moderately hard massive calcarenite (60% hard fragments).



Classification: Melanic, Supracalcic, Red Dermosol: thick, non-gravelly, loamy/clayey, moderate

Summary of Properties

Drainage: Well drained. Soil rarely remains wet for more than a day or so following heavy or prolonged rainfall.

Fertility: Inherent fertility is high, as indicated by the exchangeable cation data. Phosphorus and potassium levels are high, sulphate is low. Trace copper is very low, zinc is marginal to low, manganese satisfactory.

pH: Slightly alkaline becoming strongly alkaline below 65.

Rooting depth: Most root growth in upper 65 cm in exposure.

Barriers to root growth:

Physical: No physical barriers in type profile, but shallow calcrete is a major barrier in shallow soils upslope.

Chemical: There are no apparent chemical barriers.

Water holding capacity: Approximately 105 mm (accessible in top 65 cm).

Seedling emergence: Satisfactory.

Workability: Good, except upslope where soils are shallower and rocks outcrop.

Erosion Potential

Water: Low to moderate.

Wind: Low

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-30	7.4	6.8	0.7	0.11	0.41	4.2	47	371	13	5.5	1.1	0.4	166	1.1	40.4	33.9	30.1	2.7	0.1	1.0	0.3
30-65	7.8	7.1	0.5	0.10	0.28	0.8	28	265	11	3.6	1.0	0.2	77	0.3	25.7	22.0	17.2	3.8	0.4	0.7	1.6
65-80	8.4	7.6	40	0.10	0.33	0.8	8	158	11	3.5	1.0	0.1	9	0.2	2.8	18.9	16.4	1.8	0.3	0.4	1.4
80-180	8.6	7.6	11	0.08	0.25	0.3	3	44	7	4.2	0.3	0.1	3	0.2	0.7	10.3	9.5	0.6	0.1	0.1	1.3

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (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 CEC (in this case, estimated by the sum of cations).