

DEEP SAND

General Description: *Very thick brown loamy sand with a weak accumulation of clay at depth, immediately overlying calcreted calcarenite*

Landform: Undulating to rolling rises associated with ancient coastal dunefields

Substrate: Bridgewater Formation - calcarenite or calcareous sand, cemented into a weak to strong calcrete pan in its upper part

Vegetation: Coastal mallee



Type Site: Site No.: CH083

1:50,000 sheet: 6627-2 (Milang)	Hundred: Nangkita
Annual rainfall: 450 mm	Sampling date: 02/06/95
Landform: Upper slope of an undulating rise, 9% slope	
Surface: Loose with no stones	

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown loose sand. Clear to:
10-45	Brown loose sand. Diffuse to:
45-80	Light brown loose sand. Diffuse to:
80-115	Orange loose sand. Abrupt to:
115-125	Orange weakly calcareous massive clayey sand. Abrupt to:
125-150	Very pale brown weakly cemented very highly calcareous light sandy clay loam.



Classification: Calcareous, Petrocalcic, Brown-Orthic Tenosol; medium, non-gravelly, sandy/sandy, deep

Summary of Properties

Drainage	The soil is very sandy and permeable. The profile is never likely to be saturated for more than an hour or so.
Fertility	Natural fertility is low due to the low clay content. This is supported by the low CEC values. At the sampling site phosphorus is deficient and potassium and sulphur levels are marginal. Calcium, magnesium, copper and iron deficiencies are also indicated. Organic carbon levels are satisfactory for a sandy soil in this rainfall zone.
pH	Slightly acidic at the surface, alkaline in the subsoil.
Rooting depth	125 cm in pit, but there are few roots below 80 cm.
Barriers to root growth	
Physical:	The cemented carbonate layer can impede root growth depending on its thickness and density, but at 125 cm depth is no problem here. However, when this material occurs at shallower depth, root growth can be restricted.
Chemical:	Salt, boron and sodium levels are of no concern.
Water holding capacity	Approximately 100 mm in root zone (high).
Seedling emergence	Good, except where non wetting sands occur.
Workability	Good.
Erosion Potential	
Water:	Low
Wind:	High wind erosion potential.

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 (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	6.1	6.0	0	0.05	0.38	1.0	11	110	10.6	0.6	0.33	44	25.2	2.66	2.6	2.09	0.56	0.14	0.29	5.4
											*0.1	-	*8.7	*2.4						
0-10	6.3	6.3	0	0.04	0.33	0.9	10	95	7.9	0.6	-	-	-	-	2.9	2.08	0.48	0.11	0.23	3.8
10-45	6.8	6.6	0	0.02	0.16	0.2	<4	66	4.7	0.4	-	-	-	-	1.6	1.50	0.32	0.12	0.19	7.5
45-80	7.1	6.8	0	0.02	0.16	0.1	<4	74	4.8	0.4	-	-	-	-	1.6	1.09	0.38	0.11	0.18	6.9
80-115	7.3	7.0	0	0.02	0.14	0.1	<4	57	7.0	0.5	-	-	-	-	2.7	1.83	0.60	0.13	0.21	4.8
115-125	8.4	8.2	2.0	0.09	0.40	0.1	<4	71	8.0	0.7	-	-	-	-	5.0	5.07	0.76	0.26	0.31	5.2
125-150	8.6	8.2	42.7	0.14	0.93	0.1	<4	54	11.5	0.6	-	-	-	-	3.0	4.55	0.57	0.23	0.17	7.7

Note: Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.

* DTPA trace element analyses for "paddock" sample.

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.