

SHALLOW GRADATIONAL SANDY LOAM OVER CALCRETE

General Description: *Sandy loam grading to a weakly structured red sandy clay loam, more clayey with depth over calcrete within 50 cm*

Landform: Gently undulating dunefield.

Substrate: Calcreted clay.

Vegetation:



Type Site: Site No.: SE052

1:50,000 sheet:	7024-4 (Keppoch)	Hundred:	Beeamma
Annual rainfall:	550 mm	Sampling date:	01/02/96
Landform:	Swale between sandhills, 2% slope		
Surface:	Firm with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-8	Brown friable sandy loam with weak polyhedral structure and 2-10% carbonate nodules (6-20 mm). Clear to:
8-26	Yellowish red friable massive light sandy clay loam with minor carbonate nodules. Gradual to:
26-32	Yellowish red firm massive sandy clay loam. Abrupt to:
32-34	Very strongly cemented massive calcrete pan. Clear to:
34-83	Firm massive highly calcareous sandy clay loam with 20-50% fine carbonate segregations and 2-10% calcrete nodules (20-60 mm). Diffuse to:
83-102	Yellowish brown firm massive highly calcareous sandy light clay with 20-50% fine carbonate segregations and 2-10% calcrete nodules (20-60 mm).



Classification: Haplic, Petrocalcic, Red Kandosol; thin, slightly gravelly, loamy / clayey, shallow

Summary of Properties

Drainage	Well drained. Soil rarely remains wet for more than a few days.
Fertility	Inherent fertility is moderately low, as indicated by the exchangeable cation data. However, favourable organic carbon levels help provide nutrient retention capacity. Magnesium concentrations are low, in absolute terms and in relation to calcium. Phosphorus concentrations are also low.
pH	Acidic at the surface, alkaline with depth.
Rooting depth	102 cm in pit, but few roots below 32 cm (pan).
Barriers to root growth	
Physical:	The calcrete pan at shallow depth prevents most roots from growing deeper.
Chemical:	There are no chemical barriers, although nutrient availability in the high carbonate layer below the calcrete restricts any roots which penetrate the calcrete.
Water holding capacity	Approximately 50 mm in the root zone (above the calcrete).
Seedling emergence:	Satisfactory.
Workability:	The firm surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Low.

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 (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.8	5.2	0	0.08	0.62	1.9	14	182	9	1.6	0.40	135	8.34	0.62	9.3	7.02	0.77	0.14	0.34	1.5
0-8	6.5	6.1	0	0.10	0.70	2.8	28	200	9	1.7	-	-	-	-	13.0	10.39	1.06	0.18	0.40	1.4
8-26	6.5	6.0	0	0.05	0.43	0.7	5	73	5	1.4	-	-	-	-	8.9	8.08	0.79	0.10	0.18	1.2
26-32	7.5	6.9	0.1	0.05	0.29	0.4	<4	59	3	1.3	-	-	-	-	6.8	6.19	0.59	0.11	0.11	1.6
32-34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34-72	8.7	7.9	54.1	0.10	0.35	0.5	<4	56	6	0.8	-	-	-	-	3.3	4.71	0.50	0.13	0.10	na
72-83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83-102	8.6	7.9	26.9	0.11	0.29	0.3	<4	95	5	1.0	-	-	-	-	10.0	9.85	0.95	0.12	0.17	1.2

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.