

SHALLOW SANDY LOAM OVER CALCRETE

General Description: *Sandy loam to sandy clay loam with variable calcareous rubble, over rubbly calcrete at shallow depth*

Landform: Flat to gently undulating plain.

Substrate: Calcreted lagoonal limestone (Bungunna Limestone equivalent).

Vegetation: *Melaleuca acuminata* and *Eucalyptus foecunda* mallee scrub



Type Site: Site No.: MM070
 1:50,000 sheet: 6827-3 (Moorlands) Hundred: Roby
 Annual rainfall: 375 mm Sampling date: 1992
 Landform: Flat
 Surface: Firm with 10-20% calcrete stone (60-200 mm)

Soil Description:

Depth (cm)	Description
0-8	Reddish brown friable massive sandy loam. Clear to:
8-18	Reddish brown friable massive sandy clay loam. Clear to:
18-48	90% calcrete fragments (60-200 mm) in a yellowish brown very highly calcareous sandy clay loam matrix. Sharp to:
48-85	Calcreted limestone. Clear to:
85-130	Very pale brown very highly calcareous massive sandy clay loam with 20-50% calcrete fragments and 10-20% limestone fragments.



Classification: Haplic, Petrocalcic, Red Kandosol; medium, gravelly, loamy / clay loamy, shallow

Summary of Properties

Drainage	Well drained. Soil never remains saturated for more than a few days.
Fertility	Inherent fertility is moderately low, as indicated by the exchangeable cation data. Regular phosphorus applications are essential (levels are adequate at sampling site), and zinc and copper are occasionally required. Manganese may be needed on cereals. Organic carbon levels are good.
pH	Neutral at the surface, alkaline with depth.
Rooting depth	48 cm in pit, but few roots below 18 cm.
Barriers to root growth	
Physical:	The calcrete prevents significant root development.
Chemical:	No chemical barriers above the calcrete.
Water holding capacity	15 mm in root zone.
Seedling emergence:	Slight limitation due to stoniness.
Workability:	Firm surface is easily worked, but stones interfere with and abrade equipment.
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	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	7.3	7.0	<1	0.13	0.72	1.3	27	340	1.7	-	-	-	-	8.4	6.92	0.81	0.09	0.75	1.1
0-8	6.8	6.4	1	0.08	0.52	1.4	24	380	1.6	-	-	-	-	9.2	9.39	0.96	0.10	0.66	1.1
8-18	7.4	7.0	<1	0.09	0.38	0.58	7.5	270	1.2	-	-	-	-	7.8	6.31	0.67	0.19	0.51	2.4
18-48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48-85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85-130	8.7	8.1	51	0.43	3.57	0.13	<2.0	230	0.7	-	-	-	-	5.7	4.24	1.66	0.59	0.43	10.4

Note: Paddock sample bulked from 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.