

HIGHLY CALCAREOUS SANDY LOAM (Shallow Wookata soil)

General Description: *Very highly calcareous sandy loam over rubbly or laminar semi hard carbonate*

Landform: Gently undulating rises.

Substrate: Calcreted calcarenite
(Bridgewater Formation)

Vegetation: Mallee – tea tree

No landscape image available

Type Site: Site No.: EF016

1:50,000 sheet: 5533-4 (Nunong)

Hundred: Horn

Annual rainfall: 310 mm

Sampling date: 21/01/92

Landform: Upper slope of undulating rise

Surface: Loose with 10-20% calcrete stone (60-200 mm)

Soil Description:

Depth (cm)	Description
25-60	Dark brown soft highly calcareous light sandy loam. Clear to:
25-60	Brown loose highly calcareous light sandy loam. Clear to:
25-60	Hard carbonate lamellae with brown loose very highly calcareous light sandy loam between laminations. Diffuse to:
60-110	Reddish yellow soft very highly calcareous sand with 10-20% carbonate nodules. Diffuse to:
110-180	Laminar calcrete with reddish yellow soft very highly calcareous sand between lamellae.



Classification: Supraescent, Petrocalcic, Lithocalcic Calcarosol; medium, gravelly, loamy / sandy, deep

Summary of Properties

Drainage	Rapidly drained. The soil never remains wet for more than a few hours.
Fertility	Inherent fertility is low as indicated by the exchangeable cation data. Nutrient retention capacity is low due to low clay content and very high carbonate content (ties up some nutrients). Phosphorus applications are needed regularly - levels are marginal at the sampling site. Nitrogen levels depend on cropping history and on medic content of volunteer pastures. Zinc and copper deficiencies are likely from time to time - both are deficient at sampling site.
pH	Alkaline throughout.
Rooting depth	70 cm in pit.
Barriers to root growth	
Physical:	The calcrete lamellae at 110 cm limit further root growth.
Chemical:	High sodicity from 60 cm restricts root growth.
Water holding capacity	Approximately 50 mm in the root zone.
Seedling emergence:	Satisfactory.
Workability:	Loose to soft surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Moderate.

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	
0-10	7.9	7.6	76	1.4	13.3	2.0	21	140	-	2.8	0.12	4.7	5.4	0.17	10.1	11.7	2.1	0.46	0.37	5
10-25	8.5	7.8	78	0.5	3.8	1.7	11	160	-	2.6	0.14	3.4	1.6	0.37	9.1	9.2	2.6	0.70	0.48	8
25-60	8.9	8.0	81	0.5	4.2	0.8	<2	190	-	4.3	0.07	1.4	0.78	0.13	5.3	4.2	3.1	1.23	0.52	23
60-110	9.2	8.4	87	0.2	1.5	-	-	-	-	4.2	0.06	0.28	0.13	0.13	2.6	1.8	2.0	1.04	0.47	na
110-180	9.5	8.2	95	0.2	2.3	-	-	-	-	3.4	0.07	0.36	0.13	0.16	1.3	0.9	1.3	1.20	0.31	na

Note: 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