

CALCAREOUS LOAMY SAND (Shallow Moornaba soil)

General Description: *Calcareous loamy sand grading to a very highly calcareous sandy loam with variable rubble, continuing below 120 cm*

Landform: Gently undulating low hills.

Substrate: Very highly calcareous light sandy clay loam (Woorinen Formation).

Vegetation: Mallee / tea tree



Type Site: Site No.: EF013

1:50,000 sheet:	5534-2 (Koonibba)	Hundred:	Catt
Annual rainfall:	320 mm	Sampling date:	17/01/92
Landform:	Upper slope of low hill, 3% slope		
Surface:	Loose with no stones		

Soil Description:

Depth (cm)	Description
0-12	Dark brown loose slightly calcareous sand. Clear to:
12-40	Orange friable moderately calcareous loamy sand. Gradual to:
40-60	Brown friable highly calcareous sandy loam with weak blocky structure. Clear to:
60-100	Light brown soft very highly calcareous light sandy loam with 20-50% carbonate nodules. Gradual to:
100-150	Brownish yellow soft very highly calcareous sandy loam. Gradual to:
150-200	Yellow friable very highly calcareous light sandy clay loam with moderate blocky structure.



Classification: Endohypersodic, Regolithic, Supracalcic Calcarosol; very thick, non-gravelly, sandy / loamy, deep

Summary of Properties

Drainage	Rapidly drained. Soil is never wet for more than a few hours.
Fertility	Inherent fertility is low as indicated by the exchangeable cation data. Low clay and organic matter levels provide little nutrient retention capacity. Regular phosphorus applications are essential - levels are low at sampling site. Nitrogen levels depend on cropping history and medic content of volunteer pastures. Copper and zinc deficiencies may occur - levels are marginal at sampling site.
pH	Alkaline throughout.
Rooting depth	150 cm in pit.
Barriers to root growth	
Physical:	There are no physical barriers.
Chemical:	High pH in deep subsoil limits root growth, but 150 cm is as deep as cereal roots can be expected to reach in this environment.
Water holding capacity	Approximately 120 mm in root zone.
Seedling emergence:	Satisfactory, although water repellence may be a problem in some seasons.
Workability:	Loose 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	
0-12	8.2	7.9	0.5	0.12	1.2	0.3	17	211	-	0.6	0.1	3	2.6	0.3	3.6	4.2	0.5	0.23	0.60	6
12-40	8.6	8.2	3.8	0.10	0.5	0.3	5	97	-	0.5	0.1	3	0.7	0.2	3.6	4.8	0.8	0.28	0.27	8
40-60	8.7	8.2	14.4	0.10	0.4	0.3	<4	57	-	0.9	0.2	1	0.6	0.2	3.9	5.0	1.5	0.29	0.22	7
60-100	9.0	8.4	26.1	0.16	1.1	0.1	<4	180	-	1.6	0.3	1	0.4	0.1	3.1	3.2	2.0	0.55	0.61	18
100-150	9.7	8.5	29.4	0.55	5.7	0.3	<4	346	-	6.3	0.3	2	0.2	0.1	3.7	1.5	2.0	2.17	1.10	59
150-200	9.8	8.5	31.2	0.92	10.5	0.2	<4	418	-	12.4	0.3	1	0.2	0.2	3.2	1.3	1.6	2.54	1.30	79

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