

CALCAREOUS SANDY LOAM (Bookabie soil)

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

Landform: Gently undulating low hills.

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

Vegetation: Mallee.



Type Site: Site No.: EF011

1:50,000 sheet:	5534-2 (Koonibba)	Hundred:	Catt
Annual rainfall:	310 mm	Sampling date:	17/01/92
Landform:	Upper slope of rise, 2% slope		
Surface:	Soft with no stones		

Soil Description:

Depth (cm)	Description
0-8	Dark brown soft moderately calcareous sandy loam with weak granular structure. Clear to:
8-20	Reddish brown firm highly calcareous weakly platy light sandy clay loam. Clear to:
20-50	Yellowish red friable very highly calcareous light sandy clay loam with weak subangular blocky structure and 10-20% carbonate nodules. Clear to:
50-80	Yellowish red friable very highly calcareous light sandy clay loam with weak subangular blocky structure and 10-20% carbonate nodules. Gradual to:
80-130	Yellowish red friable very highly calcareous light sandy clay loam with weak subangular blocky structure. Diffuse to:
130-180	Yellowish red friable very highly calcareous sandy clay loam with weak subangular blocky structure.



Classification: Endohypersodic, Regolithic, Hypercalcic Calcarosol; medium, non-gravelly, loamy/loamy, deep

Summary of Properties

Drainage	Rapidly drained. Soil never remains wet for more than a few hours.
Fertility	Inherent fertility is moderately low as indicated by the exchangeable cation data. Clay and organic carbon contents are low, limiting nutrient retention capacity. Regular phosphorus applications are essential, and levels are high 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 marginal at sampling site.
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	60 cm in pit.
Barriers to root growth	
Physical:	There are no physical barriers.
Chemical:	High pH, sodicity and boron concentrations restrict root growth.
Water holding capacity	Approximately 80 mm in the root zone.
Seedling emergence:	Satisfactory.
Workability:	Soft surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Moderately 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	
0-8	7.7	7.7	4	0.1	0.7	0.8	44	590	-	2.8	0.28	1.9	8.4	0.25	8.1	7.6	1.2	0.17	1.67	2
8-20	8.4	7.9	8	0.1	0.6	0.7	5	520	-	2.6	0.40	2.0	2.5	0.14	10.1	9.5	1.9	0.18	1.73	2
20-50	8.6	8.0	18	0.2	1.3	0.3	2	360	-	4.6	0.48	1.5	1.6	0.08	8.8	6.6	4.1	0.68	1.31	8
50-80	9.6	8.6	30	0.9	7.1	-	-	-	-	40.6	0.26	1.3	0.34	0.04	7.9	2.0	4.4	4.54	1.45	57
80-130	9.6	8.5	22	1.0	9.4	-	-	-	-	40.6	0.22	1.4	0.45	0.06	8.8	2.4	3.8	5.00	1.39	57
130-180	8.9	8.3	20	1.5	13.4	-	-	-	-	26.5	0.24	0.86	0.40	0.08	7.7	3.6	3.6	4.10	1.14	53

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