CALCAREOUS SANDY LOAM

(Sandy Bookabie / Wiabuna soil)

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

Landform: Very gently undulating rises.

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

Vegetation: Mallee / tea tree

Type Site:

Site No.:	EF014	1:50,000 mapsheet:	5534-2 (Koonibba)
Hundred:	Catt	Easting:	339300
Section:	12	Northing:	6470300
Sampling date:	17/1/1992	Annual rainfall:	310 mm average

Upper slope of 1%. Soft surface with no stones.

Soil Description:

Depth (cm)	*Description*
0-10	Dark brown soft weakly blocky moderately calcareous light sandy loam. Clear to:
10-25	Dark brown firm highly calcareous sandy loam with moderate blocky structure. Clear to:
25-45	Orange friable very highly calcareous sandy loam with weak subangular blocky structure. Clear to:
45-60	Orange friable very highly calcareous sandy loam with weak subangular blocky structure and 20-50% carbonate nodules. Gradual to:
60-100	Orange firm very highly calcareous light sandy clay loam with weak subangular blocky structure. Diffuse to:
100-150	Reddish yellow friable very highly calcareous light sandy clay loam with weak subangular blocky structure. Diffuse to:
150-200	As above.

Classification: Epihypersodic, Regolithic, Supracalcic Calcarosol; medium, non-gravelly, loamy/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 marginal 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 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 from 45 cm limit root depth.

Waterholding capacity: Approximately 70 mm in rootzone.

Seedling emergence: Satisfactory.

Workability: Soft surface is easily worked

Erosion Potential:

Water: Low.

Wind: Moderate.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4 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	8.1	7.8	3	0.1	1.1	0.9	20	390	-	2.7	0.16	2.5	4.3	0.15	6.3	6.9	1.0	0.25	0.97	4
10-25	8.2	7.8	7	0.1	0.5	0.7	4	320	-	2.2	0.15	1.6	1.9	0.07	8.8	9.5	1.6	0.28	1.07	3
25-45	9.0	8.2	19	0.2	1.0	0.3	<2	300	-	6.8	0.20	1.2	0.85	0.04	6.0	4.7	2.9	1.22	0.92	20
45-60	9.8	8.4	32	0.5	2.8	-	-	-	-	20.2	0.18	1.2	0.45	0.04	6.2	2.3	2.8	3.88	1.35	63
60-100	9.8	8.7	31	0.8	5.7	-	-	-	-	35.3	0.19	1.5	0.22	0.04	7.2	1.4	3.9	5.35	1.79	74
100-150	9.7	8.5	29	1.0	9.0	-	-	-	-	27.9	0.17	1.4	0.34	0.04	6.7	1.6	2.7	4.84	1.85	72
150-200	9.5	8.4	25	1.2	11.9	-	-	-	-	24.9	0.16	1.9	0.53	0.04	6.7	1.8	2.3	4.48	1.72	67

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

Further information: DEWNR Soil and Land Program