

DEEP CALCAREOUS SANDY LOAM (Bookabie / Wiabuna soil)

General Description: *Calcareous sandy loam becoming more clayey and calcareous with depth*

Landform: Gently undulating plain with moderate sandhills.

Substrate: Very highly calcareous medium to fine grained windblown Woorinen Formation sediments.

Vegetation: Mallee.



Type Site: Site No.: EC080

1:50,000 sheet: 5932-2 (Yaninee)

Hundred: Minnipa

Annual rainfall: 300 mm

Sampling date: 30/03/93

Landform: Rise on gently undulating plain, 2% slope

Surface: Soft with no stones

Soil Description:

Depth (cm)	Description
0-10	Dark brown soft moderately calcareous sandy loam. Clear to:
10-30	Reddish brown firm massive very highly calcareous sandy clay loam. Clear to:
30-70	Reddish brown friable massive very highly calcareous sandy clay loam. Gradual to:
70-90	Reddish brown friable massive very highly calcareous sandy clay loam. Gradual to:
90-140	Yellowish red friable very highly calcareous light clay with moderate fine subangular blocky structure and 2-10% carbonate concretions.



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

Summary of Properties

Drainage	Well drained. The soil never remains wet for more than a day or so.
Fertility	Inherent fertility is moderately low. Regular phosphorus applications are necessary, as the calcareous surface soil tends to tie up phosphate. Nitrogen levels depend on legume content of pastures and cropping history. Deficiencies of copper and zinc may occur from time to time, but levels at sampling site are satisfactory. Phosphorus levels are high, and organic carbon concentrations are marginal.
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	90 cm in pit, but few roots below 70 cm.
Barriers to root growth	
Physical:	There are no physical barriers.
Chemical:	High pH and sodicity from 70 cm limit deeper root growth.
Water holding capacity	Approximately 110 mm in 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	
0-10	8.5	8.0	4	0.12	0.59	0.9	47	430	-	2.0	0.26	3.0	3.90	1.10	11.0	8.51	1.45	0.08	1.08	0.7
10-30	8.9	8.3	3	0.14	0.47	0.3	3	230	-	3.8	0.36	6.1	1.30	0.30	14.7	9.95	3.35	0.63	0.60	4.3
30-70	9.2	8.3	11	0.46	3.19	-	2	110	-	3.7	0.50	3.6	0.87	0.24	14.4	7.93	4.65	1.88	0.30	13.1
70-90	9.5	8.5	20	1.12	8.06	-	<2	190	-	11.0	0.67	3.1	0.78	0.19	13.4	4.17	4.76	4.73	0.50	35.3
90-140	9.8	8.6	28	1.18	7.41	-	<2	240	-	23	0.62	3.7	0.52	0.23	13.0	2.74	5.10	6.04	0.62	46.5

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.