CALCAREOUS SANDY LOAM
(Bookabie / Wiabuna soil)

General Description: *Calcareous sandy loam grading to a rubbly very highly calcareous sandy clay loam over light clay from about 100 cm*

Landform: Gently undulating rises.

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

Vegetation: Mallee.

Type Site:

Site No.:	EW072		
1:50,000 sheet:	5634-3 (Kalanbi)	Hundred:	Goode
Annual rainfall:	315 mm	Sampling date:	29/3/93
Landform:	Midslope of a gently undulating rise, 4% slope		
Surface:	Soft with no stones		

Soil Description:

Depth (cm)	*Description*
0-10	Reddish brown soft moderately calcareous sandy loam with weak fine subangular blocky structure. Clear to:
10-50	Reddish brown friable very highly calcareous sandy loam with weak subangular blocky structure and 2-10% carbonate nodules. Diffuse to:
50-70	Yellowish red friable very highly calcareous light sandy loam with weak subangular blocky structure and 2-10% carbonate nodules. Abrupt to:
70-90	Light brown firm massive very highly calcareous light sandy loam with 20-50% carbonate nodules (Class III B carbonate). Abrupt to:
90-120	Light brown friable very highly calcareous sandy clay loam with moderate subangular blocky structure. Clear to:
120-170	Light brown friable very highly calcareous light clay with weak subangular blocky structure and 10-20% carbonate nodules. Clear to:
170-	Brown friable very highly calcareous light clay with weak subangular blocky structure and minor carbonate nodules.

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

Summary of Properties

Drainage Rapidly drained. The soil rarely remains wet for more than a few hours at a time.

Fertility Inherent fertility is moderately low as indicated by the exchangeable cation data. Calcareous soils reduce availability of phosphorus (low levels at sampling site), zinc and copper (levels satisfactory at sampling site). Organic carbon concentrations are marginally low for this environment.

pH Alkaline at the surface, strongly alkaline with depth.

Rooting depth 120 cm in pit, but few roots below 50 cm.

Barriers to root growth

Physical: There are no physical barriers to root growth.

Chemical: High pH and sodicity, high boron concentrations and moderately high salinity from 50 cm severely limit deeper root growth.

Water holding capacity: Approximately 75 mm in the root zone (65 mm in upper 50 cm and 10 mm in deeper hostile layers).

Seedling emergence: Satisfactory.

Workability: The soft surface is easily worked.

Erosion Potential

Water: Low.

Wind: Moderately low to moderate.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	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	8.4	7.9	4	0.13	0.54	0.8	12	200	-	1.6	0.46	2.60	6.10	0.51	10.4	8.17	1.07	0.04	1.45	0.4
10-50	8.8	8.2	10	0.13	0.47	0.5	5	500	-	3.3	0.90	2.30	2.80	0.30	10.9	7.53	2.47	0.20	1.43	1.8
50-70	9.8	8.8	19	0.75	6.28	-	<2	500	-	30	0.57	2.00	1.50	0.25	8.8	1.96	3.41	3.15	1.49	35.8
70-90	9.7	8.8	52	1.60	13.76	-	<2	440	-	39	0.36	2.00	0.73	0.11	8.6	1.53	3.60	3.74	1.17	43.5
90-120	9.6	8.8	44	1.84	15.20	-	<2	470	-	33	0.42	1.70	0.65	0.20	10.5	2.02	3.96	4.36	1.33	41.5
120-170	9.5	8.7	41	1.61	10.20	-	<2	470	-	30	0.47	2.40	1.20	0.14	9.7	2.00	3.10	3.86	1.23	39.8
170-	9.4	8.6	38	1.84	11.02	-	9	470	-	30	0.56	3.10	1.20	0.19	9.4	2.36	3.35	3.93	1.28	41.8

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