SHALLOW CALCAREOUS LOAM OVER CALCRETE

(Shallow Wiabuna soil)

General Description: *Calcareous sandy loam with variable rubble over calcrete within 50 cm*

Landform: Very gently undulating plain with low sandhills.

Substrate: Calcrete capping Hindmarsh Clay.

Vegetation: Mallee.

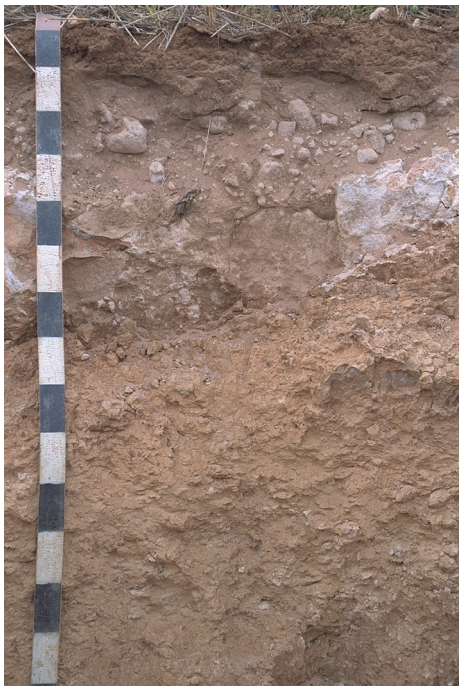
Type Site:

Site No.:	EC082	1:50,000 mapsheet:	6031-3 (Kopi)
Hundred:	Warramboo	Easting:	567920
Section:	35	Northing:	6319370
Sampling date:	31/03/1993	Annual rainfall:	335 mm average

Stony flat between sandhills, 1-2% slope. Soft surface with 2-10% calcrete stones

Soil Description:

Depth (cm)	*Description*
0-10	Dark brown soft slightly calcareous sandy loam with weak fine subangular blocky structure. Abrupt to:
10-20	Brown friable massive very highly calcareous sandy loam with 2-10% carbonate concretions. Abrupt to:
20-30	Concretionary calcrete. Abrupt to:
30-70	Pink soft massive very highly calcareous light coarse sandy loam with 20-50% carbonate concretions. Clear to:
70-150	No record.
150-	Hindmarsh Clay.



Classification: Epihypersodic, Petrocalcic, Calcic Calcarosol; medium, slightly gravelly, loamy / loamy, very shallow

Summary of Properties

Drainage: Rapidly drained. The soil never remains wet for more than a few hours.

Fertility: Inherent fertility is moderately low. The sandy loam surface provides reasonable nutrient retention capacity, but there is some reduction in phosphate and trace element availability due to the carbonate content. Regular phosphorus applications are needed - levels are adequate at the sampling site. Copper, zinc and possibly manganese deficiencies will occur from time to time, but concentrations appear satisfactory at the site. Organic carbon levels are good.

pH: Alkaline at the surface, strongly alkaline with depth.

Rooting depth: 30 cm in pit.

Barriers to root growth:

Physical: The calcrete imposes a major barrier to root growth, and unless there are continuous fractures, no roots will penetrate.

Chemical: Very high pH below the calcrete restricts the growth of any roots which do penetrate the calcrete.

Waterholding capacity: Approximately 35 mm in the rootzone.

Seedling emergence: Satisfactory.

Workability: Soft surface is easily worked.

Erosion Potential:

Water: Low.

Wind: Moderately low.

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-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	8.1	3	0.13	0.50	1.3	28	600	-	2.2	0.38	4.3	7.00	0.52	14.5	11.66	1.80	0.05	1.52	0.3
10-20	8.8	8.2	16	0.12	0.40	0.8	6	240	-	3.8	1.10	2.6	3.30	0.40	14.6	10.35	4.07	0.15	0.67	1.0
30-70	10.0	8.5	60	0.64	5.29	-	<2	390	-	15	0.49	1.3	0.89	0.88	5.9	1.05	1.78	2.40	0.87	40.7

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