

CALCAREOUS CLAY LOAM ON CLAY (Wiabuna soil)

General Description: *Calcareous clay loam becoming very highly calcareous with depth overlying clayey substrate within 120 cm*

Landform: Gently undulating rises.

Substrate: Red heavy clay (Hindmarsh Clay equivalent).

Vegetation: Mallee

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Type Site: Site No.: EL010

1:50,000 sheet: 6029-2 (Koppio)

Hundred: Hutchison

Annual rainfall: 385 mm

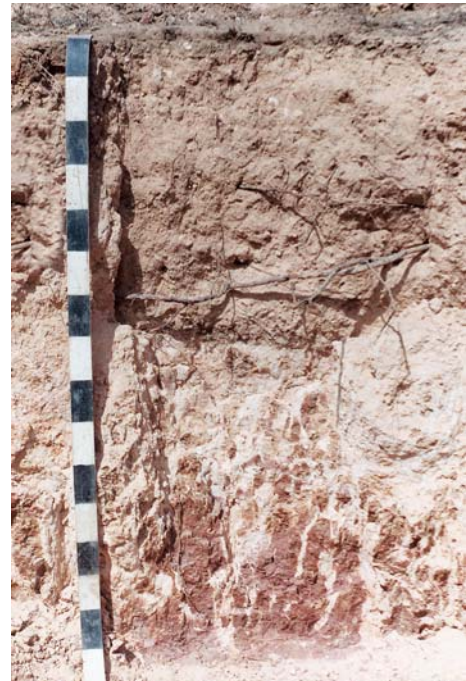
Sampling date: 27/03/92

Landform: Flat between gently undulating rises, 1-2% slope

Surface: Soft with 10-20% calcrete stones (20-60 mm)

Soil Description:

Depth (cm)	Description
0-5	Brown friable moderately calcareous clay loam with weak subangular blocky structure and 2-10% ironstone gravel. Sharp to:
5-80	Reddish yellow soft massive highly calcareous clay loam. Clear to:
80-155	Red and grey mottled very hard medium heavy clay with strong coarse prismatic breaking to fine angular blocky structure and 10-20% fine carbonate segregations.



Classification: Epihypersodic, Regolith, Hypercalcic Calcarosol; thin, gravelly, clay loamy / clay loamy, moderate

Summary of Properties

Drainage	Well drained. Soil rarely remains wet for more than a few days following heavy or prolonged rainfall.
Fertility	Inherent fertility is moderate, as indicated by the exchangeable cation data. Moderately high clay content and high organic matter levels in the surface soil provide favourable nutrient retention capacity. Concentrations of measured nutrient elements are high at sampling site, despite the high carbonate content throughout (tends to reduce availability of some elements).
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	80 cm in pit.
Barriers to root growth	
Physical:	No physical barriers above the substrate clay at 80 cm. Root growth into the clay is poor due to its high strength and adverse chemistry (see below).
Chemical:	High pH and sodicity from shallow depth restrict root growth. High boron and (predicted) high pH and sodicity of substrate clay from 80 cm prevent deeper root growth.
Water holding capacity	Approximately 100 mm in the root zone.
Seedling emergence:	Satisfactory.
Workability:	Soft to firm surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	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	
0-5	7.8	7.4	8	0.2	1.1	2.98	84	-	6.7	3.0	1.59	9	7.26	0.84	26.1	18.6	5.3	0.49	2.81	1.9
5-80	9.7	8.3	66	0.5	5.1	0.67	8	-	88	4.8	1.42	12	0.69	0.46	18.9	7.8	7.0	4.85	1.07	25.7
80-155	9.5	8.8	16	1.2	7.6	-	-	-	156	19.5	0.77	4	0.30	0.38	-	-	-	-	-	-

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