

HIGHLY CALCAREOUS SANDY LOAM (Wookata soil)

General Description: *Very highly calcareous sandy loam over rubbly carbonate, becoming less rubbly and slightly more clayey with depth*

Landform: Gently undulating plains and low rises.

Substrate: Very highly calcareous medium to coarse textured windblown deposits (Woorinen Formation).

Vegetation: Mallee



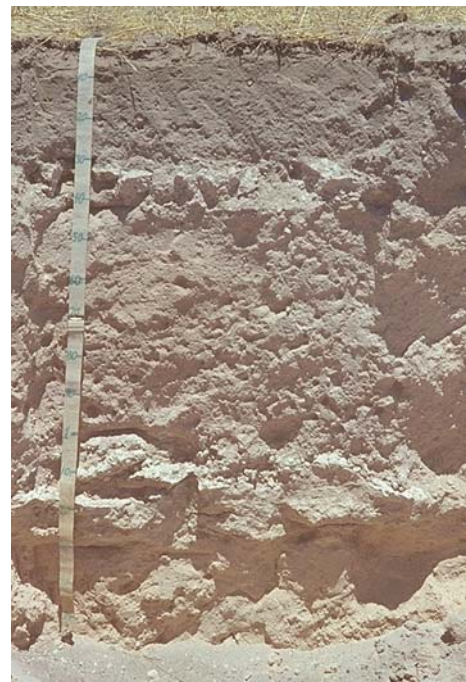
Type Site: Site No.: EW060

1:50,000 sheet: 5732-1 (Courela)
Annual rainfall: 350 mm
Landform: Crest of gentle rise
Surface: Firm with no stones

Hundred: Scott
Sampling date: 17/01/86

Soil Description:

Depth (cm)	Description
0-7	Brown massive highly calcareous sandy loam. Clear to:
7-30	Brown massive highly calcareous heavy sandy loam. Abrupt to:
30-43	Rubbly Class III C carbonate. Abrupt to:
43-100	Light yellowish brown massive very highly calcareous heavy sandy loam. Abrupt to:
100-132	Massive Class II calcrete. Abrupt to:
132-170	Yellow massive very highly calcareous light sandy clay loam.



Classification: Suprarescent, Regolithic, Lithocalcic Calcarosol; thick, non-gravelly, loamy / loamy, deep

Summary of Properties

Drainage: Rapidly drained. The soil rarely remains saturated for more than a few hours.

Fertility: Inherent fertility is low due to the low clay content and very high carbonate concentration to the surface. Nutrient retention capacity is low and fixation of phosphorus, zinc, manganese, copper and iron is high.

pH: Alkaline throughout.

Rooting depth: Not recorded. Estimate 100 cm in pit, but with low density below 43 cm.

Barriers to root growth:

Physical: There are no physical barriers above the calcrete at 100 cm.

Chemical: Very high carbonate concentration affecting nutrient availability is the main chemical limitation.

Water holding capacity: Approximately 80 mm in the potential root zone.

Seedling emergence: Satisfactory.

Workability: The soft calcareous sandy loam surface is easily worked.

Erosion Potential

Water: Low.

Wind: Moderate.

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	
0-7	8.3	7.8	70	0.19	1.2	-	-	-	22	4.8	-	-	-	-	11.8	-	2.0	0.18	1.30	1.5
7-30	8.5	7.9	71	0.15	1.0	-	-	-	18	2.8	-	-	-	-	13.2	-	2.2	0.19	0.84	1.4
30-43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43-100	9.0	8.1	78	0.14	0.9	-	-	-	-	2.3	-	-	-	-	7.9	-	6.0	0.50	1.20	6.3
100-132	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
132-170	9.2	8.2	85	0.20	1.3	-	-	-	-	3.9	-	-	-	-	4.8	-	6.5	0.59	0.37	12.3

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.

* Exchangeable calcium (Ca) values not presented because the laboratory procedure used was inappropriate for very highly calcareous samples.