

DEEP CALCAREOUS SANDY LOAM

General Description: *Calcareous loamy sand to sandy loam grading to a very highly calcareous sandy clay loam with variable rubble, continuing below 100 cm*

Landform: Gently undulating plain.

Substrate: Very highly calcareous medium grained Woorinen Formation deposits.

Vegetation:



Type Site: Site No.: CY026

1:50,000 sheet: 6430-1 (Broughton)
 Annual rainfall: 340 mm
 Landform: Upper slope of 1%
 Surface: Loose with no stones

Hundred: Tickera
 Sampling date: 20/07/94

Soil Description:

Depth (cm)	Description
0-10	Dark brown loose highly calcareous loamy sand. Clear to:
10-22	Dark brown soft massive highly calcareous sandy loam. Diffuse to:
22-75	Strong brown and dark brown soft massive very highly calcareous light sandy clay loam. Gradual to:
75-115	Reddish yellow firm massive very highly calcareous light clay with minor calcrete fragments. Diffuse to:
115-170	Reddish yellow firm massive sandy clay loam with minor calcrete fragments.



Classification: Endohypersodic, Regolithic, Hypercalcic Calcarosol; medium, non-gravelly, sandy / clayey, deep

Summary of Properties

Drainage	Well drained.
Fertility	Surface fertility relies on organic matter levels which are adequate, and on phosphorus levels which are good at this site. Nutrient availability problems due to high carbonate content and high pH are inherent to this soil. The soil's capacity to retain nutrients is likely to be moderate, based on the clay content and CEC of the subsoil.
pH	Alkaline at the surface, highly alkaline at depth.
Rooting depth	Roots to 75cm in pit, but few below 22 cm.
Barriers to root growth	
Physical	There are no physical barriers.
Chemical	High pH and boron concentrations from 75 cm and high sodicity in deeper subsoil prevent further root growth. Trace element deficiencies are likely in the subsoil.
Water holding capacity	Approximately 80mm in rootzone, but about half of this is effectively unavailable due to low root density in the subsoil.
Seedling emergence	Good. Organic matter levels need to be maintained to preserve surface structure.
Workability	Good.
Erosion Potential	
Water	Low.
Wind	Moderately low. High organic matter levels provide greater soil stability.

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	
Paddock	8.5	7.8	3.5	0.2	0.6	1.1	41	492	5.1	1.9	-	-	-	-	6.8	6.38	1.28	0.05	0.94	0.8
0-10	8.5	7.8	5.0	0.1	0.7	1.4	46	330	5.3	2.8	-	-	-	-	8.2	7.88	1.49	0.05	1.09	0.6
10-22	8.6	7.9	8.7	0.1	0.7	1.6	5	190	6.1	3.6	-	-	-	-	13.5	11.82	3.21	0.11	0.64	0.8
22-75	9.3	8.3	13.7	0.2	0.7	0.4	3	97	6.3	4.4	-	-	-	-	8.6	3.75	6.72	0.48	0.29	5.6
75-115	9.8	8.4	23.5	0.5	1.7	0.4	3	207	29.4	16.2	-	-	-	-	7.1	1.35	4.19	1.00	0.75	14.1
115-170	9.8	8.4	18.0	0.5	1.9	0.1	4	177	42.6	17.9	-	-	-	-	7.0	1.44	2.65	1.94	0.56	27.8

Note: Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.

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