

DEEP RUBBLY CALCAREOUS CLAY LOAM

General Description: *Calcareous sandy loam to clay loam with rubbly carbonate at shallow depth, grading to a very highly calcareous clay loam to light clay*

Landform: Gently undulating plain.

Substrate: Very highly calcareous medium to fine grained Woorinen Formation deposits.

Vegetation:



Type Site:	Site No.:	CY025	1:50,000 mapsheet:	6430-3 (Wallaroo)
	Hundred:	Tickera	Easting:	750650
	Section:	29	Northing:	6255500
	Sampling date:	20/7/94	Annual rainfall:	360 mm average

Very gentle slope of 1%. Hard surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-25	Dark brown friable massive highly calcareous fine sandy clay loam. Clear to:
25-43	Dark brown friable massive very highly calcareous fine sandy clay loam with 20-50% calcrete fragments (20-60 mm). Clear to:
43-80	Strong brown friable massive very highly calcareous light medium clay. Diffuse to:
80-135	Strong brown friable massive very highly calcareous light medium clay. Diffuse to:
135-180	Strong brown hard massive very highly calcareous light medium clay with 2-10% carbonate nodules (6-20 mm).



Classification: Hypervescent, Regolithic, Supracalcic Calcarosol; medium, non-gravelly, clay loamy / clayey, deep



Summary of Properties

Drainage: Moderately well drained. The soil rarely remains wet for more than a week following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. Surface fertility relies on organic matter levels which are adequate, and on phosphorus levels which are adequate in the paddock sample at this site. Nutrient availability problems due to high carbonate content and high pH are characteristic of this soil. In particular, trace element deficiencies can be expected.

pH: Alkaline to strongly alkaline throughout.

Rooting depth: Roots to 80 cm in pit, but few below 43 cm.

Barriers to root growth:

Physical: There are no physical barriers.

Chemical: High salinity, boron concentration, sodicity and pH from 43 cm restrict deeper root growth. Trace element deficiencies are likely in the subsoil.

Waterholding capacity: Approximately 100 mm in rootzone, but only about 60 mm are effectively available 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: 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 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	8.3	7.5	8.2	0.19	0.9	1.9	33	677	8.5	2.9	-	-	-	-	16.1	13.68	2.13	0.13	2.39	0.8
0-25	8.5	7.7	9.4	0.26	1.3	1.5	8	461	11.9	3.2	-	-	-	-	19.1	15.79	3.38	0.47	1.61	2.5
25-43	8.5	7.8	24.5	0.89	8.8	0.8	8	140	41.2	7.1	-	-	-	-	17.7	9.77	6.07	3.88	0.53	22.0
43-80	9.4	8.3	35.7	1.27	12.9	0.4	4	197	136	20.9	-	-	-	-	14.1	3.50	5.87	6.59	0.74	46.7
80-135	9.3	8.4	31.1	1.91	16.8	0.3	4	269	277	19.7	-	-	-	-	15.3	3.36	6.50	7.45	1.06	48.7
135-180	9.1	8.2	32.7	1.93	15.5	0.2	11	294	220	16.0	-	-	-	-	13.4	3.21	5.42	6.47	0.91	48.2

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

Further information: [DEWNR Soil and Land Program](#)

