

## RUBBLY CALCAREOUS CLAY LOAM ON ROCK

**General Description:** *Calcareous clay loam grading to a very highly calcareous light clay with abundant rubble, over weathering basement rock within 100 cm*

**Landform:** Gently undulating plain.

**Substrate:** Weathering gneiss, capped by windblown carbonates.

**Vegetation:**



**Type Site:** Site No.: CY028

1:50,000 sheet: 6430-2 (Alford)

Hundred: Tickera

Annual rainfall: 360 mm

Sampling date: 20/07/94

Landform: Very gentle slope of 0.5%

Surface: Hard setting with 2-10% calcrete stone (20-60 mm)

### Soil Description:

Depth (cm)	Description
0-8	Dark brown friable clay loam with weak subangular blocky structure. Clear to:
8-18	Yellowish red friable moderately calcareous clay loam with weak subangular blocky structure. Sharp to:
18-40	Brown very highly calcareous massive light clay with more than 50% calcrete fragments (20-60 mm). Clear to:
40-95	Reddish yellow soft massive clay loam with 2-10% gneiss fragments (20-60 mm). Clear to:
95-110	Weathering gneiss with diffuse soft carbonate.



**Classification:** Epibasic, Paralithic, Lithocalcic Calcarosol; medium, slightly gravelly, clay loamy / clayey, moderate

### Summary of Properties

<b>Drainage</b>	Moderately well drained. The soil may remain wet for up to a week following heavy or prolonged rainfall.
<b>Fertility</b>	Surface fertility relies on organic matter levels which are high, and on phosphorus levels which are adequate to low at this site. The soil's capacity to retain nutrients is moderate to high based on the exchangeable cation data. Only nitrogen and phosphorus deficiencies would be expected on a regular basis.
<b>pH</b>	Alkaline throughout.
<b>Rooting depth</b>	Roots to 95 cm in pit, but few below 40 cm.
<b>Barriers to root growth</b>	
<b>Physical</b>	Calcrete fragments and weathered rock impede root growth.
<b>Chemical</b>	There are no chemical barriers to root growth, other than high carbonate content. Low subsoil availability of trace elements could be a contributing factor to poor root growth.
<b>Water holding capacity</b>	Approximately 95 mm in the rootzone, but about half of this is effectively unavailable due to low root density in the subsoil.
<b>Seedling emergence</b>	Fair. Organic matter levels need to be maintained to preserve surface structure.
<b>Workability</b>	Fair.
<b>Erosion Potential</b>	
<b>Water</b>	Low.
<b>Wind</b>	Low.

### Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -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	8.2	7.6	1.4	0.2	0.8	2.5	20	667	7.5	1.2	-	-	-	-	27.9	24.63	2.45	0.19	2.67	0.7	
0-8	8.2	7.6	1.2	0.2	0.7	2.8	24	640	6.4	1.3	-	-	-	-	29.0	27.63	2.67	0.24	3.02	0.8	
8-18	8.4	7.7	2.3	0.1	0.5	1.3	4	587	3.3	0.7	-	-	-	-	27.3	26.99	2.87	0.22	1.79	0.8	
18-40	8.5	7.7	29.0	0.2	0.8	1.2	3	162	5.4	0.7	-	-	-	-	20.4	18.60	3.13	0.35	0.61	1.7	
40-95	9.2	8.1	46.2	0.3	1.2	0.5	2	139	19	2.7	-	-	-	-	11.7	6.20	5.67	2.56	0.26	21.9	
95-110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**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