

## DEEP GRADATIONAL RED CLAY LOAM

**General Description:** *Well structured red brown loam to clay loam overlying a deep, well structured red brown clay, weakly calcareous with depth.*

**Landform:** Mid to lower slopes of gently undulating to undulating rises and low hills

**Substrate:** Clay derived from fine grained basement rock

**Vegetation:** Blue gum woodland



**Type Site:** Site No.: CM042

1:50,000 sheet: 6630-3 (Clare)

Hundred:

Upper Wakefield

Annual rainfall: 575 mm

Sampling date:

11/08/93

Landform: Lower slope of an undulating rise, 5% slope

Surface: Firm with no stones

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-11	Dark reddish brown clay loam with strong granular structure. Abrupt to:
11-25	Dark reddish brown light clay with strong subangular blocky structure. Clear to:
25-40	Dark reddish brown medium clay with strong polyhedral structure. Gradual to:
40-65	Dark reddish brown heavy clay with strong polyhedral structure. Gradual to:
65-95	Dark reddish brown heavy clay with strong coarse prismatic structure. Clear to:
95-150	Dark red moderately calcareous heavy clay with strong coarse prismatic structure and 10-20% soft carbonate segregations.



**Classification:** Haplic, Calcic, Red Dermosol; medium, non-gravelly, clay loamy / clayey, deep

## Summary of Properties

<b>Drainage</b>	The soil is moderately well drained and is unlikely to remain wet for more than a week.
<b>Fertility</b>	The nutrient retention capacity of the soil is very high, as indicated by the exchangeable cation data. The fertility of the surface is less than optimal due to marginal organic matter levels (1.6% organic carbon is achievable in this soil). Phosphorus content is adequate at the sampling site.
<b>pH</b>	Neutral at the surface, alkaline with depth (high surface pH in the sampling pit is due to lime dust from the nearby road).
<b>Rooting depth</b>	There are roots to 150 cm in the sampling pit, but densities are low below 100 cm.
<b>Barriers to root growth</b>	
<b>Physical:</b>	There are no apparent physical barriers to root growth.
<b>Chemical:</b>	There are no apparent chemical barriers to root growth.
<b>Water holding capacity</b>	Approximately 180 mm in the root zone.
<b>Seedling emergence</b>	Good, provided that organic matter levels are maintained or increased. There is evidence of compaction in the wheel tracks.
<b>Workability</b>	Good.
<b>Erosion Potential</b>	
<b>Water:</b>	Moderate, due to the 5% slope. This soil has a relatively high resistance to erosion, due to its high clay content and strong structure.
<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	
Row	6.9	6.8	0	0.11	0.51	1.3	39	803	-	1.5	4.7	16	29.1	2.2	13.5	8.21	1.68	0.08	1.26	0.6
0-11	8.0	7.7	0.7	0.11	0.33	1.3	26	752	5.4	1.8	5.6	6	13.8	0.8	17.0	13.17	2.23	0.08	1.30	0.5
11-25	7.6	7.3	0	0.07	0.22	0.8	6	664	5.5	1.3	1.7	6	16.3	0.1	15.1	10.48	1.53	0.07	1.04	0.5
25-40	7.1	6.7	0	0.08	0.25	0.8	<4	545	13	2.0	2.0	12	7.4	0.1	30.2	18.17	9.01	0.29	1.50	1.0
40-65	6.6	6.2	0	0.09	0.27	0.7	<4	614	22	2.8	1.5	10	3.0	0.1	34.6	16.32	12.64	0.35	1.56	1.0
65-95	6.7	6.4	0	0.14	0.39	0.6	<4	499	36	3.9	1.5	11	7.5	0.1	33.3	16.76	13.08	0.42	1.48	1.3
95-150	8.1	7.8	11.8	0.19	0.44	0.1	<4	409	33	3.3	0.8	6	2.6	<0.1	27.6	13.78	9.83	0.42	1.04	1.5

**Note:** Row sample bulked from 20 cores (0-10 cm) taken from along the vine rows 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.