

## LOAM OVER RED CLAY ON CALCAREOUS ROCK

**General Description:** *Medium thickness loamy surface soil over a well structured red clay, calcareous at moderately shallow depth over basement rock within 100 cm.*

**Landform:** Slopes of undulating to rolling low hills and rises.

**Substrate:** Fine grained basement rock mantled by fine carbonate.

**Vegetation:**



**Type Site:** Site No.: CM101

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

Hundred: Upper Wakefield

Annual rainfall: 625 mm

Sampling date: 12/05/04

Landform: Lower slope in landscape of undulating low hills, 10% slope

Surface: Firm with no stones

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-12	Dark reddish brown firm loam with moderate granular structure. Clear to:
12-30	Dark reddish brown firm medium clay with strong fine polyhedral structure. Gradual to:
30-45	Dark reddish brown firm medium clay with strong fine polyhedral structure. Gradual to:
45-75	Weathering siltstone with 20-50% fine calcareous segregations in cleavage planes.



**Classification:** Haplic, Hypercalcic, Red Chromosol; medium, non-gravelly, loamy / clayey, moderate

## Summary of Properties

- Drainage:** Well drained. The soil is unlikely to remain saturated for more than a day or so following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderately high, as indicated by the exchangeable cation data. Note that the high exchangeable cation value for the surface layer is largely attributable to its very high organic carbon level, rather than clay content. Apart from nitrogen and phosphorus, these soils are not prone to specific nutrient deficiencies.
- pH:** Slightly alkaline at the surface, alkaline with depth.
- Rooting depth:** 75 cm in pit, but few roots below 45 cm.
- Barriers to root growth:**
- Physical:** Underlying basement rock is the only physical barrier.
- Chemical:** There are no apparent chemical barriers.
- Water holding capacity:** Approximately 80 mm (total available) for annual crop and pasture plants. Approximately 40 mm (readily available) in potential grape vine rootzone of 45 cm plus a fraction of the weathering rock.
- Seedling emergence:** Good to fair (depending on the degree of structure decline of the surface).
- Workability:** Satisfactory.
- Erosion Potential**
- Water:** Moderate due to ground slope.
- Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC 1:5 dS/m	ECe dS/m	Cl mg/kg	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-12	7.7	7.1	0	0.18	0.621	19	2.78	8	689	24	0.9	-	-	-	-	25.4	19.5	4.59	0.15	1.18	0.6
12-30	7.9	7.1	0.7	0.16	0.304	13	1.22	5	451	27	0.7	-	-	-	-	25.7	20.8	4.01	0.17	0.76	0.7
30-45	8.2	7.4	2.7	0.18	0.251	13	1.19	5	437	18	0.7	-	-	-	-	26.8	21.8	4.07	0.20	0.72	0.7
45-75	8.8	7.7	53.3	0.18	0.303	15	0.60	7	300	20	0.5	-	-	-	-	17.9	12.9	4.39	0.24	0.33	1.3

**Note:** Sum of cations is an estimate of cation exchange capacity, a measure of the soil's capacity to store and release nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the sum of cations.