

GRADATIONAL CLAY LOAM OVER CALCAREOUS ROCK

General Description: *Friable clay loam overlying a reddish brown well structured clay formed on calcified fine grained rock*

Landform: Slopes of undulating rises and low hills

Substrate: Fine grained rock (slate or shale) with pockets of soft carbonate, often with a semi-hard cap

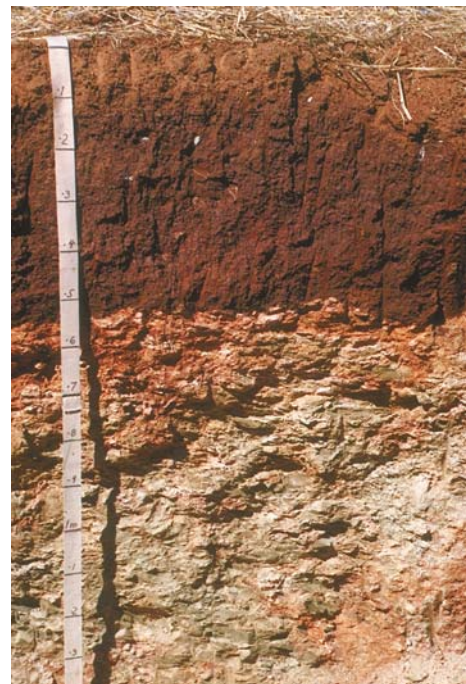
Vegetation: Blue gum woodland



Type Site: Site No.: CM021
 1:50,000 sheet: 6630-3 (Clare) Hundred: Upper Wakefield
 Annual rainfall: 600 mm Sampling date: 04/12/91
 Landform: Lower slope of an undulating rise, 5% slope
 Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown clay loam with strong granular structure. Abrupt to:
10-20	Dark reddish brown light medium clay with strong polyhedral structure. Clear to:
20-40	Dark reddish brown light medium clay with strong angular blocky structure. Gradual to:
40-55	Dark reddish brown medium clay with strong prismatic structure. Abrupt to:
55-90	Soft carbonate with more than 50% weathered slate fragments. Gradual to:
90-150	Weathering slate with up to 10% soft carbonate in pockets and rock cleavages.



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

Summary of Properties

Drainage The soil is well drained due to its very strong structure, and is unlikely to remain wet for more than a few days at a time.

Fertility The soil has a high inherent level of fertility as indicated by the high CEC values and high proportions of exchangeable calcium. Organic matter levels are adequate, but phosphorus is low. This is a highly productive soil.

pH Neutral to 55 cm (higher pH in the 0-10 cm layer is due to road dust), grading to alkaline in the weathering rock.

Rooting depth 55 cm in sampling pit.

Barriers to root growth

Physical: There are no barriers above the weathering rock and carbonate layer. Root growth in these materials depends on the hardness of the carbonate and the inclination of the layers in the rock (ie deeper root growth in vertical fissures compared with horizontal ones).

Chemical: There are no chemical barriers to root growth.

Water holding capacity About 100 mm in the root zone.

Seedling emergence Good.

Workability Good.

Erosion Potential

Water: Moderately low to moderate, due to the slope. The well structured clay loam surface has a high natural resistance to erosion.

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 -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	
0-10	7.8	7.6	3.4	0.15	0.4	1.70	21	364	10.0	1.4	1.3	16.5	20.0	0.5	19.7	15.5	2.3	0.19	0.71	1.0
10-20	6.6	6.1	0	0.08	0.2	1.18	15	353	6.0	1.5	1.7	21.2	38.9	0.2	19.5	12.3	3.4	0.15	0.83	0.8
20-40	6.6	6.0	0	0.05	0.1	0.92	4	237	3.1	1.9	1.5	12.4	28.2	0.1	19.7	14.7	4.0	0.57	0.62	2.9
40-55	7.2	6.6	0	0.05	0.1	0.73	<4	162	3.3	2.3	1.2	7.3	13.6	0.1	20.2	15.5	4.9	0.43	0.50	2.1
55-90	8.9	8.2	39.1	0.10	0.3	0.13	<4	60	3.3	0.4	0.1	1.3	1.1	0.1	3.8	13.1	2.3	0.28	0.07	7.4

Note: 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.