

SHALLOW CALCAREOUS LOAM (Non scalded)

General Description: *Brown highly calcareous loam becoming more calcareous and silty with depth and grading to weathering basement rock within 100 cm*

- Landform:** Undulating rises
- Substrate:** Weathering siltstone mantled by soft carbonate
- Vegetation:**



- Type Site:**
- | | | | |
|----------------|------------|--------------------|--------------------|
| Site No.: | CU051A | 1:50,000 mapsheet: | 6631-3 (Bundaleer) |
| Hundred: | Reynolds | Easting: | 282350 |
| Section: | 228 | Northing: | 6295800 |
| Sampling date: | 03/11/1994 | Annual rainfall: | 460 mm average |

Paired non scalded (CU051A) and scalded (CU051B) site on the mid slope of an undulating low hill. Firm surface with minor quartzite stones and 6% slope. Up to 10% of the surface is scalded.

Soil Description: CU051A (non scalded site)

Depth (cm)	Description
0-10	Dark brown highly calcareous loam with strong granular structure. Abrupt to:
10-20	Brown very highly calcareous loam with weak blocky structure and 2-10% carbonate nodules. Abrupt to:
20-45	Pink very highly calcareous massive friable silty loam with more than 50% soft carbonate segregations. Diffuse to:
45-70	Pink very highly calcareous massive friable silty loam with 20-50% soft carbonate segregations. Diffuse to:
70-100	Soft highly weathered siltstone. Gradual to:
100-120	Fresh weathering siltstone.



Classification: Epihypersodic, Paralithic, Hypercalcic Calcarosol; medium, non-gravelly, loamy / silty, moderate



Summary of Properties

- Drainage:** The soil is well drained, with a permeable profile and adequate slope for runoff.
- Fertility:** The natural fertility of the soil is moderate, most of the nutrient retention capacity being attributable to surface organic matter. The high carbonate content reduces nutrient availability.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 70 cm in natural soil pit (although few roots below 45 cm). There are few roots below 10 cm in the scalded soil pit
- Barriers to root growth:**
- Physical:** There are no physical barriers apart from shallow depth to rock.
- Chemical:** Very high pH at shallow depth in the natural soil is the main limitation. On the scalded soil, high salinity and sodicity are additional limitations.
- Waterholding capacity:** Approximately 75 mm above the rock (moderately high).
- Seedling emergence:** Good in natural soil; poor in scalded soil due to high surface salinity.
- Workability:** Good.
- Erosion Potential:**
- Water:** Moderate due to the high erodibility of the soil, and the slope.
- Wind:** Moderately low, although these soils will easily pulverize and blow.

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	SAR	Cl mg/kg
											Cu	Mn	Zn		Ca	Mg	Na	K			
0-10	8.1	7.7	-	0.20	1.02	1.9	-	-	-	2.5	-	-	-	13.3	14.45	2.94	0.06	1.08	0.4	0.7	39
10-20	10.4	8.5	-	0.44	0.86	0.9	-	-	-	2.3	-	-	-	10.8	10.11	2.94	0.17	0.60	1.6	1.1	56
20-45	10.3	8.7	-	0.46	0.78	0.2	-	-	-	2.8	-	-	-	4.8	2.92	4.14	0.64	0.22	13.4	2.9	38
45-70	10.4	8.8	-	0.52	0.65	<0.1	-	-	-	2.4	-	-	-	4.4	2.54	3.12	0.76	0.21	17.3	6.4	43
70-100	10.4	8.9	-	0.46	0.44	<0.1	-	-	-	1.8	-	-	-	4.6	2.24	3.26	0.70	0.17	15.3	5.5	19
100-120	10.4	9.0	-	0.42	1.20	<0.1	-	-	-	2.4	-	-	-	5.7	2.37	3.80	1.53	0.27	26.9	6.7	89

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. SAR is sodium adsorption ratio measured on the saturation extract

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

