

## SHALLOW LOAM ON CALCRETED LIMESTONE

**General Description:** *Dark reddish brown, well-structured loam grading to clay loam on calcreted Mt Gambier Limestone*

**Subgroup soil:** B4

**Landform:** Undulating plain

**Substrate:** Miocene limestone

**Vegetation:** Grass.



<b>Type Site:</b>	Site No:	SE149	1:50,000 mapsheet:	7022-2 (Gambier)
	Hundred:	Caroline	Easting:	488680
	Section:	610	Northing:	5792300
	Sampling date:	23/10/08	Annual rainfall:	755 mm average

The site is on a slight rise.

### Soil Description:

Depth (cm)	Description
0–11	Hardsetting, dark reddish brown, heavy loam with fine strong granular structure and 2–10% flakey segregations of unknown constitution.
11–35	Dark reddish brown, clay loam with fine moderate granular structure.
35–36	Strongly cemented laminar calcrete.
36–55	Weak to very weak rock: Mt Gambier limestone.
55–110	Very weak rock which textures as a sandy clay loam: Mt Gambier limestone. The equivalent of a weakly cemented pan.
110–135	Weak to very weak rock: Mt Gambier limestone.



**Classification:** Haplic, Petrocalcic, Red Dermosol; thick, non-gravelly, loamy/-, shallow.

Alternatively: Submelanic, Petrocalcic, Leptic Tenosol; thick, non-gravelly, loamy/-, shallow.



## Summary of Properties

<b>Drainage:</b>	Drainage is imperfect. This is exacerbated by somewhat compacted soil.
<b>Fertility:</b>	Inherent fertility is high, given the high organic content and relatively high clay content of the soil. Boron levels may be marginal for high levels of productivity.
<b>pH:</b>	Soil pH is slightly alkaline to alkaline.
<b>Rooting depth:</b>	Root growth to the base of the soil: 35 cm in the pit where the profile was described.
<b>Barriers to Root Growth:</b>	
<b>Physical:</b>	The soil naturally has very good structure; however, some compaction has occurred: root growth would be restricted to some extent due to this. The limestone base forms an obvious barrier to root growth.
<b>Chemical:</b>	There are no chemical barriers to root growth in the soil.
<b>Waterholding capacity:</b>	Moderately low to moderate. However mild climate reduces the loss of soil moisture to evaporation. Total available: approx 70 mm [(0.11x180)+(0.24x200)]
<b>Seedling emergence:</b>	Moderate.
<b>Workability:</b>	Moderate to good.
<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> %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Al CaCl <sub>2</sub> mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg						Est. ESP
													Cu	Fe	Mn	Zn		Ca	Mg	Na	K	Al	H	
0-11	7.7	7.1	0.3	0.12	0.83	6.4	60	311	13	9.1	1.3	0	1.6	379	39	4.6	20.0	17.6	1.3	0.3	0.7	0.0	0.0	2
11-35	8.1	7.5	0.7	0.12	0.65	2.2	12	160	15	13	1.1	0	1.2	141	54	0.6	20.0	18.3	0.9	0.4	0.5	0.0	0.0	2
35-36																								
36-55																								
55-110	8.8	7.8	4.5	0.13	0.61	0.1	2	42	48	2.4	0.2	0	0.3	10	1.3	0.1	21.1	20.2	0.6	0.2	0.1	0.0	0.1	1
110-135																								

**Note:** Sum of cations approximates the CEC (cation exchange capacity), 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, in this case estimated by the sum of cations.

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

