

## GRADATIONAL RED LOAM ON ROCK

**General Description:** *Hard setting loamy surface, with an ironstone gravelly A2 horizon, overlying a red and pale grey coarsely structured clayey subsoil grading to kaolinitic micaceous siltstone.*

**Landform:** Upper slopes of rolling low hills of the north eastern Mount Lofty Ranges

**Substrate:** Kaolinized meta-siltstones of the Kanmantoo Group

**Vegetation:** Woodland of blue gum and sheoak



<b>Type Site:</b>	Site No.:	CH033	1:50,000 mapsheet:	6728-3 (Tepko)
	Hundred:	Tungkillo	Easting:	318200
	Section:	154	Northing:	6135400
	Sampling date:	12/01/93	Annual rainfall:	700 mm average

Upper slope of rolling low hills, slope 15%. Hard setting surface with minor ironstone.

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown massive fine sandy loam. Clear to:
10-20	Pink massive fine sandy clay loam with 10-20% ironstone and quartz gravel. Abrupt to:
20-35	Yellowish red light clay with strong coarse prismatic structure. Gradual to:
35-60	Red and light grey mottled medium clay with moderate coarse prismatic structure. Diffuse to:
60-90	Yellowish red, red and grey massive silty clay loam. Diffuse to:
90-150	Reddish yellow and yellow massive silty loam (kaolinitic weathering metasiltstone).



**Classification:** Bleached, Mesotrophic, Red Dermosol; medium, non-gravelly, loamy / clayey, moderate



## Summary of Properties

- Drainage:** The soil is well drained. The profile is unlikely to remain wet for more than a few days.
- Fertility:** Inherent fertility is moderately low, as indicated by the low exchangeable cation values. This is due to the high degree of weathering and associated development of kaolin-rich clay minerals. Fertility depends on preventing acidification and associated cation leaching and iron mobilization. Phosphorus and magnesium levels are low.
- pH:** Acidic at the surface, neutral with depth. Dolomite is required for pH correction.
- Rooting depth:** 100 cm in pit.
- Barriers to root growth:**
- Physical:** Poor surface structure and high clay strength may impede root development.
  - Chemical:** Low natural fertility (i.e. low capacity to retain nutrients) is the principal limitation to root growth.
- Waterholding capacity:** 120 mm in pit.
- Seedling emergence:** Good to fair, depending on the degree of hard setting and surface sealing, which will increase with decreasing organic matter content.
- Workability:** Good to fair, depending on surface organic matter status.
- Erosion Potential:**
- Water:** Moderately high, due to the 15% slope.
  - Wind:** 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> 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	
Paddock	5.3	4.7	0	0.07	0.34	3.4	10	220	-	1.2	1.87	332	31.1	8.77	10.1	6.16	1.22	0.14	0.49	1.4
0-10	5.4	4.7	0	0.06	0.22	3.2	16	300	-	1.2	-	-	-	-	10.5	6.61	1.15	0.12	0.61	1.1
10-20	5.9	5.2	0	0.04	0.13	0.73	6	240	-	1.1	-	-	-	-	5.4	3.63	0.88	0.13	0.42	2.4
20-35	6.4	5.8	0	0.06	0.13	0.35	3	290	-	2.2	-	-	-	-	6.1	3.32	2.33	0.18	0.59	3.0
35-60	6.5	5.9	0	0.08	0.15	0.34	7	290	-	2.4	-	-	-	-	5.7	3.04	2.83	0.25	0.56	4.4
60-90	6.7	6.0	0	0.08	0.22	0.17	<2	140	-	2.0	-	-	-	-	4.6	1.68	2.71	0.26	0.15	5.6
90-150	7.3	6.7	0	0.09	0.32	0.07	4	78	-	0.7	-	-	-	-	2.0	0.75	1.59	0.23	0.04	11.5

**Note:** Paddock sample bulked from 20 cores (0-10 cm) taken 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.

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

