

LOAM OVER ACIDIC RED CLAY ON ROCK

General Description: Thin loamy surface soil overlying a red clay subsoil grading to highly weathered, often kaolinised, metamorphosed siltstone or fine grained schist.

Landform: Slopes of rolling low hills in the north eastern Mount Lofty Ranges

Substrate: Weathering, sometimes kaolinitic, micaceous siltstone, schist of the Tappanappa Formation

Vegetation: Eucalyptus leucoxylon / Casuarina stricta woodland



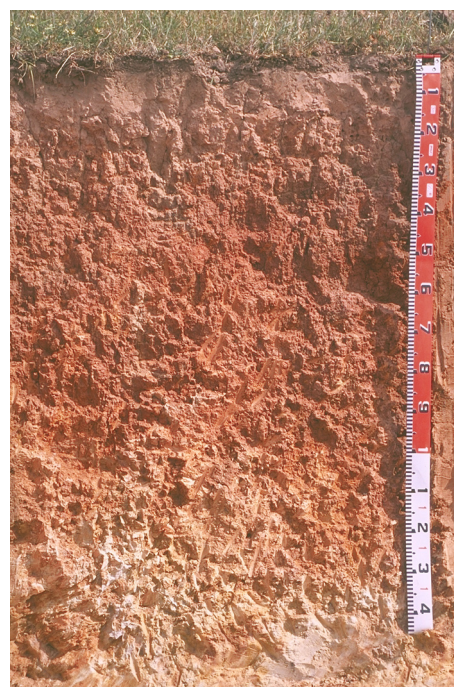
Type Site:

Site No.:	CH008	1:50,000 mapsheet:	6728-3 (Tepko)
Hundred:	Tungkillo	Easting:	319150
Section:	130	Northing:	6137000
Sampling date:	28/10/91	Annual Rainfall:	690 mm average

Midslope of a gently sloping low hill, slope 8%. Hard setting surface, with no stone.

Soil Description:

Depth (cm)	Description
0-5	Dark brown, moderately granular loam. Sharp to:
5-16	Light brown loam with weak coarse prismatic structure and 10% quartz and schist gravel. Abrupt to:
16-25	Red light clay with strong prismatic structure. Clear to:
25-45	Red medium clay with strong prismatic structure. Gradual to:
45-70	As for 25-45 cm. Gradual to:
70-100	Red light clay with strong prismatic structure and 10% soft schist fragments. Gradual to:
100-130	Yellowish red silty clay loam with moderate prismatic structure and increasing amounts of schist fragments. Gradual to:
130-160	Yellowish red, yellow and brown highly weathered fine grained schist.



Classification: Bleached-Sodic, Eutrophic, Red Chromosol; medium, non-gravelly, loamy / clayey, deep



Summary of Properties

Drainage:	Well drained. The soil is unlikely to remain wet for more than a few days.
Fertility:	Moderate inherent fertility, as indicated by the exchangeable cation data. Fertility status is reduced by cation leaching. Magnesium levels are low, calcium levels are marginal. Phosphorus levels low, but potassium is adequate. Organic carbon levels are high.
pH:	Acidic at surface, slightly acidic to neutral with depth. Dolomite is required to correct the problem.
Rooting depth:	100 cm but very few below 70 cm in pit.
Barriers to root growth:	
Physical:	The hardness of the soil restricts root development, particularly if the soil dries rapidly in spring.
Chemical:	None that are not readily correctable. Acidity must be avoided, as soils with low base status clays are prone to aluminium toxicity if pH falls too low.
Waterholding capacity:	120 mm in rootzone, but efficiency of uptake is low because of poor root distribution.
Seedling emergence:	Fair due to hard setting, sealing surface. Organic matter levels must be maintained.
Workability:	Fair, due to the narrow moisture range within which cultivation is effective and not damaging.
Erosion Potential:	
Water:	Moderate, due to the low permeability of the clay at shallow depth, and the 8% slope.
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 mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	Ext Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
0-5	5.2	4.7	0	0.10	0.4	4.7	14	263	-	1.2	0.5	335	33.8	1.5	10.5	6.3	1.2	0.44	0.58	4.2	4
5-16	5.3	4.5	0	0.04	0.2	1.0	<4	146	-	0.9	0.3	58	16.8	0.2	5.8	2.5	0.5	0.93	0.31	16.0	2
16-25	5.9	5.1	0	0.04	0.1	0.6	<4	164	-	1.3	0.3	6.5	0.7	0.1	7.6	4.2	1.6	0.53	0.42	3.9	<1
25-45	6.6	6.0	0	0.05	0.1	0.4	<4	169	-	2.1	0.1	1.8	0.6	0.1	10.5	5.5	3.5	0.53	0.48	5.0	<1
45-70	6.7	6.3	0	0.05	0.1	0.2	<4	131	-	1.9	0.1	1.7	0.2	0.1	8.6	4.7	3.7	0.83	0.34	9.7	<1
70-100	6.7	6.3	0	0.05	0.1	0.1	<4	81	-	1.5	0.1	3.1	0.3	0.1	7.2	3.7	3.6	0.99	0.14	13.8	<1
100-130	6.6	6.1	0	0.05	0.1	0.1	<4	35	-	1.5	0.1	2.4	0.1	0.1	8.9	3.0	3.7	0.71	0.09	8.0	-
130-160	6.9	6.1	0	0.04	0.1	0.1	<4	29	-	0.7	0.1	5.0	0.0	0.1	5.6	2.1	3.2	0.53	0.04	9.5	-

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.

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

