

GRADATIONAL LOAM OVER ROCK

General Description: *Brown loamy surface with a paler coloured subsurface horizon overlying a brown, yellow and red mottled clay loamy to clayey subsoil forming in weathering schist*

Landform: Low hills in the central - eastern Mt. Lofty Ranges

Substrate: Micaceous schist.

Vegetation: Red gum woodland



Type Site: Site No.: CH090

1:50,000 sheet: 6627-1 (Echunga)

Hundred: Kanmantoo

Annual rainfall: 675 mm

Sampling date: 19/01/96

Landform: Upper slope of low hill, 15% slope

Surface: Firm with occasional sandstone rock fragments

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown fine sandy loam with moderate granular structure. Abrupt to:
10-20	Dark brown fine sandy heavy loam with moderate polyhedral structure. Abrupt to:
20-35	Brown fine sandy clay loam with moderate polyhedral structure and 2-10% schist fragments. Gradual to:
35-55	Light olive brown massive fine sandy loam with 20-50% schist fragments. Gradual to:
55-140	Weathering schist.



Classification: Melacic, Mesotrophic, Brown Dermosol; medium, non-gravelly, loamy / clay loamy, moderate

Summary of Properties

Drainage	Well drained. The soil is unlikely to remain wet for more than a day or so following heavy rain.
Fertility	The natural fertility of the soil is moderate, as indicated by the CEC values. Note that the difference between the pit and paddock samples is due to organic carbon. The data from the paddock samples indicate that all nutrients are in adequate supply, although the ratio of potassium to magnesium is too high. Phosphorus is marginal, and the high iron content is likely to cause phosphate fixation.
pH	Acidic at the surface (strongly acidic in the pit), acidic at depth. Dolomite is needed to correct pH.
Rooting depth	55 cm in pit (tree roots growing in weathering rock below 55 cm).
Barriers to root growth	
Physical:	Shallow depth to rock in places is likely to be the only physical limitation.
Chemical:	Aluminium toxicity is likely where pH is less than 4.8 (CaCl ₂).
Water holding capacity	Approximately 75 mm (moderate).
Seedling emergence	Good.
Workability	Good, except where rocks are near the surface.
Erosion Potential	
Water:	Moderately high, due to the slope of the land.
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 (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	6.1	5.6	0	0.19	0.86	5.0	28	645	19	1.4	6.0	1400	140	5.1	17.3	12.84	2.15	0.19	1.26	1.1
0-10	5.1	4.4	0	0.07	0.54	2.2	6	470	13	0.5	-	-	-	-	9.1	3.04	0.46	0.07	0.68	0.8
10-20	5.3	4.4	0	0.05	0.30	1.4	<4	403	12	0.5	-	-	-	-	8.2	2.83	0.58	0.10	0.63	1.2
20-35	5.7	4.7	0	0.04	0.25	0.7	<4	369	11	0.3	-	-	-	-	6.3	2.74	0.79	0.13	0.64	2.1
35-55	5.7	4.9	0	0.05	0.29	0.4	<4	304	12	0.1	-	-	-	-	6.0	2.01	1.07	0.15	0.56	2.5
55-140	6.1	5.1	0	0.04	0.28	0.1	5	258	10	<0.1	-	-	-	-	5.8	1.50	1.75	0.27	0.42	4.7

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.