

ACIDIC GRADATIONAL LOAM OVER ROCK

General Description: *Dark brown loam grading to a paler coloured gravelly clay loam over a brown well structured clay containing increasing shaly gravel with depth. Soft weathering rock within a metre.*

Landform: Hillslopes of rolling low hills of the central Mt. Lofty Ranges

Substrate: Proterozoic shales and siltstones

Vegetation: Stringybark (*Euc. obliqua*) forest



Type Site: Site No.: CH097

1:50,000 sheet: 6628-3 (Adelaide) Hundred: Onkaparinga

Annual rainfall: 1050 mm Sampling date: 06/09/96

Landform: Upper slope of a rolling rise with 15% gradient

Surface: Firm with 2-10% siltstone fragments

Soil Description:

Depth (cm)	Description
0-10	Dark brown loam with moderate granular structure and 2-10% siltstone gravel. Clear to:
10-25	Brown clay loam with weak granular structure and 2-10% siltstone gravel. Clear to:
25-35	Orange light clay with moderate polyhedral structure and 2-10% siltstone gravel, mixed with pockets of brown surface soil. Clear to:
35-55	Orange and red medium clay with strong polyhedral structure and 2-10% siltstone gravel. Gradual to:
55-80	Orange, yellowish brown and red light clay with strong polyhedral structure and 20-50% siltstone gravel. Gradual to:
80-120	Soft weathered siltstone with pockets of yellowish brown and red silty clay loam.



Classification: Haplic, Mesotrophic, Brown Dermosol; medium, slightly gravelly, loamy / clayey, deep

Summary of Properties

Drainage	Moderately well drained. Saturation rarely extends for more than a week following prolonged rain.
Fertility	Natural fertility is moderate due to the degree of leaching of the soil. Exchangeable cation levels are adequate at the surface but decrease significantly with depth, indicating that most of the nutrient retention capacity is associated with organic matter. No surface nutrient deficiencies are apparent from the test data.
pH	Acidic throughout, but more strongly acidic in the subsoil. Lime is required to correct pH.
Rooting depth	120 cm in pit, but few roots below 80 cm.
Barriers to root growth	
Physical:	None.
Chemical:	Low pH and high aluminium.
Water holding capacity	140 mm total available, 70 mm readily available in root zone.
Surface condition	Firm surface, easily worked.
Erosion Potential	
Water:	Moderately high due to the 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 -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	Exch Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
Row	6.6	5.6	0	0.05	0.27	2.8	48	236	7.3	1.0	57.8	128	26.2	11.3	13.6	9.04	2.38	0.12	0.54	0.9	4.2
0-10	6.4	5.5	0	0.05	0.19	2.2	19	239	6.3	1.0	-	-	-	-	10.5	5.43	1.45	0.08	0.47	0.8	5.1
10-25	6.3	5.3	0	0.04	0.13	1.8	15	168	5.5	0.8	-	-	-	-	9.4	5.08	1.18	0.12	0.36	1.3	6.3
25-35	6.1	5.0	0	0.03	0.10	1.3	7	128	6.2	0.7	-	-	-	-	8.0	3.94	1.41	0.13	0.28	1.6	18.2
35-55	5.6	4.7	0	0.03	0.08	0.7	4	84	18	0.8	-	-	-	-	8.5	3.40	2.12	0.14	0.20	1.6	35.0
55-80	5.6	4.8	0	0.05	0.10	0.3	3	65	69	0.4	-	-	-	-	7.2	2.80	3.53	0.16	0.16	2.2	17.7
80-120	5.6	4.7	0	0.04	0.10	0.1	3	46	64	0.4	-	-	-	-	4.4	1.03	2.68	0.13	0.09	3.0	17.9

Note: Row sample bulked from 20 cores (0-15 cm) taken along the planting rows.

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.