

ACIDIC SANDY LOAM OVER BROWN CLAY ON ROCK

General Description: *Thin greyish sandy loam overlying a yellowish friable clayey subsoil developing in weathered micaceous sandstone*

Landform: Crests and slopes of undulating to rolling low hills of the Southern Mount Lofty Ranges

Substrate: Micaceous or weakly metamorphosed sandstones of the Backstairs Passage Formation

Vegetation: Low Eucalyptus baxteri woodland with shrubby understorey



Type Site: Site No.: CH013

1:50,000 sheet: 6627-3 (Willunga)

Hundred:

Kondoparinga

Annual Rainfall: 800 mm

Sampling date:

29/07/92

Landform: Low hills, upper slope of 4%

Surface: Firm, with minor ironstone and sandstone gravel

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-15	Dark grey brown sandy loam with 10% ironstone and sandstone gravel. Clear to:
15-33	Pink light sandy clay loam with 10% ironstone and sandstone gravel. Clear to:
33-48	Brown and red fine sandy clay with strong fine polyhedral structure. Gradual to:
48-85	Yellow, red and light brown light clay with moderate fine polyhedral structure. Diffuse to:
85-120	Yellow, brown and red massive fine sandy clay loam. Diffuse to:
120-180	Highly weathered kaolinitic weakly metamorphosed sandstone.



Classification: Bleached, Mesotrophic, Brown Chromosol; thick, slightly gravelly, loamy / clayey, deep

Summary of Properties

Drainage	Well drained. Soil is unlikely to remain wet for more than a few days.
Fertility	Marginal to moderate natural fertility, as indicated by the exchangeable cation data. Analyses indicate that magnesium levels are low relative to calcium and that manganese appears low. Trace elements are very low in subsurface layers.
pH	Slightly acidic in the surface to strongly acidic with depth. Dolomite is required for pH correction.
Rooting depth	85 cm in the pit, although there is little growth below 50 cm.
Barriers to root growth	
Physical:	No apparent physical barriers.
Chemical:	Low pH and probable high aluminium (indicated by the kaolinitic material in the lower subsoil), may restrict root growth. Low subsoil trace element levels may be limiting. There is no salinity or problem with other toxic elements.
Water holding capacity	120 mm in rootzone (high).
Seedling emergence	Fair to good. The surface soil may set hard if organic matter levels become too low. Current levels are satisfactory.
Workability	Good, due to lack of stone and relatively well structured surface.
Erosion Potential	
Water:	Moderately low.
Wind:	Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CaCO 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 (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	6.0	5.5	0	0.10	0.61	3.9	27	180	-	0.7	1.6	68	3.9	6.6	9.1	6.3	0.9	0.08	0.34	0.9
											*2.0	*105	*9.7	*6.7						
0-15	6.3	5.7	0	0.12	0.91	2.7	12	190	-	0.6	1.2	54	1.9	0.5	6.8	5.3	0.4	0.09	0.37	1.3
15-33	6.3	5.7	0	0.04	0.14	0.5	<2	100	-	0.7	0.1	12	0.1	0.2	3.7	2.3	0.7	0.10	0.20	na
33-48	6.6	5.7	0	0.05	0.09	0.3	<2	81	-	1.8	<0.1	3	<0.1	<0.1	6.8	2.3	3.5	0.21	0.10	3.1
48-85	5.5	5.4	0	0.06	0.12	0.1	<2	43	-	2.0	<0.1	1	<0.1	<0.1	6.0	1.3	4.1	0.28	0.06	4.7
85-120	4.6	4.2	0	0.05	0.12	<0.1	<2	10	-	1.6	<0.1	2	<0.1	<0.1	3.1	<0.4	1.2	0.18	<0.05	na
120-180	4.3	4.0	0	0.05	0.11	<0.1	<2	15	-	1.2	<0.1	28	2.5	3.5	2.5	<0.4	0.8	0.11	<0.05	na

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

* EDTA trace element analyses for "paddock" sample.

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.