

ACIDIC SANDY LOAM OVER BROWN CLAY ON ROCK

General Description: *Grey brown sandy loam over a brown or yellow friable clayey subsoil grading to weathering coarse grained rock*

Landform: Slopes of rises and low hills

Substrate: Precambrian sandstone, deeply weathered and kaolinized at this site

Vegetation: Open stringybark - blue gum forest



Type Site: Site No.: CH115

1:50,000 sheet:	6627-4 (Noarlunga)	Hundred:	Kuitpo
Annual rainfall:	875 mm	Sampling date:	04/03/97
Landform:	Upper slope of an undulating rise, 8% slope		
Surface:	Firm with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-8	Very dark grey sandy loam with weak granular structure and 10-20% ironstone and quartz gravel. Abrupt to:
8-28	Orange massive sandy loam with 10-20% ironstone and quartz gravel. Abrupt to:
28-50	Orange and red medium clay with strong polyhedral structure and 20-50% soft ferruginous segregations. Gradual to:
50-85	Yellowish brown, red and yellow medium clay with strong polyhedral structure and 20-50% soft ferruginous segregations. Diffuse to:
85-120	Light grey, red and brownish yellow light clay with moderate polyhedral structure and 20-50% soft ferruginous segregations. Diffuse to:
120-150	Red, yellow and white weakly structured fine sandy light clay with 20-50% soft ferruginous segregations and sandstone fragments.



Classification: Haplic, Eutrophic, Brown Chromosol; medium, slightly-gravelly, loamy/clayey, very deep

Summary of Properties

Drainage	Moderately well drained. Water will "perch" on top of the clay for a week or two following prolonged rain.
Fertility	Natural fertility is moderately low. Test data indicate satisfactory levels of all measured nutrients other than manganese - a tissue test is required to establish deficiency. Calcium : magnesium ratio is very high - possible magnesium deficiency. Organic carbon levels are high. Phosphate fixation is likely in this soil (indicated by the high ironstone content).
pH	Neutral in surface (6.2 is ideal), acidic with depth. Dolomite is needed for correction.
Rooting depth	85 cm in pit, but few roots below 50 cm.
Barriers to root growth	
Physical:	None.
Chemical:	Aluminium toxicity is likely in this soil. Deep subsoil pH values are low, causing release of aluminium.
Water holding capacity	Approximately 65 mm in root zone.
Seedling emergence:	No restriction on seedling emergence.
Workability:	Good.
Erosion Potential	
Water:	Moderate.
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	6.7	6.0	0	0.12	-	3.2	37	260	7.0	1.1	1.4	249	10	3.3	14.8	11.9	1.3	0.14	0.55	0.9
0-8	6.8	6.1	0	0.12	-	3.0	44	251	6.7	1.3	3.2	302	10	3.7	12.2	9.9	1.1	0.13	0.51	1.1
8-28	6.3	5.5	0	0.03	-	0.5	9	62	2.8	0.4	0.4	88	2.1	0.4	3.9	1.9	0.5	0.10	0.09	2.6
28-50	5.9	5.2	0	0.03	-	0.4	5	162	43	0.8	0.2	33	1.0	0.9	14.1	4.3	5.5	0.30	0.43	2.1
50-85	6.1	5.5	0	0.03	-	0.1	1	119	69	0.8	0.1	16	1.0	0.9	12.4	2.4	6.7	0.32	0.27	2.6
85-120	5.9	5.0	0	0.03	-	0.1	1	77	65	0.9	0.13	13	1.1	0.8	11.4	2.0	6.7	0.45	0.21	3.9
120-150	5.6	4.5	0	0.03	-	0.1	2	43	55	1.1	0.14	11	1.1	0.6	8.7	1.3	5.1	0.40	0.10	4.6

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.