

SANDY LOAM OVER BROWN CLAY ON KAOLINITIC ROCK

General Description: *Sandy to loamy surface soil with ironstone gravel, overlying a brownish clay subsoil grading to soft, kaolinized weathering fine micaceous sandstone*

Landform: Upper slopes and crests of undulating to rolling low hills of the Fleurieu Peninsula

Substrate: Soft highly weathered and kaolinized micaceous sandstones of the Backstairs Passage Formation

Vegetation: Eucalyptus baxteri scrub

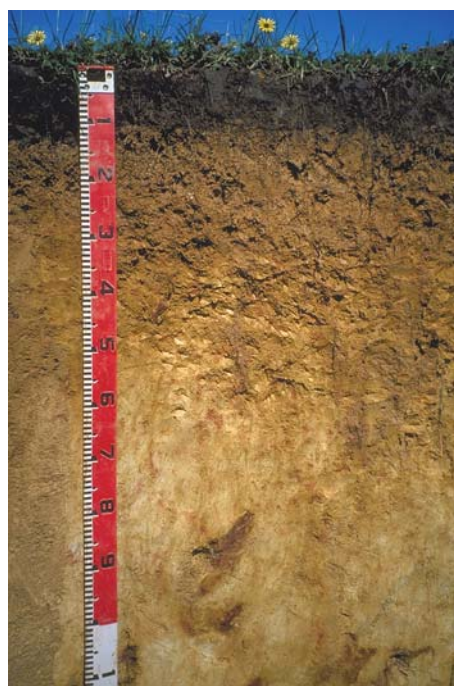


Type Site: Site No.: CH026

1:50,000 sheet:	6526-1 (Torrens Vale)	Hundred:	Waitpinga
Annual rainfall:	750 mm	Sampling date:	14/10/92
Landform:	Upper slope of undulating low hills, slope 2%		
Surface:	Firm surface with minor ironstone		

Soil Description:

Depth (cm)	Description
0-10	Very dark grey fine sandy loam with moderate granular structure and 10% ironstone nodules. Abrupt to:
10-17	Light yellowish brown loam with weak structure and 15% ironstone nodules. Clear to:
17-32	Orange firm medium clay with strong angular blocky structure and 25% ironstone fragments. Clear to:
32-55	Brownish yellow and red silty clay with strong polyhedral structure and 20% ironstone fragments. Gradual to:
55-85	Yellow and red silty clay with weak prismatic structure and a trace of ironstone fragments. Diffuse to:
85-170	White and yellow fine sandy clay loam (highly weathered fine sandstone).



Classification: Ferric, Mesotrophic, Brown Kurosol; medium, gravelly, loamy / clayey, moderate

Summary of Properties

Drainage	Well drained. Soil is unlikely to remain wet for more than a few days.
Fertility	Natural fertility is low, as indicated by the low CEC. This is due to the predominance of kaolinite in the clay, a result of the degree of weathering of the underlying rock. Calcium, magnesium and potassium are all marginally deficient due to cation leaching. Phosphorus is adequate. Organic carbon levels are high, indicating low biological activity.
pH	Acidic at surface, strongly acidic with depth.
Rooting depth	85 cm at type site, but few roots occur below 55 cm.
Barriers to root growth	
Physical:	None.
Chemical:	Low fertility and marginal aluminium toxicity caused by the combination of low pH and highly kaolinitic clay.
Water holding capacity	120 cm in rootzone, but at least 20 mm is unavailable due to low root density.
Seedling emergence	Good, provided that organic matter levels are maintained at the surface.
Workability	Good.
Erosion Potential	
Water:	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	Ext Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
0-10	5.2	4.6	0	0.07	0.25	4.7	27	76	-	1.4	2.9	443	5.3	1.1	7.4	4.5	1.60	0.15	0.17	2.0	6
10-17	5.1	4.6	0	0.04	0.11	1.2	<4	34	-	1.3	0.4	103	0.3	0.2	3.5	1.7	0.49	0.13	0.09	3.7	5
17-32	5.2	4.6	0	0.04	0.08	1.2	<4	39	-	2.0	0.1	13	<0.1	0.3	5.3	2.7	1.17	0.24	0.11	4.5	2
32-55	5.2	5.2	0	0.04	0.06	0.3	<4	37	-	1.8	<0.1	3	<0.1	<0.1	1.3	1.7	2.07	0.22	0.07	na	<1
55-85	5.0	4.8	0	0.05	0.08	0.4	<4	30	-	1.4	<0.1	1	<0.1	0.1	1.6	0.54	1.63	0.16	0.07	na	<1
85-170	4.7	4.3	0	0.05	0.09	<0.1	<4	27	-	1.4	<0.1	1	<0.1	0.1	1.2	0.28	0.70	0.14	0.06	na	4

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.