

ACIDIC LOAM OVER BROWN CLAY ON WEATHERED ROCK

General Description: *Loamy to clay loamy surface grading to a well structured brown clayey subsoil forming in fine grained metamorphic rock*

Landform: Slopes of undulating to rolling low hills and rises

Substrate: Metamorphosed siltstone

Vegetation: Stringybark (*Euc. baxteri*) forest



Type Site: Site No.: CH103

1:50,000 sheet:	6526-4 (Cape Jervis)	Hundred:	Waitpinga
Annual rainfall:	750 mm	Sampling date:	17/10/96
Landform:	Midslope of an undulating rise, 7% slope		
Surface:	Hard setting, no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown loam with weak granular structure and 2-10% ironstone nodules. Clear to:
10-25	Yellowish brown massive clay loam with 2-10% ironstone nodules. Clear to:
25-45	Yellowish brown and orange medium clay with strong fine polyhedral structure, 2-10% quartz gravel and 2-10% ironstone nodules. Gradual to:
45-60	Yellowish brown, olive and orange medium clay with strong fine polyhedral structure and 2-10% quartz gravel. Gradual to:
60-90	Olive brown, yellowish brown and orange medium clay with coarse blocky breaking to fine polyhedral structure. Gradual to:
90-140	Light grey, olive and red medium clay with very coarse prismatic breaking to moderate blocky structure (kaolinitic weathered rock).



Classification: Sodic, Eutrophic, Brown Dermosol; medium, slightly gravelly, loamy / clayey, deep

Summary of Properties

Drainage	Moderately well drained. Parts of the profile will be saturated for a week or so at a time during winter.
Fertility	Natural fertility is moderately low, due the degree of weathering. At the pit site phosphorus levels are low (but note difference between paddock and pit surface samples). Phosphorus, calcium, zinc and copper are marginal to low. Magnesium is marginal, although there are ample subsoil levels. Organic carbon is high.
pH	Soil is acidic throughout. Lime is required to correct the problem.
Rooting depth	140 cm in pit, but few roots below 90 cm.
Barriers to root growth	
Physical:	There are no apparent physical barriers to root growth.
Chemical:	Toxic levels of aluminium can be expected in these soils if they become too acidic. Subsoil sodium levels are moderate.
Water holding capacity	Approximately 120 mm in root zone.
Seedling emergence:	Fair to good, depending on the degree of hard setting and surface sealing (high organic matter levels improve surface condition).
Workability:	Good.
Erosion Potential	
Water:	Moderate. The surface is relatively resistant to erosion, but the slope is long and moderately inclined.
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	5.6	4.7	0	0.07	0.41	4.8	13	155	13	1.0	1.23	362	19.5	1.61	9.5	4.02	1.62	0.51	0.36	5.4
0-10	5.6	4.8	0	0.09	0.48	5.4	62	109	30	0.9	-	-	-	-	12.1	5.19	2.45	0.67	0.28	5.6
10-25	5.8	4.7	0	0.06	0.24	2.5	<4	72	12	0.8	-	-	-	-	7.8	1.61	1.24	0.73	0.16	9.3
25-45	5.8	5.3	0	0.10	0.34	0.7	<4	128	41	2.0	-	-	-	-	12.3	2.65	5.73	1.23	0.39	10.0
45-60	5.8	5.6	0	0.17	0.70	0.4	<4	112	56	1.8	-	-	-	-	11.8	2.60	7.45	1.21	0.32	10.3
60-90	5.5	5.3	0	0.21	0.77	0.2	<4	120	67	2.0	-	-	-	-	12.7	2.54	8.59	1.24	0.34	9.8
90-140	5.4	5.1	0	0.17	0.57	0.1	<4	102	77	2.4	-	-	-	-	13.2	2.61	8.77	0.97	0.41	7.4

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.