ACIDIC LOAM OVER RED CLAY ON WEATHERED ROCK

General Description: *Greyish brown loamy surface with a bleached, ironstone gravelly subsurface layer, overlying a yellowish and red friable clay grading to kaolinitic highly weathered rock*

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

Substrate: Kaolinized sandstones and siltstones of the Kanmantoo Group of metasediments.

Vegetation: Eucalyptus baxteri / Eucalyptus obliqua forest.

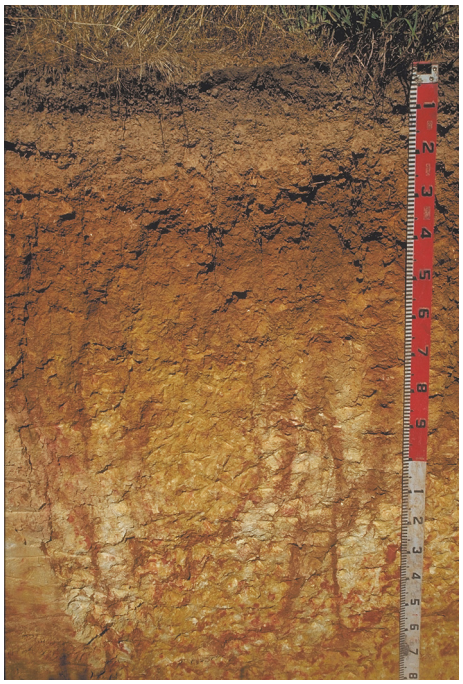
Type Site:

Site No.:	CH058	1:50,000 mapsheet:	6526-4 (Cape Jervis)
Hundred:	Waitpinga	Easting:	247250
Section:	205	Northing:	6055740
Sampling date:	24/12/93	Annual rainfall:	835 mm average

Upper slope of undulating low hills. Firm surface with no stone. 4% slope.

Soil Description:

Depth (cm)	*Description*
0-10	Dark brown fine sandy loam with moderate granular structure and 10% ironstone gravel. Clear to:
10-20	Pink loam with moderate structure and 10-20% ironstone and quartz gravel. Abrupt to:
20-35	Orange and red medium clay with strong fine polyhedral structure and minor quartz gravel. Gradual to:
35-50	Orange and red medium clay with strong coarse blocky structure. Gradual to:
50-75	Brown, orange and red silty light clay with moderate blocky structure. Gradual to:
75-100	Yellow, brown and red silty clay loam with weak blocky structure. Diffuse to:
100-180	Brownish yellow, red and pale yellow massive silty loam (highly weathered kaolinized siltstone).



Classification: Bleached-Sodic, Eutrophic, Red Kurosol; medium, slightly gravelly, loamy/clayey, deep

Summary of Properties

Drainage: Moderately well drained. A perched water will form on top of the clay following prolonged rainfall, but the profile is unlikely to remain saturated for more than a week or so at a time.

Fertility: Natural fertility of the soil, as indicated by the exchangeable cation data, is moderate, due to considerable leaching. Phosphorus, potassium and organic matter levels are all high. Sulphur is adequate. Potassium levels are sufficiently high to induce hypomagnesia.

pH: Acidic at the surface, strongly acidic with depth. Lime additions are required to correct the acidity and to "dilute" the high potassium levels.

Rooting depth: 100 cm in pit, but there are few roots below 50 cm.

Barriers to root growth:

Physical: There are no apparent physical barriers to root growth.

Chemical: Acidity and possibly marginal calcium deficiency are the main chemical limitations. Low pH induced aluminium toxicity is commonly a problem on these soils but not at this site.

Waterholding capacity: Approximately 130 mm in rootzone.

Seedling emergence: Good, provided that organic matter levels are kept high.

Workability: Fair to good, although ironstone and quartz gravels will abrade implements.

Erosion Potential:

Water: Moderate.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4 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	5.4	5.0	0	0.16	0.65	5.3	74	539	10.3	1.0	0.5	180	8.0	1.4	12.3	6.5	2.7	0.29	1.57	2.4	5
10-20	5.2	4.9	0	0.07	0.22	1.5	16	226	6.4	0.8	0.5	133	0.7	0.2	7.4	3.5	1.2	0.28	0.78	3.8	2
20-35	5.1	4.8	0	0.06	0.18	1.4	9	249	6.1	1.6	0.1	15	0.2	0.1	11.2	4.7	3.5	0.31	0.96	2.8	<1
35-50	5.2	5.2	0	0.08	0.23	0.6	4	114	48	1.2	<0.1	4	<0.1	0.1	7.6	2.9	4.5	0.30	0.45	3.9	<1
50-75	4.9	5.2	0	0.06	0.15	0.2	4	32	55	0.9	<0.1	3	<0.1	<0.1	5.2	2.0	3.9	0.26	0.18	5.0	<1
75-100	4.7	4.6	0	0.05	0.12	0.1	4	26	33	0.9	<0.1	3	<0.1	<0.1	4.4	1.4	2.8	0.34	0.19	7.7	<1
100-180	4.4	4.6	0	0.06	0.16	0.1	4	9	24	0.3	<0.1	2	<0.1	0.1	1.9	1.2	1.3	0.24	0.09	na	<1

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.

Further information: DEWNR Soil and Land Program