ACIDIC LOAM OVER RED CLAY ON ROCK

General Description: *Medium to thick reddish loam to clay loam overlying a well structured red clay grading to weathering fine grained rock*

Landform: Moderately steep to steep hillslopes.

Substrate: Siltstones and shales

Vegetation: Euc. leucoxylon - Euc. camaldulensis woodland.

Type Site:

Site No.:	CH109	1:50,000 mapsheet:	6628-1 (Barossa)
Hundred:	Para Wirra	Easting:	307950
Section:	941	Northing:	6153700
Sampling date:	03/03/97	Annual rainfall:	695 mm average

Lower slope of a steep low hill. Hard setting surface with 20-10% stone. 65% slope.

Soil Description:

Depth (cm)	*Description*
0-15	Dark reddish brown hard loam with weak granular structure and 2-10%siltstone gravel. Clear to:
15-35	Reddish brown very hard clay loam with weak blocky structure and 20-50% siltstone fragments. Abrupt to:
35-60	Dark reddish brown hard medium clay with strong polyhedral structure and 20-50% siltstone fragments. Gradual to:
60-100	Dark red friable medium clay with strong polyhedral structure and more than 50% siltstone fragments. Diffuse to:
100-200	Weathering siltstone.

Classification: Haplic, Eutrophic, Red Chromosol; thick, slightly gravelly, loamy / clayey, deep

Summary of Properties

Drainage: Well drained. The soil rarely remains saturated for more than a day or so after prolonged rain.

Fertility: Natural fertility is moderately high. Test results indicate very low phosphorus levels and marginal sulphur and copper. Organic carbon levels are satisfactory. Calcium : magnesium ratio is slightly high.

pH: Slightly acidic at the surface, neutral at depth.

Rooting depth: 60 cm in cutting.

Barriers to root growth:

Physical: None, except shallow depth to rock.

Chemical: Manganese toxicity occurs in these soils if pH falls too low.

Waterholding capacity: Approximately 90 mm in rootzone.

Seedling emergence: Hard setting - prone to compaction.

Workability: Not relevant - too steep.

Erosion Potential:

Water: Very high, due to the steep slope.

Wind: Moderately low - only heavy over-grazing will cause a hazard.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	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 (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	6.2	5.2	0	0.05	-	2.3	6	551	4.5	0.9	1.1	110	422	3.7	15.5	9.0	2.0	0.14	0.91	0.9
0-15	6.4	5.4	0	0.04	-	1.8	7	622	3.4	0.8	1.4	103	334	2.3	13.6	7.9	1.9	0.18	0.72	1.3
15-35	6.6	5.7	0	0.03	-	0.7	3	572	4.9	0.5	1.0	79	292	1.1	9.9	6.9	2.6	0.21	0.52	2.1
35-60	6.7	5.8	0	0.03	-	0.5	3	671	3.0	0.5	1.6	51	133	1.0	14.3	8.4	4.8	0.22	0.68	1.5
60-100	7.1	6.1	0	0.02	-	0.3	2	533	3.5	0.8	0.6	43	131	1.2	16.9	8.3	6.3	0.28	0.89	1.7

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