ACIDIC SANDY LOAM OVER BROWN CLAY ON SOFT ROCK

General Description: *Medium thickness grey brown sandy loam over a friable orange clay grading to weathering schist*

Landform: Rises and low hills

Substrate: Schists of the Barossa Complex.

Vegetation: Eucalyptus goniocalyx scrub.

Type Site: Site No.: CH107

1:50,000 sheet:	6628-2 (Onkaparinga)	Hundred:	Para Wirra
Annual rainfall:	750 mm	Sampling date:	03/03/97
Landform:	Upper slope of rolling low hills, 16% slope		
Surface:	Firm 2-10% stone (schist)		

Soil Description:

Depth (cm)	*Description*
0-8	Dark brown soft fine sandy loam with weak granular structure and 2-10% schist gravel. Clear to:
8-30	Light brown firm massive fine sandy loam with 10-20% schist gravel. Gradual to:
30-45	Orange firm fine sandy clay loam with weak polyhedral structure and 10-20% schist gravel. Clear to:
45-70	Orange firm light medium clay with strong fine polyhedral structure and 2-10% schist gravel. Gradual to:
70-110	Reddish yellow, red and yellow brown firm light clay with moderate polyhedral structure and 20-50% schist fragments. Diffuse to:
110-180	Banded yellow, grey and dark red clay loam with weak platy structure and 20-50% schist fragments (kaolinitic weathering rock).

Classification: Bleached-Acidic, Mesotrophic, Red Dermosol; thin, slightly gravelly, loamy/clayey, deep

Summary of Properties

Drainage Moderately well to imperfectly drained. Water will "perch" in the bleached layer above the subsoil clay for periods of one to several weeks after prolonged rain.

Fertility Natural fertility is low. Test data indicate that phosphorus is low, and potassium, sulphur, copper and manganese are marginal. Organic carbon levels are high, and contain most of the soil's calcium. Calcium : magnesium ratio is high - magnesium probably deficient.

pH Acidic at the surface, strongly acidic at depth. Dolomite or high magnesium lime is needed for correction.

Rooting depth 70 cm in pit.

Barriers to root growth

Physical: No physical barriers.

Chemical: Low pH (probable aluminium toxicity) from 45 cm. The difference between CEC and sum of exchangeable cations is largely due to aluminium.

Water holding capacity Approximately 70 mm in root zone.

Seedling emergence: Fair to good.

Workability: Firm to hard setting - prone to compaction. Surface structure will be damaged if soil is worked too dry.

Erosion Potential

Water: Moderately high due to the slope.

Wind: Moderately low - pulverizing by livestock or excessive cultivation create 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-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	5.5	4.7	0	0.07	-	3.7	16	109	6.0	1.2	0.53	165	16.7	2.9	15.2	8.7	1.2	0.14	0.29	0.9
0-8	5.5	4.8	0	0.09	-	4.9	10	138	4.3	1.2	0.61	189	14.5	2.9	16.4	10.0	1.1	0.15	0.30	0.9
8-30	5.7	4.8	0	0.02	-	0.7	3	45	2.3	0.3	0.39	56	3.4	0.75	5.8	1.1	0.4	0.12	0.06	2.0
30-45	5.5	4.5	0	0.02	-	0.9	4	62	1.7	0.4	0.33	52	2.6	0.34	7.3	0.8	0.6	0.13	0.12	1.8
45-70	5.3	4.2	0	0.01	-	0.3	2	66	6.1	0.8	0.19	21	1.3	0.20	8.5	0.5	1.7	0.15	0.15	1.8
70-110	5.2	4.1	0	0.01	-	0.1	2	28	15	0.6	0.17	17	1.2	0.23	7.6	0.2	2.0	0.14	0.12	1.8
110-180	5.2	4.1	0	0.01	-	0.1	1	55	17	0.4	0.24	16	1.3	0.41	6.4	0.1	1.3	0.11	0.07	1.7

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.