SANDY LOAM OVER RED CLAY

General Description: *Medium thickness sandy loam over a red clay, calcareous with depth*

Landform: Undulating rises.

Substrate: Gneissic schist of the Barossa Complex.

Vegetation:

Type Site: Site No.: CY004

1:50,000 sheet:	6429-2 (Ardrossan)	Hundred:	Tiparra
Annual rainfall:	475 mm	Sampling date:	19/02/92
Landform:	Upper slope of 5%		
Surface:	Hard setting with no stones		

Soil Description:

Depth (cm)	*Description*
0-13	Dark reddish brown hard massive sandy loam. Abrupt to:
13-20	Yellowish red (light reddish brown when dry) friable massive light sandy loam. Sharp to:
20-50	Red firm medium clay with moderate coarse prismatic structure. Gradual to:
50-100	Yellowish brown friable massive very highly calcareous gritty sandy loam. Diffuse to:
100-150	Hard massive very highly calcareous sandy loam with 20-50% weathering schist fragments (6-20 mm). Diffuse to:
150-160	Gneissic schist.

Classification: Sodic, Hypercalcic, Red Chromosol; medium, non-gravelly, loamy / clayey, moderate

Summary of Properties

Drainage Well to moderately well drained. The soil is unlikely to remain wet for more than a week following heavy or prolonged rainfall.

Fertility Surface fertility relies on organic matter levels which are adequate, and on phosphorus levels which are adequate. The subsoil's capacity to retain nutrients is high. Zinc levels are marginal - tissue testing is needed to confirm.

pH Neutral at the surface, alkaline with depth.

Rooting depth 100 cm in pit.

Barriers to root growth

Physical: Poor (prismatic) structure in subsoil restricts root density, but does not prevent growth.

Chemical: High sodicity and pH from 100 cm prevent deeper root growth. Low nutrient availability compounds the situation.

Water holding capacity Approximately 110mm in the root zone.

Seedling emergence: Fair. Surface soil susceptible to compaction and sealing which can reduce establishment.

Workability: Fair. Soil may puddle if worked too wet and shatter if worked too dry.

Erosion Potential

Water: Moderate.

Wind: Low.

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 (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP (%)
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.4	7.4	3.2	0.18	1.6	1.17	21	520	-	-	0.41	11.4	4.8	0.44	12.0	9.78	1.29	0.14	1.32	1.2
0-13	8.1	7.2	1.2	0.20	1.6	1.26	33	480	-	-	0.51	22.9	7.5	1.39	10.4	8.91	1.31	0.12	1.17	1.2
13-20	8.2	7.2	0.4	0.06	0.5	0.30	6	190	-	0.7	0.27	2.8	0.6	0.10	4.9	4.34	0.76	0.14	0.38	2.9
20-50	8.8	7.6	5.0	0.23	0.5	0.49	4	360	-	3.8	0.43	8.5	0.4	0.06	43.4	22.48	12.45	2.13	1.57	4.9
50-100	9.6	8.3	46.0	0.54	2.3	0.46	5	250	-	5.0	0.66	3.3	0.3	0.06	23.9	7.54	9.81	5.41	0.63	22.6
100-150	9.7	8.4	36.5	0.64	5.0	0.21	2	210	-	-	0.30	0.8	0.2	0.05	16.0	4.84	6.35	6.34	0.42	39.6
150-160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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.