

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 mapsheet:	6429-2 (Ardrossan)
	Hundred:	Tiparra	Easting:	757700
	Section:	362	Northing:	6206400
	Sampling date:	19/2/1992	Annual rainfall:	440 mm average

Upper slope of 5%. Hard setting surface 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.

Waterholding capacity Approximately 110 mm in the rootzone.

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 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 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.

Further information: [DEWNR Soil and Land Program](#)

