

ACIDIC LOAM OVER RED CLAY ON ROCK

General Description: *Sandy loam to clay loam overlying a brown, red and yellowish mottled well structured clay, forming in weathering siltstone or fine sandstone*

Landform: Slopes of rises and low hills

Substrate: Precambrian siltstone or fine sandstone

Vegetation: Red gum - blue gum woodland



Type Site: Site No.: CH114

1:50,000 sheet: 6627-4 (Noarlunga) Hundred: Kuitpo

Annual rainfall: 850 mm Sampling date: 04/03/97

Landform: Midslope of a moderately inclined rise, 10% slope

Surface: Firm with no stones

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-18	Dark brown hard loam with moderate granular structure. Gradual to:
18-28	Brown (bleached when dry) massive loam with 20-50% quartz gravel. Abrupt to:
28-70	Dark reddish brown medium heavy clay with strong polyhedral structure and 2-10% quartz gravel. Gradual to:
70-100	Dark brown, red and yellow mottled medium clay with strong polyhedral structure and 20-50% weathering siltstone fragments. Gradual to:
100-110	Hard siltstone.



Classification: Bleached, Eutrophic, Red Chromosol; medium, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage	Moderately well to imperfectly drained. Water will "perch" on top of the clay for weeks after prolonged rain.
Fertility	Natural fertility is moderate. Test data indicate that only magnesium is likely to be deficient - hypomagnesia is probable in cattle. Some element concentrations (especially phosphorus) are high. Organic carbon levels are very high.
pH	Acidic at the surface, neutral with depth. Dolomite is needed to correct acidity.
Rooting depth	100 cm in pit, but few roots below 70 cm.
Barriers to root growth	
Physical:	None.
Chemical:	None apparent, but manganese toxicity can be expected if pH falls further.
Water holding capacity	Approximately 75 mm in root zone.
Seedling emergence:	Fair to good. Surface is prone to compaction.
Workability:	Fair to good. Surface will set hard with a narrow moisture range for effective working.
Erosion Potential	
Water:	Moderate due to slope.
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 -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	5.4	4.6	0	0.18	-	4.3	237	670	14	1.2	1.7	994	64	12	13.8	6.2	1.5	0.14	1.44	1.0
0-18	5.3	4.5	0	0.17	-	5.1	328	647	14	1.7	2.2	1335	90	20	14.4	7.3	1.4	0.15	1.31	1.0
18-28	5.5	4.6	0	0.05	-	1.3	120	407	5.2	0.8	1.0	407	25	4.0	9.0	3.2	1.2	0.12	0.88	1.3
28-70	5.8	4.8	0	0.05	-	0.8	23	1282	5.1	1.4	2.1	67	7.9	1.7	19.6	6.2	5.0	0.26	3.30	1.3
70-100	6.4	5.7	0	0.07	-	0.4	4	1161	38	0.5	1.5	42	2.0	1.0	17.6	4.6	6.4	0.28	3.72	1.6

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.