

SANDY LOAM OVER BROWN CLAY

General Description: *Thick grey sandy loam with a bleached A2 horizon over a brown mottled sandy clay to clay*

Landform: Flats and lower slopes

Substrate: Fine to medium grained alluvium

Vegetation: Euc. camaldulensis - Euc. leucoxyton - Euc. goniocalyx woodland



Type Site: Site No.: CH108

1:50,000 sheet: 6628-1 (Barossa) Hundred: Para Wirra

Annual rainfall: 725 mm Sampling date: 03/03/97

Location: Valley flat between rolling low hills, 1% slope

Surface: Hard setting, no stone

Soil Description:

Depth (cm)	Description
0-15	Dark brown hard fine sandy loam with weak granular structure. Gradual to:
15-40	Light brown (bleached) hard massive fine sandy loam with orange mottles. Clear to:
40-70	Yellowish brown and brown mottled extremely hard fine sandy medium clay with moderate coarse blocky structure. Gradual to:
70-90	Light grey and brown mottled very hard fine sandy clay loam with weak coarse prismatic structure. Abrupt to:
-----Buried soil-----	
90-120	Dark grey, olive and yellow brown mottled very hard medium heavy clay with strong coarse prismatic structure. Gradual to:
120-170	Light grey and brown friable medium clay with weak coarse blocky structure. Diffuse to:
170-230	Olive grey and brown massive light clay with water table at 230 cm.



Classification: Bleached-Mottled, Eutrophic, Brown Chromosol; thick, non-gravelly, loamy/clayey, moderate

Summary of Properties

Drainage Imperfectly drained. Water will "perch" on top of the subsoil clay for several weeks to months after prolonged rain.

Fertility Natural fertility is moderately low. Test results indicate that none of the measured nutrient elements is deficient. Organic carbon levels are satisfactory. Calcium : magnesium ratios are high - magnesium is probably deficient.

pH Slightly acidic at the surface, slightly alkaline with depth.

Rooting depth 170 cm in pit, but few roots below 120 cm.

Barriers to root growth

Physical: Waterlogging, and high clay strength. Root growth is sub optimal in the coarsely structured very hard clay subsoil.

Chemical: No chemical barriers.

Water holding capacity Approximately 80 mm in root zone.

Seedling emergence: Hard setting - susceptible to seedling emergence problems.

Workability: Fair - restricted moisture range for effective working. Highly susceptible to pugging and compaction.

Erosion Potential

Water: Low, provided run off from surrounding hills is diverted.

Wind: Moderately low - surface will pulverize if overgrazed or excessively cultivated.

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	6.6	6.0	0	0.09	-	2.5	107	183	8.6	1.0	3.9	417	56	4.4	8.3	8.5	0.6	0.09	0.25	1.1
0-15	5.9	5.1	0	0.07	-	1.6	46	160	8.1	0.6	2.6	455	37	1.8	6.8	3.6	0.6	0.09	0.30	1.3
15-40	5.5	4.5	0	0.03	-	0.3	5	98	1.7	0.3	1.7	161	51	0.6	4.5	1.7	0.9	0.11	0.11	2.4
40-70	6.3	5.3	0	0.01	-	0.2	3	172	1.7	0.4	3.3	71	31	0.7	10.1	3.6	4.3	0.21	0.33	2.1
70-90	6.9	6.0	0	0.02	-	0.10	2	132	2.1	0.6	1.7	37	12	0.6	6.0	2.1	3.1	0.17	0.20	2.8
90-120	7.7	6.6	0	0.06	-	0.23	2	246	8.1	0.6	3.5	53	69	1.3	19.7	7.7	10.4	0.91	0.53	4.6
120-170	7.8	6.7	0	0.05	-	0.10	2	188	4.5	0.3	1.9	49	116	0.7	9.8	3.7	5.3	0.45	0.44	4.6
170-230	7.8	6.7	0	0.04	-	0.06	2	164	4.2	0.6	1.1	37	11	0.6	6.2	2.2	3.3	0.35	0.20	5.6

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.