

SANDY LOAM OVER BROWN MOTTLED CLAY

General Description: *Thick sandy loam with a bleached subsurface layer, overlying a brown mottled clay, becoming sandier with depth*

Landform: Undulating rises and low hills.

Substrate: Clayey sand to sandy clay sediments of ancient glacial valleys.

Vegetation:



Type Site: Site No.: CH154

1:50,000 sheet: 6627-3 (Willunga) Hundred: Myponga
 Annual rainfall: 800 mm Sampling date: 23/10/06
 Landform: Lower slope of an undulating rise, 9% slope.
 Surface: Hard setting surface with no stones.

Soil Description:

Depth (cm)	Description
0-10	Very dark greyish brown firm massive sandy loam. Clear to:
10-40	White hard massive fine sandy loam. Clear to:
40-50	Light olive brown, dark yellowish brown and light brownish grey mottled very hard sandy clay loam with weak subangular blocky structure. Abrupt to:
50-75	Light olive brown, dark yellowish brown, brownish yellow, grey and red mottled hard medium clay with strong coarse blocky structure. Diffuse to:
75-100	Light olive brown, red, yellowish brown, and greyish brown mottled firm light clay with weak coarse subangular blocky structure. Gradual to:
100-155	Grey, yellowish brown and red firm fine sandy light clay with weak very coarse prismatic structure.



Classification: Eutrophic, Mottled-Subnatric, Brown Sodosol; thick, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage: Imperfectly drained. Water can perch on top of the clayey subsoil for several weeks following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately low to low due to low clay content. Data indicate deficiencies of potassium and copper at the sampling site.

pH: Acidic at the surface, neutral with depth.

Rooting depth: 130 cm in sampling pit, but few roots below 50 cm.

Barriers to root growth:

Physical: The high strength of all layers below 10 cm restricts uniform root growth, leading to low root densities and sub-optimal water use efficiency.

Chemical: Low nutrient availability in the subsurface is the only chemical limitation.

Water holding capacity: Approximately 100 mm in the potential root zone.

Seedling emergence: Fair to satisfactory, depending on friability of surface soil.

Workability: Satisfactory, although the subsurface layer (10-40 cm) is likely to shatter if worked too dry, and puddle if worked too wet.

Erosion Potential

Water: Moderate.

Wind: Low to moderately low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 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)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-10	5.8	4.8	0	0.06	0.38	3.25	69	95	7.8	0.3	0.67	657	33.6	6.03	6.8	5.31	1.09	0.17	0.26	2.5
10-40	7.3	6.1	0	0.03	0.24	0.44	4	45	7.1	0.2	0.42	49	20.3	1.00	1.7	1.20	0.29	0.13	0.11	7.5
40-50	7.5	6.3	0	0.05	0.16	0.22	2	99	10.5	0.4	0.31	41	34.8	0.16	4.3	2.05	1.59	0.43	0.25	10.0
50-75	7.6	6.2	0	0.11	0.52	0.17	2	114	35.8	0.7	0.80	27	10.8	0.16	11.2	3.83	5.56	1.47	0.30	13.2
75-100	7.5	6.2	0	0.10	0.73	0.10	2	73	35.9	0.5	0.54	20	1.22	0.24	8.0	2.45	4.10	1.23	0.21	15.4
100-155	7.0	5.3	0	0.12	0.74	0.18	2	61	31.7	0.4	0.42	40	1.81	0.23	10.0	2.22	6.11	1.44	0.19	14.5

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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.