

LOAMY SAND OVER BROWN DISPERSIVE CLAY

General Description: *Thick loamy sand with a bleached A2 layer over a coarsely structured dispersive clayey subsoil grading to alluvium or highly weathered basement rock*

Landform: Lower slopes and valley flats of undulating low hills.

Substrate: Medium to fine grained alluvium or highly weathered micaceous basement rock

Vegetation: Red gum woodland



Type Site: Site No.: CH123

1:50,000 sheet: 6728-4 (Angaston) Hundred: Talunga
 Annual rainfall: 600 mm Sampling date: 28/08/99
 Landform: Lower slope of undulating low hills, 4% slope
 Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-15	Dark greyish brown firm loamy sand with weak platy structure. Gradual to:
15-30	Light grey (bleached when dry) with greyish brown and dark brown mottles, firm massive loamy sand. Gradual to:
30-45	Light grey (bleached dry) with orange mottles soft light loamy sand. Abrupt to:
45-70	Light grey, yellow and red mottled firm sandy medium clay with coarse prismatic breaking to subangular blocky structure. Gradual to:
70-100	Brown, orange and red hard medium clay with strong medium subangular blocky structure. Gradual to:
100-140	Greyish brown and yellow mottled very hard heavy clay with slickensides and soft weathering rock fragments. Gradual to:
140-150	Weathering schist.



Classification: Eutrophic, Mottled-Hypernatric, Brown Sodosol; thick, non gravelly, sandy / clayey, deep

Summary of Properties

Drainage: Imperfect. Water perches on the clayey subsoil for periods of more than a week, but thick surface soil provides adequate rootzone depth.

Fertility: Natural fertility is moderate as indicated by the base status of the subsoil (ie its nutrient retention capacity). The data indicate that the soil is nutritionally well balanced.

pH: Neutral throughout.

Rooting depth: Few roots below 70 cm (indicative of pasture root depth. Vine root depth not known, but most growth likely to be in upper 45 cm).

Barriers to root growth

Physical: Firm clayey subsoil prevents uniform root distribution.

Chemical: Moderate salinity at base of topsoil. Sodicity high throughout.

Water holding capacity: Approximately 110 mm in upper 100 cm. Readily available water in vine root zone is approximately 30 mm.

Seedling emergence: Good.

Workability: Good.

Erosion Potential

Water: Moderate. Slope is gentle, but soil erodibility is high.

Wind: Moderately 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	Exch Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
Row	7.3	6.7	0	0.15	-	2.09	70	239	12	1.1	4.5	246	60	4.0	12.4	9.5	1.8	0.45	0.25	3.6	ns
0-15	7.3	6.8	0	0.38	-	0.92	75	179	27	0.7	1.8	186	36	1.9	4.9	2.7	1.0	0.62	0.11	12.7	ns
15-30	7.3	6.8	0	0.45	-	0.34	8	139	30	0.4	1.4	77	9.8	0.55	3.1	1.1	0.5	0.45	0.08	na	ns
30-45	7.2	6.9	0	0.63	-	0.17	2	117	46	0.3	0.64	45	1.2	0.41	0.9	0.64	0.38	0.16	0.06	na	ns
45-70	7.7	7.0	0	0.54	-	0.19	2	199	71	0.7	0.82	14	0.51	0.16	8.5	2.4	2.5	2.3	0.24	27.1	ns
70-100	7.5	6.7	0	0.52	-	0.13	2	202	83	0.6	0.55	12	1.1	0.09	9.2	2.4	2.9	2.3	0.28	25.0	ns
100-140	7.2	6.2	0	0.49	-	0.41	2	314	84	1.0	0.64	27	6.4	0.26	18.7	4.2	7.1	5.2	0.15	27.8	ns

Note: Row sample bulked from 20 cores (0-15 cm) taken along the planting rows.

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.