

ACIDIC SANDY LOAM OVER BROWN SANDY CLAY

General Description: *Medium to thick sandy surface soil overlying a brownish sandy clay loam to clay subsoil grading to coarse grained basement rock*

Landform: Slopes of undulating to rolling low hills

Substrate: Coarse grained metamorphic rock - schist, gneiss, metasandstone

Vegetation: Red gum - blue gum woodland



Type Site: Site No.: CH122

1:50,000 sheet: 6728-3 (Tepko) Hundred: Talunga

Annual rainfall: 650 mm Sampling date: 28/08/99

Landform: Lower slope of undulating rise, 6% slope

Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-10	Dark brown soft to firm loamy sand with weak granular structure. Clear to:
10-45	Brown and orange with dark brown blotches massive soft loamy sand. Clear to:
45-60	Yellow and orange soft loamy sand with 2-10% quartz and sandstone gravel, and a perched water table at time of sampling. Abrupt to:
60-75	Brownish yellow and orange firm sandy light clay with weak coarse subangular blocky structure and 2-10% quartz and sandstone gravel. Clear to:
75-100	Dark brown, yellow and red mottled hard sandy medium clay with strong medium subangular blocky structure and 2-10% quartz and sandstone gravel. Clear to:
100-130	Weathering schist.



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

Summary of Properties

Drainage: Moderately well. Water perches on the clayey subsoil for periods of a week or so, but depth to the top of the clay is sufficient that waterlogging should not be a major limitation..

Fertility: Natural fertility is moderately low, as indicated by the low exchangeable cation values in the subsoil. Nutrient retention capacity of the surface is also low due to sandy texture and sub-optimal organic carbon. Many of the measured nutrient elements appear to be marginally deficient, indicating the need for systematic soil and tissue sampling and testing. Until recently this soil has had a long history of low fertilizer input, but its nutrient levels are now approaching satisfactory levels.

pH: Acidic at the surface, neutral in deep subsoil. Lime is required to increase pH.

Rooting depth: 100 cm, but most activity is in the upper 60 cm.

Barriers to root growth

Physical: Waterlogging in 45-60 cm layer (perched water table).

Chemical: High aluminium (associated with acidity) in the two surface layers.

Water holding capacity: Approximately 100 mm in root zone (moderately high).

Seedling emergence: Good.

Workability: Good.

Erosion Potential

Water: Moderate. Soil is highly erodible, but slopes are gentle.

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		
Paddock	5.7	4.8	0	0.06	-	2.2	22	159	5.8	0.7	1.2	289	11	1.2	6.8	4.1	0.56	0.12	0.25	1.8	9.05
0-10	5.5	4.6	0	0.05	-	1.9	22	154	4.8	0.7	1.3	283	13	1.7	5.7	3.3	0.52	0.11	0.16	1.9	23.9
10-45	5.5	4.4	0	0.03	-	0.3	7	129	2.1	0.4	1.4	166	7.2	0.70	3.2	1.2	0.28	<0.1	0.08	na	22.4
45-60	6.2	5.2	0	0.02	-	0.2	4	130	2.5	0.3	0.94	58	4.3	0.92	2.1	1.0	0.37	<0.1	0.07	na	-
60-75	6.7	6.0	0	0.04	-	0.2	2	153	11	0.5	0.6	13	2.1	0.23	5.6	2.0	2.5	0.22	0.19	3.9	-
75-100	6.5	6.0	0	0.06	-	0.2	3	187	19	0.7	0.96	25	1.0	0.46	9.1	3.2	5.1	0.45	0.27	4.9	-

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.