

SHALLOW SANDY LOAM ON ROCK

General Description: *Medium to thick sandy loam with variable gravel, overlying weathering basement rock shallower than 50 cm*

Landform: Rolling to steep low hills and hills.

Substrate: Weathering medium to coarse grained metamorphosed basement rock (Tappanappa Formation schist at this site)

Vegetation:



Type Site:	Site No.:	CH136	1:50,000 mapsheet:	6627-1 (Echunga)
	Hundred:	Kanmantoo	Easting:	316780
	Section:	-	Northing:	6114110
	Sampling date:	16/12/04	Annual rainfall:	465 mm average

Midslope of steep low hill, 40% slope. Firm surface with 10-20% schist and quartzite stones to 200 mm, and 2-10% quartzite and metasandstone rock outcrop.

Soil Description:

Depth (cm)	Description
0-15	Dark reddish brown friable massive fine sandy loam. Gradual to:
15-35	Reddish brown friable massive fine sandy loam with 10-20% schist gravel to 60 mm. Abrupt to:
35-100	Weathering schist, with minor clay development in some cleavages.



Classification: Basic, Paralithic, Leptic Tenosol; medium, gravelly, loamy / -, shallow



Summary of Properties

Drainage: Rapidly drained. The soil rarely remains wet for more than a few hours following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. These soils have about 15% clay, the minimum required to retain adequate levels of nutrient. Only phosphorus is deficient at the sampling site.

pH: Neutral (note that elevated surface pH due to dust from nearby lime rubble road).

Rooting depth: 70 cm in exposure, but roots only in cleavage planes of rock below 35 cm.

Barriers to root growth:

Physical: The strength and depth of the underlying rock is the only limitation. Depending on the type of rock and orientation of bedding planes, significant root growth can occur below the main part of the soil profile. More root growth can be expected in a schist (as at this site) than in a massive sandstone giving rise to a similar soil.

Chemical: There are no apparent chemical limitations.

Waterholding capacity: Approximately 70 mm in the potential rootzone of annual pasture plants.

Seedling emergence: Fair to good, depending on degree of surface sealing and hard setting.

Workability: Soil itself is easily worked, but steep slopes and rocky outcrops preclude cultivation.

Erosion Potential:

Water: Very high due to the slope.

Wind: 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	Cl mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-15	7.6*	6.8*	0	0.16	0.83	2.45	10	447	18	5.2	0.6	2.81	106	68.4	2.18	16.2	11.1	3.72	0.51	0.87	3.2
15-35	6.8	6.0	0	0.25	2.26	0.78	3	352	265	8.7	0.4	1.23	59	14.0	0.34	8.0	4.64	1.62	1.11	0.65	13.8

Note: 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, in this case estimated by the sum of cations.

* Elevated surface pH due to proximity of site to a lime rubble road.

Further information: [DEWNR Soil and Land Program](#)

