

LOAMY SAND OVER POORLY STRUCTURED SANDY CLAY

General Description: *Loamy sand over a coarsely structured dispersive brown or red sandy clay, calcareous from shallow depth.*

Landform: Gently undulating plain with low (< 15 m) parallel dunes.

Substrate: Coarse to medium textured highly calcareous windblown deposits (Wiabuna Formation).

Vegetation:



Type Site:	Site No.:	EE205	1:50,000 mapsheet:	6130-1 (Rudall)
	Hundred:	Yadnarie	Easting:	629600
	Section:	19	Northing:	6266600
	Sampling date:	17/09/2001	Annual rainfall:	350 mm average

Slope of low dune. Loose surface with no stones and 2% slope.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-6	Brown soft single grain light sandy loam. Sharp to:
6-16	Yellowish brown and yellowish red firm sandy medium clay with weak very coarse columnar structure. Abrupt to:
16-30	Yellowish brown, reddish yellow and yellowish red firm massive very highly calcareous sandy light clay with 10-20% fine carbonate segregations. Clear to:
30-50	Yellowish red, yellow and reddish yellow firm massive highly calcareous clay loam. Clear to:
50-90	Strong brown firm massive very highly calcareous light sandy clay loam. Gradual to:
90-120	Reddish yellow and red firm massive very highly calcareous light sandy clay loam with 20-50% semi-hard carbonate fragments.



Classification: Calcic, Mesonatric, Brown Sodosol; thin, non-gravelly, loamy / clayey, moderate



Summary of Properties

- Drainage:** Moderately well drained. Water is likely to perch on top of the dispersive clayey subsoil for up to a week following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderate, as indicated by the exchangeable cation data. The surface soil would normally be expected to have low nutrient retention capacity, but at this site, subsoil clay at shallow depth is brought to the surface, augmenting nutrient holding capacity. All tested elements, with the possible exception of sulphur, are in adequate supply at this site, but copper and zinc deficiencies would be expected from time to time. Organic carbon levels are favourable.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 50 cm in the pit, but few roots below 30 cm.
- Barriers to root growth:**
- Physical:** The coarsely structured dispersive subsoil restricts (but does not prevent) root growth.
 - Chemical:** High pH / sodicity from 30 cm adversely affects root growth.
- Waterholding capacity:** Approximately 50 mm in the rootzone.
- Seedling emergence:** Satisfactory.
- Workability:** The sandy surface is easily worked.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Moderately low to moderate.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	Org.C %	NO ₃ mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum of cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-6	8.3	7.8	nd	0.11	1.41	9	59	464	3.2	2.7	0.21	5.4	0.91	1.66	12.7	9.33	2.02	0.19	1.13	1.5
6-16	9.1	8.5	nd	0.16	0.37	3	5	457	2.7	3.7	0.17	7.4	0.07	0.45	16.3	8.62	5.07	1.43	1.21	8.8
16-30	9.5	8.9	nd	0.52	0.31	5	3	424	11.4	6.9	0.30	7.0	0.14	0.51	18.9	7.90	5.79	4.12	1.05	21.8
30-50	9.8	9.1	nd	1.03	0.23	4	2	514	79.5	9.7	0.52	6.5	0.47	0.54	21.9	5.98	6.18	8.40	1.33	38.4
50-90	9.5	8.9	nd	1.17	0.14	2	2	426	170	7.9	0.27	3.1	0.46	0.49	23.2	6.91	5.98	9.28	1.03	40.0

Note: Sum of cations in neutral to alkaline soils is an approximation of 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 sum of cations.

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

