

THICK SAND OVER CLAY

General Description: *Thick sand over a coarsely structured brown or grey mottled clay*

Landform: Level plain.

Substrate: Medium textured Tertiary sediments.

Vegetation:



Type Site: Site No.: SE066

1:50,000 sheet: 7023-3 (Monbulla)

Hundred: Coles

Annual rainfall: 650 mm

Sampling date: 26/08/97

Landform: Flat plain, 0% slope

Surface: Soft with no stones

Soil Description:

Depth (cm)	Description
0-11	Black soft loamy sand with weak polyhedral structure. Clear to:
11-21	Dark grey loose sand with weak polyhedral structure. Clear to:
21-34	Light brownish grey loose single grain sand. Clear to:
34-46	Yellowish brown loose single grain sand. Abrupt to:
46-53	Brown loose single grain sand. Abrupt to:
53-59	Greyish brown, brown and brownish yellow friable fine sandy light clay with coarse columnar structure. Discontinuous cemented hardpan in top one cm. Clear to:
59-97	Light grey, brownish yellow and very pale brown friable massive fine sandy medium clay. Diffuse to:
97-122	Light grey and yellowish brown friable massive clayey sand. Diffuse to:
122-150	Light grey and yellow friable massive sandy clay loam.



Classification: Eutrophic, Mottled-Subnatric, Grey Sodosol; thick, non-gravelly, sandy / clayey, moderate

Summary of Properties

- Drainage:** Imperfectly drained. Water perches on the dispersive clayey subsoil, saturating part of the profile for several weeks following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data. Most surface nutrient retention capacity is attributable to organic matter, levels of which are high. Data indicate deficiencies of phosphorus, copper, calcium, magnesium and potassium.
- pH:** Strongly acidic at the surface, alkaline with depth.
- Rooting depth:** 97 cm in pit, but few roots below 53 cm.
- Barriers to root growth:**
- Physical:** The coarsely structured dispersive clay restricts root density.
 - Chemical:** Low pH and low nutrient status / retention capacity in the topsoil limit root growth.
- Water holding capacity:** Approximately 50 mm in the root zone.
- Seedling emergence:** Satisfactory, except where water repellent.
- Workability:** Firm surface is easily worked.
- Erosion Potential**
- Water:** Low.
 - 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	Ext Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
Paddock	5.1	4.3	0	0.07	-	2.95	8	25	8.7	1.2	0.39	117	2.04	1.75	-	5.40	0.32	0.10	0.12	na	ns
0-11	5.4	4.4	0	0.06	-	2.11	11	30	7.6	1.1	0.42	61	0.95	1.45	-	4.22	0.15	0.11	0.14	na	2.0
11-21	5.4	4.3	0	0.01	-	0.39	3	<10	3.6	0.6	0.26	33	0.26	0.65	-	1.26	<0.01	0.05	0.08	na	1.5
21-34	5.7	5.2	0	0.01	-	0.18	2	46	2.7	0.5	0.13	18	0.22	0.53	-	1.01	<0.01	0.05	0.07	na	1.2
34-46	6.0	5.0	0	0.02	-	0.12	10	16	3.0	0.4	0.16	16	0.19	0.54	-	1.25	<0.01	0.05	0.07	na	1.1
46-53	6.2	5.2	0	0.02	-	0.22	52	15	4.1	0.5	0.11	27	0.26	0.54	-	1.32	<0.01	0.10	0.09	na	1.4
53-59	8.4	7.2	0.2	0.12	-	0.25	3	72	5.1	0.8	0.10	84	1.40	0.53	9	3.89	3.42	0.57	0.22	6.3	0.9
59-97	8.4	7.4	-	0.06	-	0.18	<1	151	6.6	1.8	0.09	22	0.49	0.51	15*	6.10	7.28	1.11	0.43	7.4	1.0
97-122	8.3	7.0	-	0.05	-	0.07	1	87	5.6	1.4	0.15	9	0.41	0.54	9*	3.41	4.23	0.77	0.26	8.6	0.9
122-150	8.2	6.9	-	0.05	-	<0.05	2	90	5.8	1.1	0.05	6	0.26	0.56	8*	3.07	3.76	0.88	0.28	11	1.0

Note: Paddock sample bulked from 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.

* CEC not measured. Value is sum of exchangeable cations which approximates CEC in neutral to alkaline soils.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.