

SANDY LOAM OVER DISPERSIVE RED CLAY (Midgee / Cleve soil)

General Description: *Hard sandy loam over dispersive red clay, calcareous with depth*

- Landform:** Very gently undulating plains.
- Substrate:** Clayey alluvium with gritty lenses (granite derived).
- Vegetation:**



Type Site: Site No.: EE070

1:50,000 sheet: 6331-3 (Charleston)	Hundred: Charleston
Annual rainfall: 270 mm	Sampling date: 22/01/93
Landform: Gently undulating rise on plain, 3% slope	
Surface: Hard with no stones	

Soil Description:

Depth (cm)	Description
0-20	Dark reddish brown soft coarse sandy loam with weak fine subangular blocky structure. Gradual to:
20-30	Reddish brown soft coarse sand. Clear to:
30-53	Dark red firm sandy clay with weak fine subangular blocky structure. Gradual to:
53-100	Red friable highly calcareous medium clay with strong fine subangular blocky structure and 10-20% quartzite gravel. Gradual to:
100-180	Red hard massive coarse sandy light clay with minor granite fragments.



Classification: Calcic, Mesonatric, Red Sodosol; thick, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage Well drained. Although water perches on the subsoil clay, the soil rarely remains wet for more than a couple of days following heavy or prolonged rainfall.

Fertility Inherent fertility is moderately low as indicated by the exchangeable cation data and low organic carbon levels. Regular phosphorus applications are essential. Nitrogen levels depend on legume status of pastures and cropping history. Trace element deficiencies may occur, but this soil is not particularly susceptible.

pH Neutral at the surface, strongly alkaline with depth.

Rooting depth 80 cm in pit.

Barriers to root growth

Physical: The hard sodic clayey subsoil reduces root density by confining root growth to aggregate surfaces.

Chemical: High pH and sodicity from 53 cm restrict deeper root growth.

Water holding capacity Approximately 85 mm in root zone.

Seedling emergence: Good to fair, depending on degree to which surface soil seals over.

Workability: Fair. Poorly structured surface soil has a limited moisture range within which it can be safely worked.

Erosion Potential

Water: Moderately 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 mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-20	7.0	7.1	<1	0.05	0.44	0.7	20	370	-	0.9	0.58	8.7	12	0.49	7.5	5.51	1.54	0.21	1.13	2.8
20-30	7.7	7.2	<1	0.05	0.48	0.2	3	190	-	1.0	0.61	19	13	0.15	5.4	3.25	2.25	0.34	0.51	6.3
30-53	9.0	8.3	<1	0.17	0.69	0.2	3	280	-	1.5	0.75	13	6.0	0.13	10.0	3.97	4.44	1.76	0.70	17.6
53-100	9.8	8.4	11	0.43	2.10	-	-	-	-	6.0	0.77	13	3.7	0.30	10.6	3.00	4.49	4.96	0.85	46.8
100-180	9.6	8.5	5	0.60	4.81	-	-	-	-	17.0	0.46	22	6.2	0.12	10.0	2.08	4.22	4.77	0.87	47.7

Note: 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