

WET CALCAREOUS CLAY

General Description: *Calcareous black to grey clay loam to clay, with variable carbonate nodules at depth, and a water table at about 100 cm*

Landform: Level plain.

Substrate: Calcreted clay.

Vegetation:



Type Site: Site No.: SE068

1:50,000 sheet:	7023-3 (Monbulla)	Hundred:	Coles
Annual rainfall:	650 mm	Sampling date:	29/08/97
Landform:	Mound of mound - depression microrelief on level plain		
Surface:	Firm with no stones. Water table at 140 cm.		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-16	Black friable calcareous light medium clay with moderate coarse polyhedral structure. Gradual to:
16-39	Dark grey friable calcareous light medium clay with coarse moderate polyhedral structure and minor carbonate concretions (6-20 mm). Clear to:
39-75	Dark grey and grey calcareous friable light medium clay with moderate polyhedral structure and 2-10% carbonate concretions (6-20 mm). Gradual to:
75-113	Dark grey wet friable calcareous light medium clay with weak polyhedral structure and 20-50% carbonate nodules (6-60 mm). Clear to:
113-140	Strongly cemented nodular calcrete pan with water table at 140 cm.



Classification: Natric, Calcarosolic, Oxyaquic Hydrosol; medium, non-gravelly, clayey / clayey, deep

Summary of Properties

Drainage: Poorly drained. The water table at 120 cm keeps the soil saturated for several months per year.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. High carbonate levels to the surface reduce availability of some trace elements and phosphorus. Copper appears to be deficient at the sampling site.

pH: Alkaline to strongly alkaline throughout.

Rooting depth: 140 cm in pit, but few roots below 75 cm.

Barriers to root growth:

Physical: The calcrete prevents deeper root growth, but where shallower, the water table determines depth.

Chemical: High pH and sodicity restrict root growth.

Water holding capacity: Approximately 150 mm in the root zone.

Seedling emergence: Satisfactory, unless saturation is to the surface.

Workability: The firm surface is easily worked, unless waterlogged.,

Erosion Potential

Water: Low.

Wind: 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 (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.0	7.6		0.50	-	5.68	114	453	27.6	4.8	0.39	5	7.05	1.84	-	25.2	6.23	0.80	1.17	-
0-16	8.7	7.8	24	0.29	-	2.96	19	217	13.5	5.0	0.28	2	4.56	0.81	18	12.13	6.13	1.26	0.52	7.0
16-39	10.0	8.0	44	0.32	-	1.27	4	172	10.0	3.5	0.26	5	2.17	1.10	10	4.21	4.09	3.61	0.36	36.1
39-75	9.5	8.0	43	0.44	-	0.79	1	173	58.3	1.2	0.19	5	2.27	1.08	9	4.57	3.52	2.12	0.34	23.6
75-113	9.2	8.1	40	0.44	-	0.57	60	179	39.4	0.7	0.17	7	2.31	1.07	9	5.70	3.15	1.25	0.31	13.9
113-140	9.1	8.0	43	0.32	-	0.14	2	122	32.9	0.7	0.16	12	4.03	1.05	5	3.68	1.71	0.70	0.22	14.0

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.

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