

CALCAREOUS CLAY LOAM ON CLAY

General Description: *Calcareous clay loam becoming more clayey and calcareous at depth with variable nodular carbonate*

Landform: Gilgai plain

Substrate: Calcareous loess overlying cracking clay.

Vegetation: -



Type Site: Site No.: CY043

1:50 000 sheet:	6429-3 (Maitland)	Hundred:	Maitland
Annual rainfall:	500 mm	Sampling date:	06/02/02
Landform:	Mound on gilgai plain		
Surface:	Firm, with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0 – 2	Dark brown hard and somewhat powdery calcareous clay loam with a few hard carbonate fragments.
2 – 10	Dark brown hard calcareous clay loam with platy structure and a few hard carbonate fragments.
10 – 20	Abundant hard carbonate fragments with some dark brown clay loam in inter-fragment spaces.
20 – 35	Abundant hard carbonate fragments.
35 – 55	Very pale brown very highly calcareous massive sandy loam with many hard carbonate fragments.
55 – 75	Very pale brown very highly calcareous massive sandy clay loam with many hard carbonate fragments and abundant fine carbonate.
75 – 100	White very highly calcareous massive silty clay loam with abundant fine carbonate and a few hard carbonate fragments.
100 – 130	White very highly calcareous massive light clay with abundant fine carbonate.
130 – 150	Light grey very highly calcareous light clay with abundant fine carbonate.



Classification: Endohypersodic, Regolithic, Lithocalcic Calcarosol; medium, slightly gravelly, clay loamy / clay loamy, moderate

Summary of Properties

- Drainage:** Moderately well to imperfectly drained.
- Fertility:** High.
- pH:** Alkaline at the surface, strongly alkaline at depth.
- Rooting depth:** Most roots above 50 cm; a few to 75 cm.
- Barriers to root growth:**
- Physical:** Barrier of hard carbonate fragments from 10-35 cm.
 - Chemical:** Moderately high salinity levels in subsoil.
- Water holding capacity:** Moderate. Hard carbonate fragments limit available moisture.
- Seedling emergence:** Good. Organic carbon levels need to be maintained to preserve surface soil structure.
- Workability:** Good.
- Erosion potential**
- Water:** Low.
 - Wind:** Low to 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 (DTPA)				Sum of cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP (%)
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.4	7.8	6.4	0.50	4.01	1.54	65	599	39.0	2.9	0.43	13.2	7.51	1.18	27.19	21.75	2.31	1.65	1.48	6
0-2	8.2	7.7	3.5	0.35	2.08	1.93	79	849	16.2	2.6	0.43	14.0	15.5	1.77	25.07	20.50	1.91	0.54	2.12	2
2-10	8.3	7.8	7.5	0.23	1.76	1.53	43	451	29.0	2.0	0.45	11.1	4.76	0.86	25.17	21.46	1.90	0.67	1.14	3
10-20	<i>Abundant hard carbonate fragments</i>																			
20-35																				
35-55	9.0	8.0	73.6	0.66	6.12	0.41	3	90	101	2.8	0.32	4.4	0.74	0.29	19.78	12.88	2.52	4.18	0.20	21
55-75	9.3	8.2	78.7	0.75	7.79	0.28	5	113	79.5	2.6	0.29	3.0	0.72	0.21	18.69	10.88	2.75	4.77	0.29	26
75-100	9.4	8.2	54.0	1.22	9.47	0.25	3	159	91.3	2.4	0.38	2.2	0.65	0.15	21.69	10.33	4.16	6.82	0.38	31
100-130	9.3	8.2	48.8	1.18	7.98	0.21	3	245	104	2.7	0.60	5.2	1.12	0.49	26.93	10.83	6.59	8.87	0.64	33
130-150	9.4	8.3	53.6	1.48	7.82	0.20	3	306	105	4.3	0.36	10.1	1.08	0.26	30.22	9.89	8.61	10.96	0.76	36

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the sum of cations (an estimate of cation exchange capacity).