

## DARK CRACKING CLAY

**General Description:** *Dark brown well structured calcareous clay becoming coarser structured and more calcareous with depth. Cracks seasonally.*

**Landform:** Gentle slopes and flats

**Substrate:** Heavy clay, usually calcified, probably laid down on the bed of an ancient lake

**Vegetation:** Grassland



**Type Site:** Site No.: CU017

1:50,000 sheet:	6531-1 (Laura)	Hundred:	Booyoolie
Annual rainfall:	500 mm	Sampling date:	31/08/92
Landform:	Midslope of a long gentle slope of 3%		
Surface:	Weakly self mulching, seasonally cracking with no stones		

**Soil Description:**

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark reddish brown strongly granular moderately calcareous light medium clay. Clear to:
10-30	Dark reddish brown moderately calcareous medium heavy clay with strong polyhedral structure. Gradual to:
30-55	Black slightly calcareous light medium clay with strong polyhedral structure. Gradual to:
55-90	Dark brown heavy clay with strong lenticular structure and slickensides (smooth clay faces). Diffuse to:
90-135	Black slightly calcareous medium heavy clay with moderate blocky structure. Clear to:
135-150	Yellowish red highly calcareous heavy clay with 10% soft carbonate segregations and strong blocky structure. (Pleistocene age Hindmarsh Clay equivalent).



**Classification:** Epicalcareous, Self-mulching, Black Vertosol; non-gravelly, fine / very fine, deep

## Summary of Properties

<b>Drainage</b>	Imperfect, due to high clay content of soil. Soil may remain wet for several weeks.
<b>Fertility</b>	High natural fertility, as indicated by the high CEC values. There are no measured surface soil deficiencies, but zinc deficiency is common. Organic carbon is very high, indicating a good store of nitrogen.
<b>pH</b>	Moderately alkaline throughout. Strongly alkaline in red clay below soil.
<b>Rooting depth</b>	135 cm at type site, with good distribution in all layers.
<b>Barriers to root growth</b>	
<b>Physical:</b>	There are no physical barriers.
<b>Chemical:</b>	High boron and sodicity (as in red clay layer) affect root growth, but unless they are shallower than 100 cm, no problem is likely.
<b>Water holding capacity</b>	200 mm in root zone (very high), and most is available to plant roots.
<b>Seedling emergence</b>	Good.
<b>Workability</b>	Fair to good, depending on the wetness of the surface. Clay soils are sticky when wet.
<b>Erosion Potential</b>	
<b>Water:</b>	Moderately low, due to well structured surface soil and low angle slope.
<b>Wind:</b>	Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -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	7.9	7.8	2.3	0.17	0.68	2.2	25	763	-	2.3	1.2	16	7.5	0.8	37.3	31.1	3.1	0.44	2.31	1.2
0-10	8.0	7.8	3.2	0.16	0.63	2.0	14	765	-	2.3	1.3	14	9.4	0.8	34.9	31.3	3.1	0.36	2.18	1.0
10-30	8.1	7.9	4.5	0.13	0.38	1.2	<5	444	-	1.9	1.5	15	5.2	0.3	34.1	31.1	3.4	0.39	1.22	1.1
30-55	8.1	7.8	0.1	0.11	0.33	1.3	5	1220	-	1.6	1.9	15	9.5	0.2	29.4	24.3	3.5	0.40	0.70	1.4
55-90	8.2	7.7	<0.1	0.10	0.44	0.9	<5	316	-	1.9	1.6	17	6.5	0.2	28.6	22.8	6.5	1.41	0.89	4.9
90-135	8.7	8.0	2.2	0.22	0.47	0.8	<5	310	-	4.3	2.6	12	4.9	0.2	34.3	20.7	9.1	3.44	1.07	10.0
135-150	8.6	8.2	11.6	0.72	2.43	0.3	<5	349	-	20.3	1.1	13	2.2	0.1	30.1	17.8	7.5	6.48	1.04	21.5

**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.