

DARK GREY CRACKING CLAY

General Description: *Dark grey to black self-mulching and cracking clay*

Landform: Elevated very gently undulating plains and low lying alluvial flats. Crabholes (gilgai) are common.

Substrate: Pleistocene clays (Blanchetown Clay equivalent)

Vegetation: Open woodland of bullock and box



Type Site: Site No.: SE003
 1:50,000 sheet: 7025-2 (Tatiara) Hundred: Tatiara
 Annual rainfall: 500 mm Sampling date: 23/01/91
 Landform: Alluvial flat, 0% slope
 Surface: Self-mulching and seasonally cracking with no stones

Soil Description:

Depth (cm)	Description
0-2	Very dark grey strongly granular medium clay (self-mulching). Abrupt to:
2-20	Dark grey moderately subangular blocky medium clay. Gradual to:
20-40	Grey moderately subangular blocky medium heavy clay. Gradual to:
40-60	Dark grey moderately angular blocky moderately calcareous heavy clay. Gradual to:
60-100	Brownish grey strongly angular blocky, moderately calcareous heavy clay. Gradual to:
100-150	Light grey strongly angular blocky highly calcareous medium clay (Class I carbonate layer).



Classification: Epicalcareous-Endohypersodic, Self-mulching, Grey Vertisol; non-gravelly, medium fine / very fine, deep

Summary of Properties

Drainage Imperfectly drained. Soil may remain wet for some weeks, due to its high clay content and low lying position.

Fertility Natural fertility is very high, as indicated by the CEC values throughout the soil. The only likely deficiency (apart from phosphorus - highly deficient at time of sampling - and nitrogen) is zinc, which is low at the type site and is commonly deficient on clay soils.

pH Slightly alkaline at surface, strongly alkaline with depth.

Rooting depth 100 cm in pit.

Barriers to root growth

Physical: No physical limitations apart from possible damage to roots from cracking. Waterlogging will retard root growth in wet years.

Chemical: Class I carbonate layer and excessive boron from 100 cm limit root growth.

Water holding capacity 150 to 200 mm in root zone (very high).

Seedling emergence Good, provided that self-mulching surface is maintained.

Workability Fair. Soil becomes sticky and boggy when wet.

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	Cl mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
0-20	7.9	7.8	<0.1	0.19	-	1.7	9	550	-	3.1	0.5	14.9	3.1	0.3	36.0	25.3	8.1	0.5	2.0	1	78
20-40	8.2	7.9	3.3	0.21	-	0.8	4	420	-	4.6	0.6	13.3	3.8	<0.1	36.9	22.4	11.5	1.5	1.7	4	83
40-60	8.9	8.3	10.1	0.32	-	0.3	<2	440	-	10.4	0.7	9.1	1.6	<0.1	38.2	16.9	15.1	4.4	1.8	12	74
60-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100-150	9.1	8.4	21.1	0.39	-	0.2	3	450	-	23.7	0.6	8.8	1.2	<0.1	39.2	12.4	16.7	7.3	1.9	19	87

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.