

BLACK CRACKING CLAY

General Description: *Strongly structured seasonally cracking black clay, becoming more clayey and coarser structured with depth, generally moderately calcareous throughout.*

Landform: Undulating rises and low hills.

Substrate: Coarsely structured red heavy clay, mantled by fine carbonate.

Vegetation:



Type Site:	Site No.:	CL908	1:50,000 mapsheet:	6629-4 (Halbury)
	Hundred:	Alma	Easting:	286900
	Section:	446	Northing:	6211650
	Sampling date:	07/03/91	Annual rainfall:	525 mm average

Lower slope of undulating low hills, 5% slope. Self-mulching seasonally cracking surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Very dark greyish brown firm moderately calcareous light clay with strong medium granular structure. Gradual to:
10-65	Very dark greyish brown hard moderately calcareous heavy clay with strong coarse prismatic (breaking to coarse angular blocky) structure. Gradual to:
65-127	Brown very hard very highly calcareous heavy clay with strong coarse lenticular structure and 2-10% fine carbonate segregations. Diffuse to:
127-170	Strong brown very hard highly calcareous medium clay with strong coarse subangular blocky structure and 2-10% fine carbonate segregations.



Classification: Epicalcareous-Endohypersodic?, Self-mulching, Black Vertosol



Summary of Properties

- Drainage:** Imperfectly drained. Soil may remain wet for several weeks following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is very high – a function of high clay and organic matter content, and high calcium saturation. Nutrient retention capacity is very high, but high productivity leads to nutrient depletion, especially phosphorus and zinc.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 92 cm in pit, but few roots below 65 cm.
- Barriers to root growth:**
- Physical:** Hard coarse aggregates in the subsoil reduce root length and density, but do not prevent growth.
 - Chemical:** High pH and probably high sodicity from 65 cm restrict deeper root growth.
- Waterholding capacity:** Approximately 110 mm in the rootzone.
- Seedling emergence:** Satisfactory to fair. Emerging seedlings can be damaged if surface dries and cracks following germination.
- Workability:** The clayey surface becomes sticky and intractable when wet.
- Erosion Potential:**
- Water:** Moderately low (sheet / rill erosion), but highly susceptible to gully erosion in watercourses.
 - 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 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	
0-10	8.3	7.7	6	0.16	-	1.33	40	580	-	-	0.8	15	13.0	1.5	-	-	-	-	-	-
10-65	8.5	7.7	4	0.13	-	0.55	3	180	-	3	0.6	12	1.3	0.1	-	-	-	-	-	-
65-127	9.3	8.1	11	0.30	-	0.38	1	150	-	8	0.7	8.8	1.6	0.1	-	-	-	-	-	-
127-170	9.3	8.4	11	0.61	-	0.10	1	180	-	-	0.6	5.7	0.7	0.0	-	-	-	-	-	-

Further information: [DEWNR Soil and Land Program](#)

