

HIGHLY CALCAREOUS CLAY LOAM

General Description: *Highly calcareous grey clay loam, becoming more calcareous, rubbly and slightly more clayey with depth*

Landform: Gently undulating plain.

Substrate: Tertiary Hindmarsh Clay mantled by very highly calcareous Woorinen Formation deposits.

Vegetation:



Type Site: Site No.: CY039

1:50,000 sheet: 6430-2 (Alford)

Hundred: Kadina

Annual rainfall: 390 mm

Sampling date: 24/04/96

Landform: Flat, 0% slope

Surface: Firm with 10-20% calcrete stones (20-200 mm)

Soil Description:

Depth (cm) *Description*

0-10 Dark brown firm cloddy highly calcareous clay loam. Clear to:

10-26 Brown firm massive very highly calcareous clay loam. Clear to:

26-89 Strong brown soft massive very highly calcareous clay loam with 20-50% carbonate nodules (6-20 mm). Gradual to:

89-155 Reddish yellow friable massive highly calcareous light medium clay.



Classification: Hypervescent, Regolithic, Supracalcic Calcarosol; medium, gravelly, clay loamy / clay loamy, moderate

Summary of Properties

Drainage	Well drained. The soil rarely remains wet for more than a day or so following heavy or prolonged rainfall.
Fertility	Inherent fertility is moderate, as indicated by the exchangeable cation data. Relatively high clay and organic matter levels provide favourable nutrient retention capacity, although high carbonate levels to the surface reduce availability of trace elements and phosphorus. Regular phosphorus applications are needed - concentrations at the sampling site are high.
pH	Alkaline at the surface, strongly alkaline in the substrate.
Rooting depth	Approximately 90cm in pit.
Barriers to root growth	
Physical	There are no physical barriers.
Chemical	High pH, sodicity and boron concentrations from 89 cm restrict deeper root growth.
Water holding capacity	Approximately 80 mm (moderate) in rootzone.
Seedling emergence	Good. Organic matter levels need to be maintained to preserve surface structure.
Workability	Good.
Erosion Potential	
Water	Low.
Wind	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)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.2	7.7	17.2	0.20	1.18	1.5	38	921	25	2.3	6.50	6	12.8	1.18	20.2	16.91	2.21	0.26	2.52	1.3
0-10	8.3	7.7	13.5	0.17	0.94	1.9	38	736	23	2.6	-	-	-	-	20.4	16.73	2.04	0.30	2.45	1.5
10-26	8.5	7.8	24.8	0.13	0.49	0.8	4	403	20	2.5	-	-	-	-	18.5	15.89	2.56	0.35	1.58	1.9
26-89	8.7	7.9	36.3	0.33	2.26	0.4	<4	142	36	3.5	-	-	-	-	16.2	9.54	4.96	1.50	0.56	9.3
89-155	9.5	8.4	55.8	0.86	6.53	0.2	<4	235	120	22.6	-	-	-	-	8.1	1.72	3.73	3.31	0.66	41.1

Note: Paddock sample bulked from 20 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