CALCAREOUS CLAY LOAM

General Description: Calcareous clay loam becoming more clayey and calcareous with depth, grading to heavy clay within 100 cm

Landform: Undulating rises.

Substrate: Coarsely structured heavy

clay (Hindmarsh Clay

equivalent).

Vegetation: Mallee.



Type Site: Site No.: CM091 1:50,000 mapsheet: 6530-2 (Blyth)

Hundred:HartEasting:260800Section:488Northing:6261550

Sampling date: 04/08/2000 Annual rainfall: 425 mm average

Lower slope of undulating rise, 3% slope. Firm surface with minor calcrete and quartz

fragments (6-20 mm).

Soil Description:

Depth (cm) Description

0-14 Dark brown friable highly calcareous moderately

granular clay loam. Clear to:

14-26 Brown friable highly calcareous weakly

polyhedral light clay with minor carbonate

nodules. Gradual to:

26-45 Yellowish red friable very highly calcareous

medium clay with moderate polyhedral structure

and 2-10% carbonate nodules (2-6 mm).

Gradual to:

45-70 Yellowish red friable massive very highly

calcareous light clay with 2-10% carbonate

nodules (2-6 mm). Diffuse to:

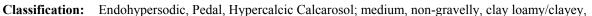
70-100 Red firm highly calcareous medium clay with

moderate angular blocky structure. Diffuse to:

Dark red firm moderately calcareous medium

heavy clay with 2-10% soft carbonate and

manganese segregations.



deep







Summary of Properties

Drainage: Moderately well to imperfectly drained. The soil may remain wet for a week or so

following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. Nutrient

retention capacity is high and concentrations of all measured nutrient elements are

satisfactory. However, free carbonate to the surface reduces availability of

phosphorus, zinc and manganese. Organic carbon levels are high.

pH: Alkaline at the surface, strongly alkaline at depth.

Rooting depth: 100 cm in pit, but few roots below 70 cm.

Barriers to root growth:

Physical: The Hindmarsh Clay at 100 cm is the only significant barrier, but at that depth is

unlikely to affect annual plants.

Chemical: High pH, sodicity and boron concentrations, and moderate salinity from 45 cm

restrict root growth.

Waterholding capacity: Approximately 90 mm in the rootzone.

Seedling emergence: Satisfactory.

Workability: Firm calcareous surface soil is easily worked.

Erosion Potential:

Water: Moderately low.

Wind: Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaC1 ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	K		Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum cations cmol	Exchangeable Cations cmol(+)/kg				ESP
							mg/Kg	mg/ng			Cu	Fe	Mn	Zn	(+)/kg	Ca	Mg	Na	K	
Paddock	8.3	7.8	-	0.22	1.4	2.05	46	571	4.2	2.3	0.75	6.1	5.1	0.88	28	22.73	3.29	0.50	1.45	1.8
0-14	8.2	7.7	-	0.16	1.0	1.77	37	438	4.1	2.1	0.73	6.6	3.4	0.84	29	24.2	3.44	0.36	1.14	1.2
14-26	8.5	7.9	-	0.14	0.9	0.96	7	152	4.6	1.5	0.81	8.4	1.5	0.40	27	21.3	4.54	0.59	0.41	2.2
26-45	9.3	8.0	-	0.28	1.8	0.61	5	109	6.3	4.0	0.82	7.7	1.0	0.35	24	15.1	6.44	2.53	0.29	10.4
45-70	9.5	8.3	-	1.09	7.1	0.35	4	161	108	15.5	0.72	5.4	0.78	0.27	24	8.60	7.76	6.75	0.42	28.7
70-100	9.6	8.5	-	1.23	8.0	0.21	3	231	128	19.3	0.41	4.2	0.64	0.21	23	6.40	7.59	8.37	0.57	36.5
100-170	9.5	8.7	-	1.46	13.8	0.11	3	373	181	22.5	0.74	5.0	0.46	0.4	32	5.89	11.0	13.8	0.97	43.6

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

Sum of cations is an approximation of cation exchange capacity, 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 sum of cations.

Further information: DEWNR Soil and Land Program



