## **DEEP GRADATIONAL CLAY LOAM**

General Description: Firm loam to clay loam grading to a red brown well structured

clay loam to clay with a prominent layer of soft carbonate at moderate depth overlying a coarsely structured orange clay

**Landform:** Flats and gently sloping

outwash fans

Substrate: Alluvial clay, mantled by

soft (Class I) carbonate

Vegetation:

**Type Site:** Site No.: CM067

1:50,000 sheet: 6629-4 (Halbury) Hundred: Hall
Annual rainfall: 455 mm Sampling date: 23/08/95
Landform: Lower slope of very gently inclined fan, 2% slope

Surface: Firm with no stones

## **Soil Description:**

Depth (cm) Description

0-11 Dark reddish brown clay loam with strong

granular structure. Clear to:

11-23 Dark reddish brown light medium clay with

strong polyhedral structure. Clear to:

23-40 Dark reddish brown medium clay with strong

prismatic structure. Clear to:

40-60 Red medium clay with strong coarse prismatic

structure. Clear to:

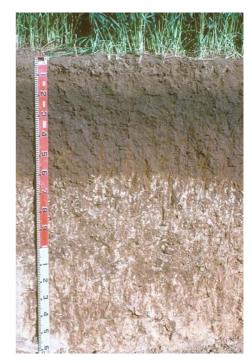
60-100 Yellowish red very highly calcareous medium

clay with moderate blocky structure and more than 50% soft carbonate segregations. Diffuse to:

100-160 Yellowish red very highly calcareous medium

clay with moderate blocky structure and 20-50%

soft carbonate segregations.



**Classification:** Sodic, Hypercalcic, Red Dermosol; medium, non-gravelly, clay loamy/clayey, very deep.

## Summary of Properties

**Drainage** Well drained. The soil is never likely to remain wet for more than a few hours.

**Fertility** Natural fertility is very high (very high CEC and high calcium saturation). Organic

carbon levels satisfactory. Need to monitor trace elements.

**pH** Alkaline at the surface, strongly alkaline at depth (surface carbonate and high pH may

be due to road dust).

**Rooting depth** 100 cm.

Barriers to root growth

**Physical:** No physical barriers.

**Chemical:** High pH (more than 9.2) prevents root growth below 100 cm.

Water holding capacity Approximately 150 mm in rootzone (very high).

**Seedling emergence** Good.

**Workability** Good, but may get sticky when wet.

**Erosion Potential** 

Water: Low

Wind: Low

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaC1 <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m % P K mg/kg mg/kg mg/kg mg/kg mg/kg Trace Elements					ng/kg	CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP				
							mg/kg	mg/kg			Cu	Fe	Mn	Zn	(+)/Kg	Ca	Mg	Na	K	
Paddock	8.2	7.7	0.6	0.15	0.61	1.6	88	940	7	2.4	1.30	1	15.6	1.40	25.2	20.94	3.10	0.27	3.01	1.1
0-11	8.1	7.8	0.9	0.13	0.45	1.5	21	958	6	1.5	-	-	-	-	27.2	21.59	3.28	0.25	2.87	0.9
11-23	8.3	7.8	0.3	0.12	0.31	1.0	8	635	3	1.2	-	-	-	-	31.6	25.24	4.22	0.39	2.25	1.2
23-40	8.4	7.8	0.3	0.13	0.25	0.7	7	308	3	0.6	-	-	-	-	37.2	27.59	7.65	1.01	1.46	2.7
40-60	8.5	7.8	0.2	0.17	0.38	0.6	7	354	2	0.7	-	-	-	-	39.2	25.95	10.67	2.26	1.71	5.8
60-100	9.1	8.0	22.9	0.28	0.74	0.3	6	413	10	1.0	-	-	-	-	25.0	13.53	8.97	3.24	1.56	13.0
100-160	9.5	8.1	45.4	0.47	1.52	0.1	6	446	48	4.0	-	-	-	-	18.6	6.26	9.26	4.45	1.29	23.9

**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.