

CALCAREOUS CLAY LOAM

General Description: *Dark calcareous clay loam becoming more clayey and calcareous at depth, with abundant soft and nodular carbonate in the lower profile*

Landform: Alluvial flats

Substrate: Brown mottled clay mantled by carbonate often hardened by the action of fluctuating water tables

Vegetation:



Type Site: Site No.: CU065

1:50,000 sheet: 6630-4 (Spalding) Hundred: Andrews
 Annual rainfall: 450 mm Sampling date: 13/05/96
 Landform: Alluvial flat between gently undulating rises
 Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-10	Dark brown highly calcareous clay loam with strong granular structure. Clear to:
10-23	Brown highly calcareous light clay with strong polyhedral structure. Clear to:
23-43	Brown (pale brown when dry) highly calcareous medium clay with moderate subangular blocky structure. Gradual to:
43-65	Greyish brown highly calcareous medium clay with blocky structure and 20-50% nodular carbonate. Gradual to:
65-115	Greyish brown highly calcareous medium clay with blocky structure and 20-50% nodular and soft carbonate. Gradual to:
115-135	Brown, yellow and orange mottled moderately calcareous medium clay with blocky structure and 2-10% nodular carbonate.



Classification: Melanic, Pedal, Supracalcic Calcarosol; thick, non-gravelly, clay loamy / clayey, deep

Summary of Properties

Drainage Moderately well drained. Water moves slowly through the profile due to the high clay content, and proximity to the watercourse. Parts of the soil may remain wet for up to a week in winter.

Fertility The natural fertility is high (as indicated by the cation data), due to the high clay content. All major elements are in adequate supply, but zinc appears to be deficient. Organic carbon levels are satisfactory.

pH Alkaline throughout.

Rooting depth Good root growth to 115 cm in pit (with some to 135 cm).

Barriers to root growth

Physical: None.

Chemical: Salt, boron and sodicity levels are relatively low. High pH with depth may affect root growth to some degree.

Water holding capacity More than 150 mm in the root zone (very high).

Seedling emergence: Good, due to the stable surface structure.

Workability: Good.

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 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	8.5	7.8	6	0.17	0.86	1.83	42	969	8.5	2.4	1.38	14	12.3	0.82	22.6	16.9	7.18	0.31	3.49	1.4
0-10	8.4	7.8	6	0.20	1.07	2.13	27	1001	9.4	2.6	-	-	-	-	23.7	16.7	7.54	0.25	3.57	1.1
10-23	8.7	7.9	7	0.14	0.56	1.45	9	830	5.0	2.6	-	-	-	-	21.5	13.0	7.27	0.40	2.36	1.9
23-43	8.9	8.0	24	0.17	0.54	0.68	16	674	6.7	2.5	-	-	-	-	18.9	8.77	10.5	0.54	2.25	2.9
43-65	8.9	8.1	20	0.16	0.51	0.51	6	669	6.7	2.0	-	-	-	-	18.5	6.20	12.7	0.62	2.04	3.4
65-115	9.0	8.2	18	0.17	0.60	0.32	4	622	7.1	2.9	-	-	-	-	17.3	5.85	11.5	0.96	1.81	5.5
115-135	9.0	8.1	7	0.20	0.62	0.19	1	641	7.9	3.0	-	-	-	-	20.9	6.66	12.2	1.49	1.90	7.1

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.