

CALCAREOUS CLAY LOAM

General Description: *Calcareous clay loam becoming more calcareous and with limited rubbly calcrete with depth, over clay*

Landform: Flats and very gentle slopes, with sporadic scalding (as at this site)

Substrate: Alluvial clay, red and grey mottled with coarse structure

Vegetation:



Type Site: Site No.: CL018

1:50,000 sheet:	6729-4 (Eudunda)	Hundred:	Neales
Annual rainfall:	300 mm	Sampling date:	16/03/95
Landform:	Very gently inclined plain, 1% slope		
Surface:	Soft, scalded with 10% quartz gravel and pebbles		

Soil Description:

Depth (cm)	Description
0-10	Dark brown highly calcareous soft clay loam with 10% quartz gravel and 10% calcrete fragments. Clear to:
10-25	Reddish brown very highly calcareous soft clay loam with 10-20% carbonate nodules. Clear to:
25-65	Orange very highly calcareous soft fine sandy clay loam with 10-20% carbonate nodules. Gradual to:
65-115	Red highly calcareous friable light medium clay with strong coarse subangular blocky structure, minor carbonate fragments and minor manganiferous segregations. Gradual to:
115-160	Red and grey mottled moderately calcareous medium clay with moderate coarse subangular blocky structure.
160-200	Dark reddish brown, red and grey mottled moderately calcareous firm medium clay with moderate coarse subangular blocky structure.



Classification: Hypervescent, Regolithic, Hypercalcic Calcarosol; medium, gravelly, clay loamy / clayey, deep

Summary of Properties

Drainage	Well to moderately well drained. The soil may occasionally become saturated for a week or so after prolonged rainfall (probably rare).
Fertility	All major nutrients are well supplied, although phosphorus is marginal. The highly calcareous soil is susceptible to trace element fixation, especially zinc and manganese. Inherent fertility is moderately high, but salinity limits plant growth and therefore nutrient requirements.
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	115 cm in pit, but few roots below 25 cm.
Barriers to root growth	
Physical:	No apparent physical barriers.
Chemical:	Very high surface salinity, sodicity and boron caused by evaporative concentration.
Water holding capacity	Approximately 60 mm in rootzone.
Seedling emergence:	Good from a soil structure point of view; poor from a chemical standpoint.
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	8.6	8.3	16.3	6.1	34.1	1.6	21	789	959	16.7	-	-	-	-	13.7	6.63	4.06	4.70	2.17	34.3
0-10	8.5	8.2	17.1	5.3	27.5	1.8	34	1258	944	26.5	-	-	-	-	16.6	8.20	3.68	4.62	3.61	27.8
10-25	9.6	8.8	27.2	2.6	16.8	0.9	9	947	337	36.1	-	-	-	-	12.3	3.36	3.92	6.15	2.74	50.0
25-65	9.6	8.7	49.2	2.3	17.2	0.0	<4	381	247	15.0	-	-	-	-	7.8	2.06	3.50	4.30	1.12	55.1
65-115	9.5	8.7	22.7	1.3	8.7	0.1	<4	397	99	8.2	-	-	-	-	11.3	1.93	5.29	4.15	1.11	36.7
115-160	9.5	8.7	7.6	0.9	5.6	0.2	<4	500	80	7.7	-	-	-	-	14.7	2.21	7.75	5.05	1.35	34.3
160-200	9.0	8.2	0.1	0.6	3.5	0.0	<4	512	69	8.9	-	-	-	-	18.0	2.39	9.67	4.90	1.45	27.2

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.