

SHALLOW CALCAREOUS LOAM

General Description: *Stony calcareous loam overlying very highly calcareous decomposing rock, often capped by a thin layer of calcrete*

Landform: Upper slopes of undulating rises and low hills

Substrate: Basement siltstone, mantled by extensive soft carbonate

Vegetation: Casuarina open woodland



Type Site: Site No.: CU064

1:50,000 sheet: 6630-4 (Spalding) Hundred: Andrews
 Annual rainfall: 450 mm Sampling date: 13/05/96
 Landform: Upper slope of an undulating rise, 4% slope
 Surface: Firm with 10-20% siltstone and calcrete fragments

Soil Description:

Depth (cm)	Description
0-10	Moderately calcareous dark brown loam with moderate crumb structure and 10-20% calcrete and siltstone fragments. Clear to:
10-20	Highly calcareous dark brown loam with moderate polyhedral structure and 10-20% calcrete and siltstone fragments. Sharp to:
20-25	Massive calcrete pan. Clear to:
25-50	Very highly calcareous massive brown loam with 20-50% siltstone fragments and more than 50% soft carbonate. Gradual to:
50-80	Very highly calcareous pale brown massive silty loam with 20-50% siltstone fragments and more than 50% soft carbonate. Gradual to:
80-100	Weathering siltstone with 10-20% carbonate pockets.



Classification: Ceteric, Petrocalcic, Calcic Calcarosol; medium, gravelly, loamy / loamy, very shallow

Summary of Properties

Drainage	Well drained. The soil is never likely to remain wet for more than a day or so.
Fertility	Natural fertility is moderately low due to the low clay content and high carbonate content. Phosphorus, potassium, calcium and magnesium are adequate. Trace elements need to be monitored as calcareous soils tend to lock up manganese and zinc.
pH	Alkaline throughout.
Rooting depth	50 cm in pit, but few roots below 20 cm.
Barriers to root growth	
Physical:	Basement rock at moderately shallow depth. Where continuous, the calcrete pan also restricts root growth.
Chemical:	There are no chemical barriers to root growth.
Water holding capacity	Approximately 60 mm in root zone.
Seedling emergence:	Good.
Workability:	Good.
Erosion Potential	
Water:	Moderately low (soil is resistant to erosion and is near the crest of a rise).
Wind:	Moderately low. Calcareous soils are prone to erosion if over-grazed or excessively worked, due to their tendency to powder.

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	8.3	7.6	4	0.19	1.14	1.88	41	540	12	1.6	0.70	8	18.1	1.11	17.9	16.0	1.61	0.13	1.47	0.7	
0-10	8.3	7.6	6	0.16	1.29	2.19	64	520	8.8	1.7	-	-	-	-	17.1	16.9	1.49	0.10	1.44	0.6	
10-20	8.5	7.7	11	0.11	0.58	1.44	9	213	6.5	1.3	-	-	-	-	13.3	16.2	1.27	0.15	0.45	1.1	
20-25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-50	8.8	7.8	49	0.10	0.55	0.55	5	74	11	0.8	-	-	-	-	4.0	6.41	0.71	0.14	0.08	3.5	
50-80	8.9	7.8	58	0.11	0.68	0.33	3	87	15	0.3	-	-	-	-	3.0	4.45	0.94	0.13	0.09	4.3	
80-100	9.1	8.0	17	0.10	0.36	0.09	2	81	7	0.2	-	-	-	-	1.2	1.80	0.39	0.08	0.00	6.7	

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.