

DEEP RUBBLY CALCAREOUS LOAM

General Description: *Highly calcareous sandy loam becoming more calcareous at depth with variable rubble content*

Landform: Gently undulating plain.

Substrate: Very highly calcareous medium grained windblown deposits (Woorinen Formation).

Vegetation:



Type Site: Site No.: CY006

1:50,000 sheet: 6429-3 (Maitland)

Hundred: Kilkerran

Annual rainfall: 415 mm

Sampling date: 08/12/92

Landform: Very gentle slope of 1%

Surface: Firm with no stones

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-15	Dark brown friable massive highly calcareous loam. Gradual to:
15-32	Brown friable massive very highly calcareous fine sandy loam with 2-10% carbonate nodules (2-20 mm). Clear to:
32-54	Yellowish brown soft massive very highly calcareous fine sandy loam with 20-50% carbonate nodules (20-60 mm). Clear to:
54-80	Yellowish brown soft massive very highly calcareous fine sandy loam with 10-20% carbonate nodules (6-20 mm). Gradual to:
80-155	Yellowish brown soft massive very highly calcareous sandy loam with more than 50% carbonate nodules (20-60 mm). Diffuse to:
155-170	Brownish yellow friable massive very highly calcareous fine sandy clay loam with 20-50% carbonate nodules (6-20 mm).



Classification: Hypervescent, Regolithic, Lithocalcic Calcarosol; thick, non-gravelly, loamy / clay loamy, very deep

Summary of Properties

Drainage	Well drained. The soil rarely remains saturated for more than a day or so following heavy or prolonged rainfall.
Fertility	The soil's natural capacity to retain nutrients is moderate as indicated by the exchangeable cation values. Surface fertility relies on organic matter levels which are adequate, and on phosphorus levels which are low at this site. Nutrient availability problems due to the high free lime content and high pH are characteristic of this soil. Copper and zinc deficiencies can be expected.
pH	Alkaline at the surface, strongly alkaline at depth.
Rooting depth	Some roots to 98 cm in pit, but few below 80 cm.
Barriers to root growth	
Physical:	There are no physical barriers.
Chemical:	High sodicity, pH and boron concentrations, and moderately high salinity, restrict root growth below 80 cm. Low trace element availability compounds the situation.
Water holding capacity	Approximately 100 mm in rootzone, but about a third is effectively unavailable due to low root density in the subsoil.
Seedling emergence:	Good. Organic matter levels need to be maintained to preserve soil structure.
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	8.2	7.7	17	0.21	0.63	1.6	21	750	-	2.6	0.77	4.7	13	0.57	19.2	14.9	1.71	0.17	2.08	0.9
0-15	8.2	7.7	16	0.19	0.58	1.3	15	770	-	2.8	0.78	4.4	9.1	0.36	19.0	16.0	1.99	0.16	2.15	0.8
15-32	8.4	7.9	30	0.16	0.38	0.71	4.8	400	-	2.8	0.94	3.7	3.5	0.15	17.5	14.1	2.90	0.40	1.06	2.3
32-54	8.8	7.9	50	0.21	0.63	0.52	4.2	160	-	4.5	0.75	3.3	2.3	0.11	12.0	8.72	3.64	1.26	0.49	10
54-80	9.5	8.0	59	0.36	1.29	0.30	<2.0	200	-	9.4	0.80	2.4	0.92	0.07	8.4	3.51	3.82	2.46	0.63	29
80-155	9.6	8.3	60	1.17	8.12	0.13	<2.0	350	-	17.6	0.40	1.6	0.73	0.07	7.6	1.67	3.42	4.43	0.97	58
155-170	9.6	8.3	65	1.21	9.79	0.12	<2.0	310	-	14.3	0.29	1.3	0.85	0.08	5.8	1.27	2.75	3.25	0.69	56

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.