

RUBBLY CALCAREOUS SANDY LOAM

General Description: *Shallow calcareous sandy loam to loam over rubbly calcrete, grading to softer carbonate in a medium textured matrix*

Landform: Low rises on very gently undulating plains

Substrate: Rubbly calcrete capping very highly calcareous sandy clay loam with variable nodular carbonate (Woorinen Formation)

Vegetation: Mallee scrub



Type Site: Site No.: CL017

1:50,000 sheet:	6729-3 (Truro)	Hundred:	Dutton
Annual rainfall:	325 mm	Sampling date:	16/03/95
Landform:	Crest of low rise on a plain, 2% slope		
Surface:	Soft with 20-50% calcrete stones and cobbles		

Soil Description:

Depth (cm)	Description
0-23	Dark brown soft calcareous fine sandy loam with 10-20% calcrete nodules and minor quartz gravel. Sharp to:
23-45	Rubbly calcrete pan (Class III C carbonate) in a highly calcareous brown loam matrix. Abrupt to:
45-75	Brown very highly calcareous sandy clay loam with 20-50% calcrete nodules. Clear to:
75-120	Brown very highly calcareous sandy clay loam with 10-20% calcrete fragments. Clear to:
120-160	Reddish brown calcareous clay loam with 10-20% calcrete nodules and calcareous tubules. Gradual to:
160-200	Reddish brown calcareous clay loam with up to 10% calcareous tubules. Gradual to:



Classification: Epihypersodic, Regolithic, Lithocalcic Calcarosol; medium, moderately gravelly, loamy / clay loamy, deep

Summary of Properties

Drainage	Well drained. Soil is never likely to remain wet form more than a day or so.
Fertility	Natural fertility is moderate (calcareous soils tie up phosphorus and some trace elements). Phosphorus, potassium and sulphur concentrations are all adequate to high. Lime induced deficiencies of zinc and manganese are possible. Organic carbon levels are high (low biological activity in dry highly calcareous soils).
pH	Alkaline at the surface, strongly alkaline from 23 cm.
Rooting depth	75 cm, with a few roots to 120 cm in pit.
Barriers to root growth	
Physical:	Heavy rubble impedes root growth to some extent, and in places forms an impenetrable barrier.
Chemical:	High alkalinity (pH _{water} more than 9.2) from 23 cm is the main chemical barrier.
Water holding capacity	Approximately 90 mm in root zone.
Seedling emergence:	Good.
Workability:	Good.
Erosion Potential	
Water:	Moderately 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	8.3	7.8	2.7	0.2	1.1	2.8	35	719	21	3.0	-	-	-	-	16.6	14.15	2.18	0.10	2.07	0.6
0-10	8.3	7.8	4.5	0.2	1.1	2.4	95	529	19	2.1	-	-	-	-	15.4	13.14	2.15	0.18	1.60	1.2
10-23	8.4	7.9	2.6	0.2	1.4	2.2	46	508	17	1.8	-	-	-	-	14.8	13.68	2.21	0.15	1.67	1.0
23-45	9.3	8.5	18.3	0.6	3.8	1.1	14	386	33	5.7	-	-	-	-	11.9	6.83	4.69	2.31	1.33	19.4
45-75	9.9	8.6	51.4	1.0	7.1	0.1	5	316	89	9.9	-	-	-	-	7.1	1.54	3.11	3.20	0.98	45.1
75-120	9.8	8.6	26.4	1.0	8.5	0.3	<4	410	99	8.8	-	-	-	-	7.8	1.78	2.69	3.76	1.22	48.2
120-160	9.6	8.7	10.3	1.3	9.6	0.1	<4	591	118	17.8	-	-	-	-	10.7	2.22	4.03	4.57	1.68	42.7
160-200	9.6	8.7	4.0	1.2	9.5	0.1	<4	564	104	22.0	-	-	-	-	10.4	1.96	3.75	4.27	1.57	41.1

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.