CALCAREOUS SANDY CLAY LOAM ON CLAY

(Wiabuna soil)

General Description: Calcareous sandy clay loam with variable subsurface rubble, over a clayey substrate within 120 cm

Landform:	Very gently undulating rises.
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Substrate: Tertiary heavy clay.



Type Site:	Site No.:	EL102	1:50,000 mapsheet:	6129-4 (Butler)			
	Hundred:	Butler	Easting:	612190			
	Section:	73	Northing:	6224620			
	Sampling date:	11/03/1994	Annual rainfall:	340 mm average			

Flat between rises, 1% slope. Firm surface with 2-10% calcrete stone.

Soil Description:

Vegetation:

Description	
Dark brown friable moderately calcareous sandy clay loam with weak fine subangular blocky structure. Clear to:	
Brown friable highly calcareous clay loam with weak subangular blocky structure and 10-20% calcrete fragments. Abrupt to:	
Yellowish brown soft very highly calcareous clay loam with more than 50% calcrete fragments (6- 20 mm). Abrupt to:	
Partially cemented Class III C rubble layer. Clear to:	
Reddish yellow soft very highly calcareous clay loam with moderate fine subangular blocky structure and more than 50% calcrete fragments (6-20 mm). Gradual to:	
Reddish yellow very hard very highly calcareous medium clay with minor quartz gravel. Clear to:	A Company
Yellowish red and grey mottled friable heavy clay with strong angular blocky structure.	
	 Dark brown friable moderately calcareous sandy clay loam with weak fine subangular blocky structure. Clear to: Brown friable highly calcareous clay loam with weak subangular blocky structure and 10-20% calcrete fragments. Abrupt to: Yellowish brown soft very highly calcareous clay loam with more than 50% calcrete fragments (6-20 mm). Abrupt to: Partially cemented Class III C rubble layer. Clear to: Reddish yellow soft very highly calcareous clay loam with moderate fine subangular blocky structure and more than 50% calcrete fragments (6-20 mm). Gradual to: Reddish yellow very hard very highly calcareous medium clay with minor quartz gravel. Clear to: Yellowish red and grey mottled friable heavy clay

Classification: Endohypersodic, Regolithic, Lithocalcic Calcarosol; medium, slightly gravelly, clay loamy / clay loamy, deep





Summary of Properties

Drainage:	Well drained. The soil is rarely saturated for more than a day or so following heavy or prolonged rainfall.					
Fertility:	Inherent fertility is high, as indicated by the exchangeable cation data. Surface clay and organic carbon levels are high, providing abundant nutrient retention. Concentrations of all measured elements are adequate, although nitrogen levels were not assessed - depend on legume status of pastures and cropping history.					
рН:	Alkaline at the surface, strongly alkaline with depth.					
Rooting depth:	30 cm in pit.					
Barriers to root growth:						
Physical:	The partly cemented Class III C carbonate rubble layer severely restricts root growth.					
Chemical:	High pH, sodicity and boron concentrations below 60 cm effectively inhibit deeper root growth.					
Waterholding capacity:	Approximately 35 mm in the rootzone.					
Seedling emergence:	Satisfactory.					
Workability:	Firm surface is easily worked.					
Erosion Potential:						
Water:	Low.					
Wind:	Moderately low.					

Laboratory Data

Depth cm	pH H ₂ O	pH CaC1 ₂	CO3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Р	K	mg/kg	Boron mg/kg				CEC cmol	Excl	ESP				
							mg/kg	mg/kg			Cu	Fe	Mn	Zn	(+)/kg	Ca	Mg	Na	K	
0-10	8.3	7.7	5	0.21	0.99	2.0	62	990	-	3.6	0.25	9.6	7.6	0.59	39.2	29.9	5.23	0.15	3.91	0.3
10-15	8.6	8.0	12	0.18	0.53	1.6	6.3	670	-	4.1	0.33	16	1.6	0.31	45.2	32.2	10.2	0.10	2.73	0.2
15-30	9.1	8.4	24	0.25	0.87	1.1	9.0	610	-	8.4	0.56	8.9	1.3	0.47	34.9	16.7	14.5	1.14	2.60	3.3
30-60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60-100	10.0	8.7	56	0.87	3.87	0.17	<2.0	840	-	26	0.65	3.5	0.29	0.39	22.0	2.20	9.90	7.72	2.72	32.8
100-140	10.0	8.8	52	0.97	5.30	0.13	<2.0	920	-	29	0.63	3.4	0.25	1.0	24.7	2.07	9.92	9.43	3.29	38.2
140-150	9.1	8.3	2	1.14	4.28	<0.1	<2.0	1200	-	41	0.46	4.5	0.87	0.29	31.2	1.12	13.3	12.32	4.48	39.5

Note: 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.

Further information: <u>DEWNR Soil and Land Program</u>



