

SHALLOW CALCAREOUS LOAM (Calcareous loam)

General Description: *Calcareous loam grading to a highly calcareous clay loam with variable rubble, forming in weathering basement rock*

Landform: Undulating rises and low hills.

Substrate: Weathering basement gneiss and schist.

Vegetation:



Type Site: Site No.: EE047

1:50,000 sheet: 6230-4 (Mangalo)

Annual rainfall: 350 mm

Landform: Lower slope of 2%

Surface: Firm with no stones

Hundred: Mangalo

Sampling date: 13/04/89

Soil Description:

Depth (cm)	Description
0-10	Dark yellowish brown highly calcareous loam with weak fine granular structure. Clear to:
10-25	Yellowish brown highly calcareous massive sandy clay loam. Clear to:
25-55	Yellowish brown massive very highly calcareous clay loam with 20-50% carbonate nodules. Clear to:
55-100	Weathering rock with 20-50% fine carbonate segregations. Gradual to:
100-150	Weathering rock with minor fine carbonate segregations.



Classification: Epihypersodic, Paralithic, Supracalcic Calcarosol; medium, non-gravelly, loamy / clay loamy, moderate

Summary of Properties

Drainage	Well drained. The soil rarely remains wet for more than a few days.
Fertility	Inherent fertility is moderate as indicated by the exchangeable cation data. Regular phosphorus applications are essential - the free lime in the soil reduces availability. Nitrogen levels depend on cropping history and legume content of pastures. Copper and zinc deficiencies occur occasionally, although levels are adequate at the sampling site.
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	55 cm in pit.
Barriers to root growth	
Physical:	There are no physical barriers in the soil profile. The underlying rock becomes harder and more impenetrable with depth.
Chemical:	High pH and sodicity from 25 cm limit root growth.
Water holding capacity	Approximately 60 mm in the root zone.
Seedling emergence:	Satisfactory.
Workability:	Firm surface is easily worked.
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	
0-11	8.0	7.6	1	0.24	1.91	-	-	-	-	4.7	1.31	12	28.0	0.71	19.0	?	3.40	0.21	1.80	1.0
11-25	8.9	8.3	18	0.22	1.07	-	-	-	-	4.3	2.10	9.8	4.60	0.15	14.0	?	4.40	0.33	0.89	2.0
25-55	10.3	9.1	30	0.70	4.12	-	-	-	-	11.1	2.10	5.6	1.14	0.17	10.0	?	14.00	3.70	0.96	37.0
55-100	10.6	9.3	32	0.74	4.40	-	-	-	-	11.5	2.21	4.7	0.97	0.33	7.80	?	9.30	4.10	0.71	53.0
100-150	10.6	9.1	1	0.48	5.15	-	-	-	-	3.1	-	-	-	-	2.80	?	3.10	0.90	0.18	32.0

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

* Exchangeable calcium (Ca) values not presented because the laboratory procedure used was inappropriate for very highly calcareous samples.