

THICK SAND OVER CLAY (Heggaton soil)

General Description: *Thick sand over a brown or red sandy clay loam, calcareous at depth*

Landform: Undulating low hills.

Substrate: Sandy clay alluvium

Vegetation:

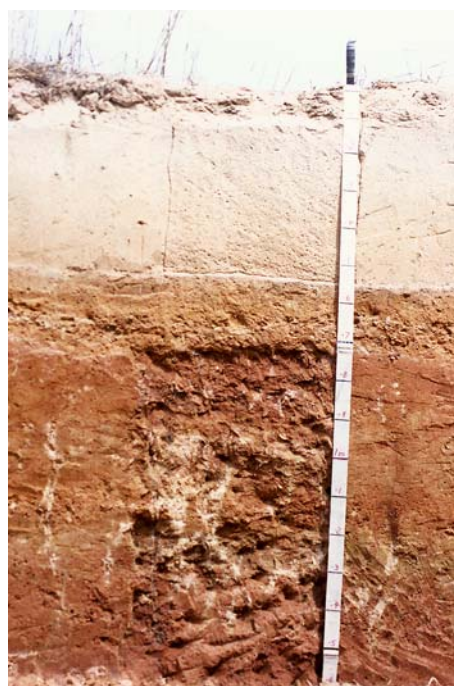


Type Site: Site No.: EE048

1:50,000 sheet:	6230-4 (Mangalo)	Hundred:	Miltalie
Annual rainfall:	340 mm	Sampling date:	01/03/88
Landform:	Slope of undulating low hill		
Surface:	Soft with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Yellowish brown single grain loamy sand. Abrupt to:
10-35	Yellowish brown slightly calcareous massive loamy sand. Gradual to:
35-56	Yellowish brown massive loamy sand with a thin coarse sandy band (55-56 cm). Sharp to:
56-63	Orange massive coarse sandy clay loam. Abrupt to:
63-74	Orange coarse sandy clay with weak coarse lenticular structure. Abrupt to:
74-80	Orange medium clay with weak coarse lenticular structure. Abrupt to:
80-110	Orange highly calcareous light medium clay with weak coarse lenticular structure. Gradual to:
110-140	Orange very highly calcareous light medium clay (as above). Diffuse to:
140-160	Yellowish red slightly calcareous medium clay with weak coarse lenticular structure.



Classification: Sodic, Calcic, Brown Chromosol; thick, non-gravelly, sandy / clayey, deep

Summary of Properties

Drainage Moderately well drained. Water perches on the clayey subsoil for up to a week at a time, but the topsoil is sufficiently thick that waterlogging is unlikely to be a problem.

Fertility Inherent fertility is moderately low, as indicated by the exchangeable cation data, and low clay content. Regular phosphorus applications are essential. Nitrogen status depends on cropping history and legume component of pastures. Copper, zinc and manganese deficiencies are all possible in some seasons.

pH Neutral at the surface, alkaline in the subsoil, strongly alkaline in the deep subsoil.

Rooting depth Not recorded. Estimate 55 cm in pit.

Barriers to root growth

Physical: The dense sandy clay loam / clay subsoil restricts strong uniform root growth.

Chemical: There are no chemical limitations in the upper 100 cm, but low nutrient retention capacity inhibits root growth.

Water holding capacity Approximately 60 mm in the root zone.

Seedling emergence: Satisfactory except in seasons when water repellence is a problem.

Workability: Soft surface is easily worked.

Erosion Potential

Water: Moderately low.

Wind: Moderate.

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	
0-10	7.0	6.2	7	0.08	0.40	-	-	-	-	0.5	0.18	6.33	1.66	0.13	1.96	1.32	0.25	0.01	0.13	na
10-24	7.4	6.5	8	0.04	0.15	-	-	-	-	0.3	0.20	5.75	0.20	0.09	1.67	0.99	0.18	0.01	0.06	na
24-35	7.9	7.0	8	0.04	0.17	-	-	-	-	0.3	0.03	4.46	0.22	0.11	1.63	1.01	0.22	0.04	0.08	na
35-56	8.2	7.0	7	0.04	0.18	-	-	-	-	0.4	0.32	3.86	0.32	0.09	1.88	1.23	0.29	0.02	0.10	na
56-63	8.5	7.5	6	0.09	0.42	-	-	-	-	1.3	0.70	4.35	0.33	0.36	7.20	4.54	2.51	0.22	0.57	3
63-74	8.7	7.2	8	0.12	0.42	-	-	-	-	2.0	0.85	3.67	0.39	0.23	9.50	4.92	3.56	0.32	0.82	3
74-80	8.7	7.5	12	0.18	0.42	-	-	-	-	4.9	0.78	2.96	0.58	0.33	15.20	7.32	6.96	0.64	1.73	4
80-110	9.0	7.6	8	0.18	0.56	-	-	-	-	5.6	0.67	2.84	0.52	0.15	12.10	3.57	6.10	1.00	1.40	8
110-140	9.4	7.8	8	0.28	0.74	-	-	-	-	6.2	0.65	3.07	0.40	0.23	13.60	6.78	6.15	2.10	1.32	15
140-160	9.5	7.8	11	0.34	0.71	-	-	-	-	7.5	0.76	3.29	0.63	0.19	16.30	4.05	7.23	3.40	1.76	21

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.