SANDY LOAM OVER DSIPERSIVE RED CLAY ON ROCK

General Description: *Hard sandy loam over a coarsely structured dispersive red clay, calcareous with depth, forming in weathering rock within 100 cm*

Landform: Slopes of undulating rises and low hills.

Substrate: Micaceous basement rock, usually mantled by fine grained windblown carbonate.

Vegetation:

Type Site:

Site No.:	EE219		
1:50,000 sheet:	6230-4 (Mangalo)	Hundred:	Mann
Annual rainfall:	400 mm	Sampling date:	18/09/01
Landform:	Upper slope of undulating rise, 4% slope.		
Surface:	Firm.		

Soil Description:

Depth (cm)	*Description*
0-10	Dark brown fine sandy loam with weak granular structure and 10% quartz gravel. Clear to:
10-40	Dark red dispersive medium clay with weak coarse columnar breaking to strong angular blocky structure and 5% quartz gravel. Diffuse to:
40-50	Brown massive very highly calcareous medium clay with 20% schist fragments. Diffuse to:
50-80	Weathering schist with 10% pockets of moderately calcareous clay as above.

Classification: Calcic, Subnatric, Red Sodosol; medium, slightly gravelly, loamy / clayey, moderate

Summary of Properties

Drainage: Moderately well drained. Soil is unlikely to remain wet for more than a week or so following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. Levels of tested elements are adequate. Although surface sulphate concentrations are low, there are ample subsoil supplies.

pH: Neutral at the surface, strongly alkaline with depth.

Rooting depth: 80 cm in pit, but few roots below 40 cm.

Barriers to root growth:

Physical: The coarsely structured subsoil impedes root growth to some extent. Depth to rock is likely to be variable, but where it is shallower than 50 cm, plant growth is restricted.

Chemical: High pH/sodicity below 40 cm restricts root growth.

Water holding capacity: Approximately 60 mm in the root zone.

Seedling emergence: Fair to good, depending on condition of surface. Fine sandy loams tend to seal and set hard, imposing a barrier to emergence.

Workability: Fair to good, depending on surface condition. Where surface friability is lost, soils have a narrow moisture range for effective working, shattering if too dry, and puddling if too wet.

Erosion Potential

Water: Moderate due to combination of high erodibility and 4% slope.

Wind: Moderately low – problems only likely if surface excessively cultivated or over-grazed.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC 1:5 dS/m	Org.C %	NO_3 mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO_4 mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum of cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-10	6.9	6.4	nd	0.06	2.01	11	168	372	3.1	0.9	0.46	64.3	53.0	10.8	8.7	6.49	1.25	0.16	0.82	1.8
10-40	8.4	7.7	nd	0.21	0.39	2	22	108	28.2	1.2	0.16	9.9	0.20	1.44	18.6	8.38	7.49	2.49	0.27	13.5
40-50	9.4	8.7	nd	0.26	0.19	3	12	96	26.6	1.2	0.28	5.8	0.18	0.39	16.8	7.62	5.75	3.18	0.21	19.0
50-80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Sum of cations in neutral to alkaline soils is an approximation of cation exchange capacity (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 sum of cations.