SANDY LOAM OVER DISPERSIVE CLAY ON ROCK

(Hammat soil)

General Description: Sandy loam to loam over a red or yellowish brown coarse blocky clay,

sometimes calcareous with depth, grading to weathering basement

rock

Landform: Undulating to rolling low

hills.

Substrate: Schists and gneisses of the

Hutchison Group.

Vegetation:

Type Site: Site No.: EL143

50,000 sheet:6029-2 (Koppio)Hundred:KoppioAnnual rainfall:475 mmSampling date:1982Landform:Mid slope in a landscape of undulating low hills, 15% slope

Surface: Firm with 10-20% gneiss fragments

Soil Description:

Depth (cm) Description

0-10 Dark brown sandy loam with granular structure

and 10-25% gneiss fragments (10-50 mm).

Gradual to:

Dark yellowish brown light sandy loam with

granular structure and 50-75% gneiss fragments

(10-50 mm). Gradual to:

23-30 Brown massive light sandy loam with 2-10%

gneiss fragments (10-50 mm). Abrupt to:

30-50 Dark yellowish brown mottled medium clay with

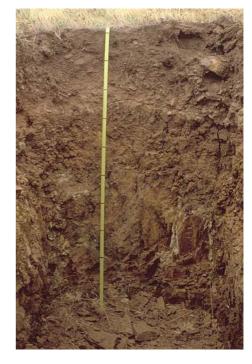
blocky structure and 2-10% gneiss fragments (10-

50 mm). Diffuse to:

50-110 Yellowish brown calcareous medium clay with

blocky structure and fine carbonate segregations

in pockets within weathered gneiss.



Classification: Calcic, Mottled-Mesonatric, Brown Sodosol; thick, gravelly, loamy / clayey, deep

Summary of Properties

Drainage Moderately well to imperfectly drained. Water will perch on the clayey subsoil for a

week to several weeks following heavy or prolonged rainfall.

Fertility Inherent fertility is moderate, as indicated by the exchangeable cation data. Nutrient

retention capacity is fair at the surface, but the subsoil has a large retention capacity. Phosphate levels are extremely low, and zinc and manganese concentrations in the

lower topsoil are low. Organic carbon levels are also sub-optimal.

pH Neutral in the surface and upper subsoil, alkaline in the lower subsoil / weathering

rock layer.

Rooting depth Not recorded. Estimate 50 cm in pit.

Barriers to root growth

Physical: The clayey subsoil from 30 cm restricts root growth to some extent.

Chemical: There are no apparent chemical barriers apart from low trace element availability in

the subsoil.

Water holding capacity Approximately 65 mm in the root zone.

Seedling emergence: Fair to satisfactory depending on the degree of hard setting.

Workability: Fair. Surface soil prone to setting hard, reducing time for effective cultivation.

Erosion Potential

Water: Moderate to high.

Wind: Low.

Laboratory Data

Depth cm	Sand %	Silt %	Clay %	pH H ₂ O	pH CaC1 ₂	CO ₃	EC1:5 dS/m		Org.C	Avail. P	Trace Elements mg/kg (DTPA)			CEC cmol	Exchangeable Cations cmol(+)/kg				ESP	
										mg/kg	Cu	Fe	Mn	Zn	(+)/kg	Ca	Mg	Na	K	
0-10	79	9	12	7.7	-	0	0.05	0.86	1.24	3	1.92	32	10.0	0.52	11.0	4.7	1.80	0.26	0.40	2.4
10-23	83	8	9	6.8	-	0	0.04	0.88	0.67	2	0.88	30	2.6	0.40	6.5	2.6	1.10	0.21	0.24	3.2
23-30	82	9	9	6.9	-	0	0.03	0.55	0.27	2	0.28	22	0.2	0.12	4.1	1.4	0.99	0.11	0.15	2.7
30-50	41	4	55	7.2	-	1.5	0.18	1.06	-	-	-	-		-	30.0	7.7	12.0	4.50	1.10	15.0
50-110	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-

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.