

## LOAM OVER RED CLAY ON ROCK ( Calderwood soil)

**General Description:** *Loam over a well structured red clay, occasionally calcareous with depth, grading to fine grained weathering basement rock*

**Landform:** Undulating to rolling low hills.

**Substrate:** Amphibolites of the Hutchison Group.

**Vegetation:** Eucalyptus cladocalyx woodland.



**Type Site:** Site No.: EL144

50,000 sheet:	6029-2 (Koppio)	Hundred:	Koppio
Annual rainfall:	525 mm	Sampling date:	1982
Landform:	Lower slope in a landscape of rolling low hills, 10% slope		
Surface:	Firm with 10-20% stones		

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark reddish brown loam with granular structure and 10-25% amphibolite fragments (10-50 mm). Clear to:
10-40	Dark red medium clay with blocky structure and 2-10% amphibolite fragments (10-50 mm). Gradual to:
40-80	Dark red medium clay with blocky structure in pockets within plates and lamellae of hard weathering amphibolite.



**Classification:** Haplic, Eutrophic, Red Chromosol; medium, gravelly, loamy / clayey, moderate

## Summary of Properties

<b>Drainage</b>	Moderately well drained. Water perches on the clayey subsoil for a week or so following heavy or prolonged rainfall.
<b>Fertility</b>	Inherent fertility is high, as indicated by the exchangeable cation data. Nutrient retention capacity is favoured by the relatively high clay content to the surface, and the absence of paler coloured sub surface layers indicates that leaching is not a significant factor. Phosphorus levels are low, as are zinc levels in the clayey subsoil. Organic carbon levels are satisfactory.
<b>pH</b>	Slightly acid at the surface, neutral with depth.
<b>Rooting depth</b>	Not recorded. Estimate 40 cm in pit.
<b>Barriers to root growth</b>	
<b>Physical:</b>	The clayey subsoil from 10 cm restricts root growth to some extent, but effects are likely to be minimal. Basement rock at shallower depths than at the sampling site is a more significant determinant of the root zone.
<b>Chemical:</b>	There are no apparent chemical barriers apart from low zinc availability in the subsoil.
<b>Water holding capacity</b>	Approximately 75 mm in the root zone.
<b>Seedling emergence:</b>	Satisfactory, although hard setting in some soils affects establishment.
<b>Workability:</b>	Satisfactory, although some surfaces may set hard, limiting cultivation effectiveness.
<b>Erosion Potential</b>	
<b>Water:</b>	Moderately high.
<b>Wind:</b>	Low.

## Laboratory Data

Depth cm	Sand %	Silt %	Clay %	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P 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	68	18	14	6.4	-	1.0	0.09	1.28	1.48	9	7.84	33	>50	0.90	15	5.1	1.4	0.16	0.85	1.1
10-40	28	5	67	7.0	-	2.0	0.03	0.14	0.72	3	8.48	15	33	0.16	29	11.0	8.2	0.45	1.10	1.6
40-80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**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.