IRONSTONE SOIL

(Wanilla soil)

General Description: *Ironstone gravelly sandy loam over a brown clay grading to highly weathered kaolinized sediments*

Landform: Rolling low hills.

Substrate: Deeply weathered kaolinized Tertiary sediments.

Vegetation:

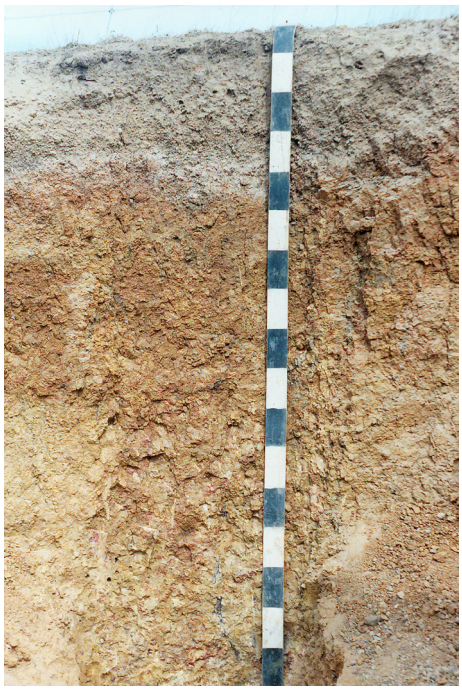
Type Site:

Site No.:	EL004	1:50,000 mapsheet:	6029-2 (Koppio)
Hundred:	Koppio	Easting:	575900
Section:	87	Northing:	6192850
Sampling date:	24/03/1992	Annual rainfall:	490 mm average

Upper slope of 15%. Soft surface with 10-20% ironstone (20-60 mm).

Soil Description:

Depth (cm)	*Description*
0-5	Dark greyish brown soft sandy loam with weak subangular blocky structure and 2-10% ironstone gravel (6-20 mm). Clear to:
5-18	Brown firm massive sandy loam with 20-50% ironstone concretions. Clear to:
18-32	Yellowish brown firm massive coarse sandy loam with more than 50% ironstone concretions. Sharp to:
32-85	Brownish yellow and red very hard medium clay with fine angular blocky structure and 2-10% ironstone concretions. Gradual to:
85-180	Yellowish brown and red very hard medium clay with fine angular blocky structure and 10-20% ironstone concretions.



Classification: Ferric, Eutrophic, Brown Chromosol; thick, gravelly, loamy / clayey, very deep

Summary of Properties

Drainage: Imperfectly drained. Water may perch on the clayey subsoil for several weeks following heavy or prolonged rainfall.

Fertility: Inherent fertility is low, as indicated by the exchangeable cation data. The surface layers have a very low capacity to retain nutrients, and supply of phosphorus is hindered by the abundant ironstone gravel. There is good retention capacity in the subsoil.

pH: Acidic at the surface, alkaline with depth

Rooting depth: 85 cm in pit.

Barriers to root growth:

Physical: The clayey subsoil presents a minor barrier to uniform root growth.

Chemical: There are no chemical limitations, other than low nutrient retention capacity and high phosphate fixing capacity.

Waterholding capacity: Approximately 80 mm in the rootzone.

Seedling emergence: Satisfactory.

Workability: Soft to firm surface is easily worked.

Erosion Potential:

Water: Moderately high.

Wind: Moderately low.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4 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	
0-5	6.4	5.4	0	0.04	0.27	1.30	27	-	4.0	1.0	0.78	55.8	3.20	0.48	2.6	2.6	0.8	0.14	0.52	na
5-18	6.4	5.0	0	0.03	0.17	1.30	27	-	2.6	0.6	0.78	55.8	3.20	0.48	1.7	1.8	0.6	0.07	0.27	na
18-32	6.9	6.1	0	0.06	0.35	0.45	5	-	4.5	0.6	0.92	22.4	0.70	0.36	1.4	1.6	0.7	0.13	0.36	na
32-85	7.1	6.0	0	0.12	0.82	0.21	2	-	25	3.3	0.24	9.8	0.06	0.18	16.3	4.4	4.4	0.84	0.50	5
85-180	7.6	6.3	2.2	0.35	1.20	-	-	-	24	5.1	-	-	-	-	17.3	5.7	5.7	1.76	0.22	10

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

Further information: DEWNR Soil and Land Program