

## ACIDIC IRONSTONE SANDY LOAM

**General Description:** *Ironstone gravelly sandy loam over a red and yellow friable clay, becoming red and grey mottled with depth grading to kaolinitic weathered basement rock*

**Landform:** Gently inclined upper slopes and crests, and relict summit surfaces

**Substrate:** Deeply weathered kaolinized sandstone

**Vegetation:** Open stringybark forest



**Type Site:** Site No.: CH112

1:50,000 sheet: 6627-1 (Echunga)

Hundred: Macclesfield

Annual rainfall: 750 mm

Sampling date: 04/03/97

Landform: Summit surface of undulating rises, 2% slope

Surface: Firm with 2-10% ironstone fragments. Evidence of topsoil scalping

### Soil Description:

Depth (cm)	Description
0-2	Dark brown massive fine sandy loam with 20-50% ironstone nodules. Sharp to:
2-5	Orange (bleached dry) massive fine sandy loam with 20-50% ironstone nodules. Sharp to:
5-30	Reddish yellow and red medium clay with strong fine polyhedral structure and 10-20% ironstone nodules. Gradual to:
30-55	Brownish yellow, brownish grey and red medium clay with strong medium polyhedral structure and 2-10% ironstone nodules. Gradual to:
55-100	Brownish yellow, light grey and red banded medium clay with strong blocky structure and 10-20% ironstone nodules. Diffuse to:
100-140	Light grey, brownish yellow and red banded medium clay with blocky structure and 20-50% ironstone.



**Classification:** Bleached-Ferric, Eutrophic, Yellow Chromosol; thin, moderately gravelly, loamy / clayey, very deep

## Summary of Properties

<b>Drainage</b>	Moderately well to imperfectly drained. Water will "perch" on top of the clay for a week to several weeks following prolonged rain.
<b>Fertility</b>	Natural fertility is moderate. Test data indicate that levels of all measured elements are adequate with the possible exception of copper. Calcium : magnesium ratio is slightly high. Organic carbon levels are very high. However, the topsoil is thin due to past quarrying, and fertility decreases rapidly below the top 10 cm.
<b>pH</b>	Acidic throughout. Dolomitic lime is needed for correction.
<b>Rooting depth</b>	55 cm in pit.
<b>Barriers to root growth</b>	
<b>Physical:</b>	None
<b>Chemical:</b>	Low nutrient levels below the thin topsoil. High phosphate fixation capacity.
<b>Water holding capacity</b>	Approximately 60 mm in root zone.
<b>Seedling emergence:</b>	Good to fair. Sandy loam surface is prone to compaction.
<b>Workability:</b>	Good, although surface soil can set down hard. Ironstone abrades implements.
<b>Erosion Potential</b>	
<b>Water:</b>	Low.
<b>Wind:</b>	Low.

## Laboratory Data

Depth cm	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	Avail. K mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.6	5.0	0	0.23	-	4.8	70	377	16	1.7	0.77	794	35	6.1	18.5	10.2	2.2	0.21	0.79	1.1
2-5	5.7	4.7	0	0.03	-	0.7	9	61	3.3	0.6	0.19	210	3.2	0.7	6.4	1.9	1.3	0.20	0.12	3.1
5-30	5.7	4.9	0	0.03	-	0.6	5	91	24	0.7	0.14	57	0.95	0.9	14.6	4.2	6.5	0.38	0.28	2.6
30-55	6.0	5.4	0	0.04	-	0.2	2	48	59	0.6	0.12	18	1.1	0.9	13.7	2.6	7.7	0.50	0.12	3.6
55-100	5.9	5.1	0	0.04	-	0.1	1	42	62	0.6	0.13	15	1.0	0.8	12.2	2.3	7.1	0.59	0.08	4.8
100-140	5.7	4.8	0	0.05	-	0.1	2	31	57	0.7	0.11	17	1.1	0.7	12.1	1.9	6.4	0.63	0.06	5.2

**Note:** Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.

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.