

FINE SANDY LOAM OVER BROWN CLAY

General Description: *Brown fine sandy clay loam grading to paler fine sandy clay loam on well structured medium brown clay becoming mottled with depth.*

Landform: Gently undulating plain with small swamps.

Substrate: Mottled clays and marls of the Padthaway Formation.

Vegetation: -



Type Site: Site No.: SE086

1:50,000 sheet: 7022-4 (Kalangadoo)

Hundred: Grey

Annual rainfall: 750 mm

Sampling date: 29/09/04

Landform: Plain

Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-20	Dark reddish brown massive light fine sandy clay loam. Gradual change to:
20-50	Reddish brown single grain loamy fine sand. Abrupt change to:
50-60	As above, with a few (2-10%) ironstone gravels, 6-20mm size. Roots common. Sharp break to:
60-75	Brown medium clay with moderate medium size polyhedral structure. Very few (<2%) ironstone gravels. Clear break to:
75-120	Dark yellowish brown mottled reddish brown medium to heavy clay with moderate medium size lenticular structure and a few manganiferous veins.



Classification: Haplic, Eutrophic, Brown Chromosol; thick, non-gravelly, clay loamy / clayey, deep

Summary of Properties

Drainage: Moderately well to imperfectly drained. There is some short term perching of water on top of the clay. The deep subsoil clay tends to become moderately waterlogged for periods of up to several weeks at a time.

Fertility: Inherent fertility is moderate as indicated by the sum of cations. Phosphate levels are adequate for pasture, but for intensive crops such as potatoes, they are low. Potassium status is high. Sulphur is low in the surface, but adequate below 50 cm. Trace copper and zinc are low, whilst manganese is high.

pH: Moderately acidic in the surface, becoming slightly acidic below 50 cm.

Rooting depth: 120 cm, with most roots in the 0-75 cm depth range.

Barriers to root growth:

Physical: There are no physical barriers

Chemical: There are no chemical barriers. The clayey subsoil presents only a minor impediment to root growth.

Water holding capacity: Approximately 140 mm.

Seedling emergence: Satisfactory.

Workability: The surface is readily worked over a range of moisture conditions.

Erosion Potential

Water: Low

Wind: Low, but some susceptibility if organic matter in surface is not managed conservatively.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-20	6.0	5.1	0	0.05	0.33	1.8	34	296	4	4.5	0.4	0.5	261	0.7	96.8	7.1	5.2	1.0	0.1	0.8	1.0
20-50	6.2	4.9	0	0.02	0.19	0.6	8	127	4	5.3	0.4	0.3	95	0.1	102	3.5	2.5	0.6	0.1	0.3	2.3
50-60	6.6	5.4	0	0.03	0.36	0.5	6	192	9	10.9	0.7	0.3	77	0.1	62.2	6.2	3.9	1.7	0.2	0.5	2.6
60-75	6.8	5.8	0	0.05	0.19	0.6	4	385	11	10.3	0.4	0.2	45	0.1	25.4	13.0	7.2	4.5	0.4	1.0	2.7
75-120	6.7	5.9	0	0.07	0.57	0.5	4	279	39	14.6	0.6	0.3	56	0.2	23.1	12.2	6.4	4.7	0.4	0.7	3.1

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (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 CEC (in this case, estimated by the sum of cations).