

LOAMY SAND OVER POORLY STRUCTURED BROWN CLAY

General Description: *Thin to medium loose sand with a bleached A2 layer and variable ironstone gravel, over a coarsely structured dispersive clay, calcareous with depth*

Landform: Undulating rises.

Substrate: Deeply weathered kaolinized clay.

Vegetation:



Type Site: Site No.: CK020

1:50,000 sheet:	6426-4 (Kingscote)	Hundred:	Haines
Annual rainfall:	550 mm	Sampling date:	25/05/95
Landform:	Crest of rise, 1.5% slope		
Surface:	Firm with 2-10% ironstone (6-20 mm)		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-5	Very dark grey loose loamy fine sand. Abrupt to:
5-15	Grey loose fine sand with 10-20% ironstone nodules (6-20 mm). Abrupt to:
15-17	Light grey loose fine sand with 20-50% ironstone nodules (6-20 mm). Sharp to:
17-25	Very dark greyish brown, greyish brown and light olive brown very hard heavy clay with coarse columnar (breaking to angular blocky) structure. Clear to:
25-42	Light olive brown very hard heavy clay with coarse columnar (breaking to angular blocky) structure. Clear to:
42-100	Pale yellow and light olive brown hard massive calcareous light medium clay with 20-50% fine carbonate. Gradual to:
100-155	Light olive brown, pale olive and red firm medium clay with fine lenticular structure and 10-20% fine carbonate. Diffuse to:
155-185	Light olive brown, pale olive and red hard medium heavy clay with fine lenticular structure and 2-10% fine carbonate.



Classification: Hypercalcic, Mottled-Mesonatric, Brown Sodosol; medium, slightly gravelly, sandy/clayey, deep

Summary of Properties

Drainage	Imperfectly drained. Water perches on the clayey subsoil for up to several weeks following heavy or prolonged rainfall.
Fertility	Natural fertility is moderately low, as indicated by the exchangeable cation data. Although the subsoil has high nutrient retention capacity, the surface soil relies on organic matter for its capacity. Ironstone ties up phosphorus, although concentrations are high at the sampling site. Levels of all other tested elements are high.
pH	Acidic at the surface, strongly alkaline with depth.
Rooting depth	Approximately 100 cm in pit, but few roots below 42 cm.
Barriers to root growth	
Physical:	The tight slowly permeable clay subsoil restricts root density.
Chemical:	The leached infertile 5-17 cm sandy layer and high sodicity from 42 cm limit root growth.
Water holding capacity	About 70 mm in the rootzone.
Seedling emergence:	Good.
Workability:	Firm surface is easily worked, but ironstone gravel is abrasive.
Erosion Potential	
Water:	Low.
Wind:	Moderate. Maintain surface cover to prevent erosion.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)			CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	Ext Al mg/kg	React Fe mg/kg
											Cu	Mn	Zn		Ca	Mg	Na	K			
Paddock	5.6	4.7	0	0.11	0.7	2.7	33	120	8.4	3.1	0.88	4.5	2.4	6.1	4.09	0.69	0.15	0.25	2.5	1.7	800
											*1.5	-	*2.2								
0-5	7.1	6.3	0	0.12	0.6	2.3	44	130	9.7	1.9	-	-	-	5.6	4.06	0.73	0.14	0.27	2.5	<1	770
5-15	5.7	4.6	0	0.06	0.3	1.1	16	54	5.2	1.4	-	-	-	2.5	1.64	0.31	0.15	0.11	-	1.6	530
15-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-25	7.7	7.1	1	0.38	1.4	0.8	4	630	15	1.5	-	-	-	20.4	7.07	6.96	2.82	1.50	13.8	<1	1810
25-42	8.9	8.1	1	0.47	1.0	0.4	4	950	17	2.4	-	-	-	25.2	6.95	9.77	4.74	2.10	18.8	<1	700
42-100	9.7	8.5	27	0.60	1.3	0.3	2	940	19	5.9	-	-	-	19.5	4.66	8.19	6.70	1.90	34.4	<1	390
100-155	9.7	8.5	11	0.61	1.0	0.1	2	760	12	7.3	-	-	-	17.1	3.05	7.29	7.32	1.55	42.8	<1	340
155-185	9.6	8.4	9	0.57	0.9	0.1	2	610	13	7.4	-	-	-	15.8	2.49	6.09	6.90	1.16	43.7	<1	340

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

* EDTA trace element analyses for paddock sample.

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.