

SANDY LOAM OVER RED CLAY

General Description: *Hard setting sandy loam abruptly overlying a strongly structured red clay, calcareous with depth.*

Landform: Alluvial plains and outwash fans.

Substrate: Coarsely structured red clay (Hindmarsh Clay equivalent).

Vegetation:



Type Site: Site No.: CL911

1:50,000 sheet: 6629-3 (Hamley Bridge) Hundred: Grace
 Annual rainfall: 375 mm Sampling date: 08/03/91
 Landform: Very gently inclined plain, 1% slope
 Surface: Hard setting with no stones

Soil Description:

Depth (cm)	Description
0-8	Brown firm fine sandy loam with weak granular structure. Abrupt to:
8-35	Reddish brown hard medium clay with strong medium polyhedral structure. Gradual to:
35-73	Yellowish red hard very highly calcareous medium clay with strong medium angular blocky structure and 20-50% fine carbonate segregations. Gradual to:
73-100	Reddish brown very hard moderately calcareous medium clay with strong very coarse angular blocky structure.



Classification: Sodic, Calcic, Red Chromosol*; thin, non-gravelly, loamy / clayey, deep
OR Calcic, Subnatric, Red Sodosol*; thin, non-gravelly, loamy / clayey, deep
 * no exchangeable cation data

Summary of Properties

Drainage: Moderately well drained. The soil rarely remains wet for more than a week following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately high. Nutrient retention capacity is affected by surface clay (about 20%) and organic matter contents, both of which are satisfactory. Nutrient fixation in the surface soil is minimal due to neutral pH, but in the calcareous subsoil, zinc and manganese are effectively unavailable.

pH: Neutral at the surface, alkaline with depth.

Rooting depth: 79 cm in pit.

Barriers to root growth:

Physical: The substrate clay (from 73 cm) is the only significant physical barrier (high strength and coarse aggregation).

Chemical: High boron concentrations and moderate salinity prevent deeper root growth.

Water holding capacity: Approximately 105 mm in the root zone.

Seedling emergence: Fair. The hard setting and sealing surface prevents a percentage of seedlings from breaking through. This can be overcome by gypsum applications and building up organic matter.

Workability: The hard sandy loam surface tends to shatter if worked too dry, and puddle if worked too wet.

Erosion Potential

Water: Low.

Wind: Low.

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 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	
0-8	7.1	6.5	0	0.17	-	1.32	48	740	-	-	0.7	15	22.0	0.6	-	-	-	-	-	-
8-35	8.6	7.5	2	0.25	-	0.56	5	290	-	-	1.1	11	4.6	0.1	-	-	-	-	-	-
35-73	8.9	7.9	17	0.41	-	0.28	2	160	-	4	1.0	8.6	1.5	0.0	-	-	-	-	-	-
73-100	9.0	8.2	8	1.29	-	0.11	1	290	-	39	0.8	4.4	0.6	0.0	-	-	-	-	-	-