

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 mapsheet: | 6629-3 (Hamley Bridge) |
| | Hundred: | Grace | Easting: | 275400 |
| | Section: | 422 | Northing: | 6193250 |
| | Sampling date: | 08/03/91 | Annual rainfall: | 410 mm average |

Very gently inclined plain, 1% slope. Hard setting surface 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. |
| Waterholding capacity: | Approximately 105 mm in the rootzone. |
| 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 | - | - | - | - | - | - |

Further information: [DEWNR Soil and Land Program](#)

