

# CLAY LOAM OVER POORLY STRUCTURED RED CLAY

**General Description:** *Hard setting clay loam abruptly overlying a coarsely structured dispersive red clay, weakly calcareous at depth*

**Landform:** Alluvial flats and outwash fans.

**Substrate:** Fine textured alluvium.

**Vegetation:**



**Type Site:** Site No.: CM903

1:50,000 sheet: 6630-4 (Spalding)      Hundred: Ayres  
Annual rainfall: 500 mm      Sampling date: March 1990  
Landform: Flat between undulating low hills, 1% slope  
Surface: Hard setting with no stones

## Soil Description:

| Depth (cm) | Description  |
|------------|--|
| 0-10       | Reddish brown hard clay loam with weak granular structure. Clear to:   |
| 10-20      | Yellowish red hard clay loam with weak granular structure. Abrupt to:  |
| 20-45      | Dark reddish brown hard medium clay with strong very coarse prismatic structure. Gradual to:                     |
| 45-75      | Dark reddish brown hard medium heavy clay with strong very coarse prismatic structure. Gradual to:               |
| 75-95      | Reddish brown hard moderately calcareous light medium clay with moderate coarse prismatic structure. Gradual to: |
| 95-120     | Red hard slightly calcareous light medium clay with strong coarse angular blocky structure.                      |



**Classification:** Hypocalcic, Red Sodosol; medium, non-gravelly, clay loamy / clayey, deep

## *Summary of Properties*

- Drainage:** Moderately well drained. Water perches on the dispersive clay subsoil for up to a week following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is high due to relatively high surface clay content and organic matter levels.
- pH:** Slightly alkaline at the surface (possible road dust effect), to alkaline with depth.
- Rooting depth:** Lucerne roots continuing below 120 cm.
- Barriers to root growth:**
- Physical:** The hard coarsely structured subsoil restricts root density by confining most roots to aggregate surfaces, rather than allowing penetration.
  - Chemical:** There are no apparent chemical barriers.
- Water holding capacity:** Approximately 150 mm in the upper 120 cm of soil.
- Seedling emergence:** Fair. Hard setting surface tends to seal over, providing a barrier to emerging seedlings.
- Workability:** Fair. The hard poorly structured surface tends to shatter if worked too dry, and to puddle if worked too wet.

## **Erosion Potential**

- Water:** Low.
- Wind:** Low.

## *Laboratory Data*

| Depth<br>cm | pH<br>H <sub>2</sub> O | pH<br>CaCl <sub>2</sub> | CO <sub>3</sub><br>% | EC 1:5<br>dS/m | ECe<br>dS/m | Org.C<br>% | Avail. P<br>mg/kg | Boron<br>mg/kg |
|-------------|------------------------|-------------------------|----------------------|----------------|-------------|------------|-------------------|----------------|
| 0-10        | 7.9                    | 7.0                     | 0                    | 0.15           | -           | 1.37       | 46                | 2.1            |
| 10-20       | 7.9                    | 6.9                     | 0                    | 0.10           | -           | 0.60       | 12                | 1.8            |
| 20-45       | 7.8                    | 6.6                     | 0                    | 0.17           | -           | 0.49       | 4                 | 7.8            |
| 45-75       | 8.8                    | 7.5                     | -                    | 0.25           | -           | 0.41       | 7                 | 11.2           |
| 75-95       | 9.2                    | 7.8                     | 3                    | 0.30           | -           | 0.19       | 6                 | 11.4           |
| 95-120      | 9.0                    | 7.9                     | -                    | 0.40           | -           | 0.21       | 7                 | 11.1           |