

## DEEP CALCAREOUS SANDY LOAM

**General Description:** *Calcareous loamy sand to sandy loam grading to a very highly calcareous sandy clay loam with variable rubble, continuing below 100 cm*

**Landform:** Gently undulating plain.

**Substrate:** Very highly calcareous medium grained Woorinen Formation deposits.

**Vegetation:**



|                   |                |           |                    |                    |
|-------------------|----------------|-----------|--------------------|--------------------|
| <b>Type Site:</b> | Site No.:      | CY026     | 1:50,000 mapsheet: | 6430-1 (Broughton) |
|                   | Hundred:       | Tickera   | Easting:           | 756900             |
|                   | Section:       | 121       | Northing:          | 6262400            |
|                   | Sampling date: | 20/7/1994 | Annual rainfall:   | 345 mm average     |

Upper slope of 1%. Loose surface with no stones.

### Soil Description:

| <i>Depth (cm)</i> | <i>Description</i>   |
|-------------------|--|
| 0-10              | Dark brown loose highly calcareous loamy sand. Clear to:   |
| 10-22             | Dark brown soft massive highly calcareous sandy loam. Diffuse to:  |
| 22-75             | Strong brown and dark brown soft massive very highly calcareous light sandy clay loam. Gradual to:       |
| 75-115            | Reddish yellow firm massive very highly calcareous light clay with minor calcrete fragments. Diffuse to: |
| 115-170           | Reddish yellow firm massive sandy clay loam with minor calcrete fragments.                               |



**Classification:** Endohypersodic, Regolithic, Hypercalcic Calcarosol; medium, non-gravelly, sandy / clayey, deep



## Summary of Properties

- Drainage:** Well drained.
- Fertility:** Surface fertility relies on organic matter levels which are adequate, and on phosphorus levels which are good at this site. Nutrient availability problems due to high carbonate content and high pH are inherent to this soil. The soil's capacity to retain nutrients is likely to be moderate, based on the clay content and CEC of the subsoil.
- pH:** Alkaline at the surface, highly alkaline at depth.
- Rooting depth:** Roots to 75 cm in pit, but few below 22 cm.
- Barriers to root growth:**
- Physical:** There are no physical barriers.
  - Chemical:** High pH and boron concentrations from 75 cm and high sodicity in deeper subsoil prevent further root growth. Trace element deficiencies are likely in the subsoil.
- Waterholding capacity:** Approximately 80 mm in rootzone, but about half of this is effectively unavailable due to low root density in the subsoil.
- Seedling emergence:** Good. Organic matter levels need to be maintained to preserve surface structure.
- Workability:** Good.
- Erosion Potential:**
- Water:** Low.
  - Wind:** Moderately low. High organic matter levels provide greater soil stability.

## Laboratory Data

| Depth<br>cm | pH<br>H <sub>2</sub> O | pH<br>CaCl <sub>2</sub> | CO <sub>3</sub><br>% | EC1:5<br>dS/m | ECe<br>dS/m | Org.C<br>% | Avail.<br>P<br>mg/kg | Avail.<br>K<br>mg/kg | SO <sub>4</sub><br>mg/kg | Boron<br>mg/kg | Trace Elements mg/kg<br>(DTPA) |    |    |    | CEC<br>cmol<br>(+)/kg | Exchangeable Cations<br>cmol(+)/kg |      |      |      | ESP  |
|-------------|------------------------|-------------------------|----------------------|---------------|-------------|------------|----------------------|----------------------|--------------------------|----------------|--------------------------------|----|----|----|-----------------------|------------------------------------|------|------|------|------|
|             |                        |                         |                      |               |             |            |                      |                      |                          |                | Cu                             | Fe | Mn | Zn |                       | Ca                                 | Mg   | Na   | K    |      |
| Paddock     | 8.5                    | 7.8                     | 3.5                  | 0.2           | 0.6         | 1.1        | 41                   | 492                  | 5.1                      | 1.9            | -                              | -  | -  | -  | 6.8                   | 6.38                               | 1.28 | 0.05 | 0.94 | 0.8  |
| 0-10        | 8.5                    | 7.8                     | 5.0                  | 0.1           | 0.7         | 1.4        | 46                   | 330                  | 5.3                      | 2.8            | -                              | -  | -  | -  | 8.2                   | 7.88                               | 1.49 | 0.05 | 1.09 | 0.6  |
| 10-22       | 8.6                    | 7.9                     | 8.7                  | 0.1           | 0.7         | 1.6        | 5                    | 190                  | 6.1                      | 3.6            | -                              | -  | -  | -  | 13.5                  | 11.82                              | 3.21 | 0.11 | 0.64 | 0.8  |
| 22-75       | 9.3                    | 8.3                     | 13.7                 | 0.2           | 0.7         | 0.4        | 3                    | 97                   | 6.3                      | 4.4            | -                              | -  | -  | -  | 8.6                   | 3.75                               | 6.72 | 0.48 | 0.29 | 5.6  |
| 75-115      | 9.8                    | 8.4                     | 23.5                 | 0.5           | 1.7         | 0.4        | 3                    | 207                  | 29.4                     | 16.2           | -                              | -  | -  | -  | 7.1                   | 1.35                               | 4.19 | 1.00 | 0.75 | 14.1 |
| 115-170     | 9.8                    | 8.4                     | 18.0                 | 0.5           | 1.9         | 0.1        | 4                    | 177                  | 42.6                     | 17.9           | -                              | -  | -  | -  | 7.0                   | 1.44                               | 2.65 | 1.94 | 0.56 | 27.8 |

**Note:** Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.  
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

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

