

## SANDY LOAM OVER PEDARIC RED CLAY

**General Description:** *Sandy loam to sandy clay loam over a well structured very friable red clay, calcareous at depth with variable gypsum segregations*

**Landform:** Alluvial plain.

**Substrate:** Alluvial clay.

**Vegetation:** Chenopod shrubland of *Maireana pyramidata*.



**Type Site:** Site No.: CU010

1:50,000 sheet: 6732-2 (Pitcairn)

Hundred:

Out of Hundreds

Annual rainfall: 270 mm

Sampling date:

17/06/92

Landform: Flat, 0% slope

Surface: Hard setting and scalded with no stones

### Soil Description:

| Depth (cm) | Description  |
|------------|--|
| 0-12       | Dark reddish brown friable sandy loam with platy structure. Abrupt to:   |
| 12-25      | Light reddish brown hard fine sandy clay loam with coarse prismatic structure. Sharp to:   |
| 25-55      | Dark reddish brown friable medium clay with strong coarse prismatic breaking to fine polyhedral structure. Clear to:                                       |
| 55-80      | Yellowish red firm highly calcareous fine sandy clay with strong platy breaking to polyhedral structure and 2-10% fine carbonate segregations. Gradual to: |
| 80-120     | Yellowish red hard massive slightly calcareous light medium clay with minor veins of fine carbonate and gypsum. Gradual to:                                |
| 120-220    | Yellowish red firm slightly calcareous medium clay with strong coarse prismatic structure and 2-10% gravel (60-200 mm).                                    |



**Classification:** Calcic, Pedaric, Red Sodosol; medium, non gravelly, loamy / clayey, deep

## Summary of Properties

|                                |  |
|--------------------------------|--|
| <b>Drainage</b>                | Imperfect. Soil may remain wet for several weeks following heavy or prolonged rainfall.  |
| <b>Fertility</b>               | Inherent fertility is moderate, as indicated by the exchangeable cation data. Levels of all tested nutrient elements are satisfactory, although low organic carbon suggests that nitrogen levels are poor. Zinc concentrations are marginal by agricultural standards. Critical nutrient levels for chenopods are not known. |
| <b>pH</b>                      | Moderately alkaline throughout.  |
| <b>Rooting depth</b>           | 45 cm in pit.  |
| <b>Barriers to root growth</b> |  |
| <b>Physical:</b>               | Hard subsurface layer (12-25 cm) may impede root development. Substrate clay (from 120 cm) will limit deep root growth.  |
| <b>Chemical:</b>               | High salinity from 25 cm and high sodicity from 55 cm restrict root development of agricultural plants.  |
| <b>Water holding capacity</b>  | Approximately 60 mm in the root zone (top 45 cm). Perennial species with deeper root systems have access to more moisture.   |
| <b>Seedling emergence:</b>     | Impeded by hard setting scalded surface.   |
| <b>Workability:</b>            | Good, although shallow depth to sodic clay is a hazard if working deeply.  |
| <b>Erosion Potential</b>       |  |
| <b>Water:</b>                  | Moderately low. Soil is highly erodible, but slope is very low.  |
| <b>Wind:</b>                   | Moderately low.  |

## 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> -S<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    |     |
| 0-12        | 8.2                    | 7.4                     | 0.2                  | 0.11          | 0.9         | 0.37       | 43                   | 608                  | -                           | 0.8            | 1.0                            | 3.0 | 9.6 | 0.4 | 10.1                  | 5.3                                | 2.1 | 1.25 | 1.21 | 12  |
| 12-25       | 8.0                    | 7.4                     | 0.1                  | 0.76          | 9.4         | 0.40       | 21                   | 470                  | -                           | 0.9            | 1.8                            | 5.8 | 9.9 | 0.4 | 13.5                  | 7.2                                | 2.3 | 2.02 | 0.93 | 15  |
| 25-55       | 8.0                    | 7.7                     | 0.1                  | 1.94          | 14.5        | 0.50       | 14                   | 361                  | -                           | 2.1            | 2.7                            | 7.5 | 5.6 | 0.3 | 26.0                  | 11.3                               | 7.0 | 5.34 | 1.14 | 21  |
| 55-80       | 8.9                    | 8.4                     | 9.0                  | 1.59          | 11.5        | 0.19       | 8                    | 253                  | -                           | 5.7            | 1.3                            | 2.6 | 1.9 | 0.2 | 28.9                  | 10.7                               | 8.5 | 8.64 | 0.88 | 30  |
| 80-120      | 8.5                    | 8.1                     | 1.1                  | 1.98          | 15.4        | 0.21       | 8                    | 166                  | -                           | 5.4            | 1.1                            | 4.5 | 2.2 | 0.2 | 23.4                  | 9.1                                | 7.4 | 6.73 | 0.62 | 29  |
| 120-160     | 8.2                    | 7.8                     | 0.2                  | 2.53          | 16.3        | 0.13       | 21                   | 237                  | -                           | 6.3            | 1.3                            | 5.8 | 2.6 | 0.2 | 28.1                  | 9.3                                | 8.6 | 7.60 | 0.80 | 27  |
| 160-220     | 8.6                    | 8.2                     | 5.0                  | 2.01          | 17.1        | 0.08       | 24                   | 197                  | -                           | 4.4            | 1.3                            | 7.5 | 2.2 | 0.2 | 24.8                  | 8.2                                | 7.5 | 6.97 | 0.70 | 28  |

**Note:** Paddock sample bulked from 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.