

SAND OVER RED SANDY CLAY LOAM

General Description: *Soft sand over a red sandy clay loam, calcareous with depth*

Landform: Undulating dunefield on a gently sloping plain.

Substrate: Calcreted calcarenite of the Bridgewater Formation.

Vegetation: Mallee



| | | | | |
|-------------------|----------------|------------|--------------------|----------------|
| Type Site: | Site No.: | MM066 | 1:50,000 mapsheet: | 6927-3 (Jabuk) |
| | Hundred: | Peake | Easting: | 410500 |
| | Section: | 55 | Northing: | 6078250 |
| | Sampling date: | 01/09/1992 | Annual rainfall: | 395 mm average |

Flat between sandhills. Loose surface, no stones.

Soil Description:

| Depth (cm) | Description |
|------------|---|
| 0-18 | Dark brown loose single grain loamy sand. Abrupt to: |
| 18-23 | Brown loose single grain sand. Clear to: |
| 23-35 | Orange very soft single grain light sandy loam. Sharp to: |
| 35-55 | Yellowish red firm light sandy clay with coarse columnar structure. Clear to: |
| 55-100 | Laminar calcrete pan with very highly calcareous reddish yellow sandy clay loam between plates. Diffuse to: |
| 100-180 | Yellowish red very highly calcareous sandy clay loam with more than 50% calcrete fragments (20-60 mm). |



Classification: Haplic, Petrocalcic, Red Chromosol; thick, non-gravelly, sandy / clay loamy, moderate



Summary of Properties

- Drainage:** Well drained. Soil rarely remains wet for more than a few days.
- Fertility:** Inherent fertility is moderately low, as indicated by the exchangeable cation data. Phosphorus and nitrogen are usually deficient. Zinc and copper are deficient at the sampling site. Manganese may be needed for lupins. Organic carbon levels are low.
- pH:** Neutral to alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 70 cm in pit.
- Barriers to root growth:**
- Physical:** The poorly structured subsoil prevents satisfactory root distribution. The calcrete severely restricts root penetration. Some root growth in upper 15 cm of pan.
 - Chemical:** No chemical barriers above the calcrete. Low nutrient status and retention capacity limit root density.
- Waterholding capacity:** 60 mm in the rootzone.
- Seedling emergence:** Can be reduced by water repellence in dry seasons.
- Workability:** Loose / soft surface is easily worked.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Moderately low to moderate.

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 | Boron mg/kg | Trace Elements mg/kg (DTPA) | | | | CEC cmol (+)/kg | Exchangeable Cations cmol(+)/kg | | | | ESP |
|-------------|------------------------|-------------------------|----------------------|---------------|-------------|------------|----------------------|----------------------|----------------|--------------------------------|----|------|------|-----------------------|------------------------------------|------|-------|------|------|
| | | | | | | | | | | Cu | Fe | Mn | Zn | | Ca | Mg | Na | K | |
| Paddock | 7.3 | 6.7 | 1 | 0.04 | 0.36 | 0.6 | 5 | 170 | <0.40 | <0.05 | - | 4.2 | 0.25 | 3.9 | 3.19 | 0.52 | 0.06 | 0.34 | 1.5 |
| 0-18 | 8.1 | 7.2 | 1 | 0.06 | 0.46 | 0.6 | 5 | 160 | 0.52 | <0.05 | - | 3.6 | 0.25 | 4.9 | 4.01 | 0.60 | 0.05 | 0.33 | 1.0 |
| 18-23 | 8.9 | 8.0 | 1 | 0.07 | 0.41 | 0.2 | 2 | 130 | 0.63 | <0.05 | - | 1.5 | 0.25 | 2.9 | 2.98 | 0.47 | 0.04 | 0.30 | 1.4 |
| 23-35 | 9.0 | 8.0 | 1 | 0.08 | 0.39 | 0.2 | 2 | 190 | 0.66 | 0.06 | - | 0.76 | 0.48 | 3.3 | 3.17 | 0.67 | 0.05 | 0.39 | 1.5 |
| 35-55 | 8.8 | 7.9 | 1 | 0.11 | 0.51 | 0.2 | <2 | 700 | 2.9 | 0.1 | - | 0.47 | 0.12 | 12.4 | 6.67 | 3.59 | 0.28 | 1.84 | 2.3 |
| 55-100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 100-150 | 10.0 | 8.4 | 58 | 0.45 | 2.64 | 0.2 | <2 | 620 | 7.5 | 0.22 | - | 0.76 | 0.21 | 6.3 | 1.49 | 2.47 | 2.73 | 1.37 | 43.3 |
| 150-180a | 10.1 | 8.4 | 59 | 0.47 | 3.09 | 0.1 | <2 | 600 | 7.4 | 0.20 | - | 0.71 | 0.16 | 6.1 | 1.37 | 2.27 | 3.04 | 1.27 | 49.8 |
| 150-180b | 9.8 | 8.5 | 64 | 0.75 | 2.2 | <0.1 | <2 | 1700 | 29 | 0.15 | - | 1.1 | 0.11 | 23.0 | 2.35 | 6.59 | 10.10 | 4.01 | 43.9 |

- Note:** Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.
 150-180a = calcrete fragments. 150-180b = sandy clay loam matrix.
 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](#)

