

DEEP RUBBLY CALCAREOUS LOAM

General Description: *Highly calcareous loam with increasing carbonate and rubble content at depth, continuing below 100 cm*

Landform: Gently undulating plain.

Substrate: Very highly calcareous medium to fine grained windblown Woorinen Formations sediments.

Vegetation:



Type Site: Site No.: CY013

1:50,000 sheet: 6428-3 (Minlaton)

Hundred: Minlacowie

Annual rainfall: 425 mm

Sampling date: 10/12/92

Landform: Gentle slope of 1%

Surface: Hard setting with no stones

Soil Description:

| Depth (cm) | Description |
|------------|---|
| 0-12 | Dark brown firm highly calcareous loam with weak coarse subangular blocky structure. Clear to: |
| 12-40 | Dark brown friable massive highly calcareous loam with more than 50% hard carbonate fragments and nodules (20-200 mm). Clear to: |
| 40-70 | Dark yellowish brown soft massive very highly calcareous fine sandy loam with 10-20% carbonate nodules (6-20 mm). Gradual to: |
| 70-132 | Very pale brown soft massive very highly calcareous fine sandy clay loam with more than 50% hard carbonate nodules (20-200 mm). Gradual to: |
| 132-150 | Very pale brown friable massive very highly calcareous fine sandy light clay. |



Classification: Hypervescent, Regolithic, Lithocalcic Calcarosol; medium, non-gravelly, loamy / clay loamy, deep

Summary of Properties

| | |
|--------------------------------|--|
| Drainage | Well drained. The soil never remains wet for more than a day or so at a time. |
| Fertility | The soil's natural capacity to retain nutrients is moderate as indicated by the exchangeable cation data. 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 the high free lime content (CaCO ₃ %) and high pH are characteristic of these soils. Zinc and copper deficiencies can be expected from time to time. Potassium levels are adequate. |
| pH | Alkaline throughout. |
| Rooting depth | Roots to 120 cm in pit. |
| Barriers to root growth | |
| Physical | There are no physical barriers. |
| Chemical | High pH and sodicity at depth restrict root growth. Low nutrient availability is also a contributing factor. |
| Water holding capacity | Approximately 110 mm in rootzone, but about a third is effectively unavailable due to low root density in the subsoil. |
| Seedling emergence | Good. |
| Workability | Good. |
| Erosion Potential | |
| Water | Low. |
| Wind | 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 | SO ₄ -S 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 | 8.1 | 7.7 | 12 | 0.22 | 0.82 | 1.8 | 51 | 1100 | - | 2.1 | 0.75 | 4.7 | 11 | 0.45 | 26.9 | 22.2 | 2.75 | 0.25 | 3.30 | 1.0 |
| 0-12 | 8.1 | 7.7 | 14 | 0.24 | 0.92 | 1.8 | 59 | 1100 | - | 2.5 | 0.65 | 4.7 | 11 | 0.38 | 28.0 | 23.2 | 2.90 | 0.21 | 3.30 | 0.7 |
| 12-40 | 8.4 | 7.8 | 38 | 0.15 | 0.37 | 0.80 | 4.1 | 400 | - | 2.7 | 0.74 | 7.3 | 3.4 | 0.09 | 15.3 | 13.5 | 2.56 | 0.33 | 0.87 | 2.2 |
| 40-70 | 8.6 | 7.9 | 51 | 0.16 | 0.45 | 0.51 | <2.0 | 230 | - | 2.9 | 0.71 | 4.2 | 1.8 | 0.05 | 10.2 | 7.71 | 3.12 | 0.50 | 0.56 | 4.9 |
| 70-132 | 9.1 | 8.0 | 55 | 0.39 | 1.85 | 0.32 | <2.0 | 510 | - | 6.2 | 0.58 | 2.7 | 0.95 | 0.06 | 9.0 | 3.93 | 4.37 | 2.29 | 1.37 | 25.4 |
| 132-150 | 9.5 | 8.4 | 61 | 0.95 | 5.93 | 0.06 | <2.0 | 620 | - | 15.9 | 0.39 | 1.7 | 0.48 | 0.10 | 8.0 | 1.34 | 3.69 | 4.43 | 1.41 | 55.4 |

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