

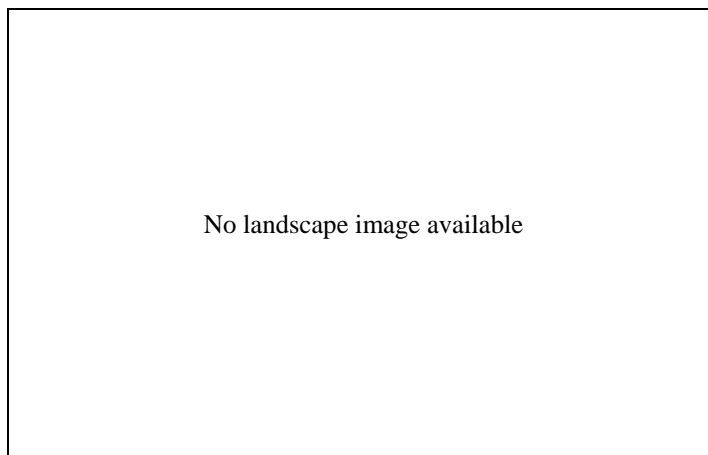
IRONSTONE GRAVELLY LOAM OVER RED CLAY (Ironstone gravelly red brown earth)

General Description: *Loam over red structured clay with minor to moderate ironstone gravel throughout and calcareous with depth*

Landform: Undulating rises.

Substrate: Heavy clay.

Vegetation:



Type Site: Site No.: EL007

| | | | |
|------------------|---|----------------|----------|
| 1:50,000 sheet: | 6029-1 (Cockaleechee) | Hundred: | Shannon |
| Annual rainfall: | 410 mm | Sampling date: | 26/03/92 |
| Landform: | Gentle slope of 2-3% | | |
| Surface: | Hard setting with 2-10% calcrete (20-60 mm) | | |

Soil Description:

| Depth (cm) | Description |
|------------|--|
| 0-5 | Orange firm clay loam with weak subangular blocky structure and 2-10% ironstone concretions. Sharp to: |
| 5-23 | Red hard medium clay with strong coarse prismatic breaking to fine angular blocky structure and 2-10% ironstone concretions. Clear to: |
| 23-33 | Yellowish red hard very highly calcareous medium clay with moderate subangular blocky structure and 2-10% ironstone concretions. Clear to: |
| 33-110 | Reddish yellow hard massive very highly calcareous medium clay with 2-10% ironstone concretions. Clear to: |
| 110-180 | Red very hard heavy clay with strong angular blocky structure, 2-10% ironstone concretions and 20-50% fine carbonate segregations. |



Classification: Sodic, Hypercalcic, Red Chromosol; thin, slightly gravelly, clay loamy / clayey, very deep

Summary of Properties

| | |
|--------------------------------|---|
| Drainage | Moderately well drained. Soil rarely remains wet for more than a few days. |
| Fertility | Inherent fertility is moderate, as indicated by the exchangeable cation data. Nutrient retention capacity is favourable due to high clay and organic matter contents of surface soil. All tested nutrient elements are well supplied. |
| pH | Slightly alkaline at the surface, strongly alkaline with depth. |
| Rooting depth | 33 cm in pit. |
| Barriers to root growth | |
| Physical: | The hard clayey subsoil restricts root growth to some extent. |
| Chemical: | High pH and sodicity from 33 cm limit deeper root growth. |
| Water holding capacity | Approximately 45 mm in the root zone. |
| Seedling emergence: | Fair. Hard setting surface seals over and may reduce emergence percentages. |
| Workability: | Fair. Limited moisture range over which soil can be effectively cultivated. |
| Erosion Potential | |
| Water: | Moderately low. |
| Wind: | Low. |

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 | |
| 0-5 | 7.7 | 7.4 | 9 | 0.2 | 0.7 | 1.57 | 72 | - | 8 | 3.5 | 1.04 | 12.1 | 4.22 | 0.82 | 23.8 | 19.1 | 3.2 | 0.49 | 2.06 | 2.1 |
| 5-23 | 7.7 | 7.5 | 4 | 0.4 | 1.8 | 0.56 | 8 | - | 9 | 3.9 | 0.33 | 16.7 | 0.57 | 0.45 | 38.3 | 29.1 | 6.8 | 1.07 | 1.43 | 2.8 |
| 23-33 | 8.2 | 7.9 | 30 | 0.4 | 1.7 | - | - | - | 8 | 4.7 | 0.35 | 7.8 | 0.53 | 0.38 | 29.7 | 19.9 | 7.3 | 1.83 | 1.19 | 6.2 |
| 33-110 | 9.5 | 8.4 | 41 | 0.6 | 1.8 | - | - | - | 100 | 6.7 | 0.35 | 7.8 | 0.53 | 0.33 | 18.1 | 4.6 | 6.9 | 6.91 | 1.20 | 38.2 |
| 110-180 | 9.5 | 8.3 | 27 | 0.7 | 2.7 | - | - | - | 106 | 9.8 | 0.48 | 12.9 | 1.09 | 0.43 | 19.4 | 3.6 | 6.5 | 9.06 | 1.74 | 46.7 |

Note: 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