

WET HIGHLY LEACHED SAND

General Description: *Bleached sand with a dark brown weakly cemented subsoil and a water table within 100 cm*

Landform: Gently undulating rises.

Substrate: Sand, usually windblown.

Vegetation:



Type Site: Site No.: CK006

| | | | |
|------------------|---|----------------|----------|
| 1:50,000 sheet: | 6326-3 (Vivonne) | Hundred: | Newland |
| Annual rainfall: | 600 mm | Sampling date: | 09/03/93 |
| Landform: | Valley flat between gently undulating rises, 1% slope | | |
| Surface: | Soft with no stones. Water table at 95 cm. | | |

Soil Description:

| <i>Depth (cm)</i> | <i>Description</i> |
|-------------------|--|
| 0-12 | Black soft single grained light loamy sand. Clear to: |
| 12-30 | White soft single grained sand. Diffuse to: |
| 30-52 | White soft single grained sand. Abrupt but tongued (depth varies from 52 to 75 cm) boundary to: |
| 52-70 | Ortstein pan (coffee rock) – moderately cemented iron – organic pan in the upper 5 cm, over a dark reddish brown and strong brown firm massive clayey sand with 20-50% organic - aluminous - ferruginous nodules (2-6 mm). Clear to: |
| 70-95 | Yellowish brown and dark brown soft massive clayey sand with more than 50% ferruginous - organic segregations. |
| 95- | Water table. |



Classification: Parapanic, Humic/Humosesquic, Semiaquic Podosol; medium, non-gravelly, sandy/sandy, deep

Summary of Properties

| | |
|--------------------------------|---|
| Drainage | Poorly drained, due to shallow water table (95 cm at time of sampling - 9 th March, 1993). The soil may remain wet for several months. |
| Fertility | Natural fertility is very low, as indicated by the exchangeable cation data. Due to the low clay content, nutrient retention capacity relies on high organic matter levels (2% organic carbon minimum). Apart from nitrogen and phosphorus, this soil is susceptible to potassium, calcium, magnesium, sulphur, zinc, copper, manganese, molybdenum and boron deficiencies. |
| pH | Strongly acidic at surface, acidic with depth. |
| Rooting depth | 70 cm in pit, but few roots below 30 cm. |
| Barriers to root growth | |
| Physical: | Hard coffee rock restricts deeper root growth. No root growth below water table. |
| Chemical: | Low nutrient status and retention capacity, especially in the subsoil, limits root growth. |
| Water holding capacity | 40 mm in root zone (low). |
| Seedling emergence: | Good. |
| Workability: | Good. Soft surface is easily worked, although wetness limits accessibility. |
| 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 | SO ₄ mg/kg | Boron mg/kg | Trace Elements mg/kg (DTPA) | | | | CEC cmol (+)/kg | Exchangeable Cations cmol(+)/kg | | | | ESP | Exch Al cmol (+)/kg |
|-------------|------------------------|-------------------------|----------------------|---------------|-------------|------------|----------------------|----------------------|--------------------------|----------------|--------------------------------|----|------|-----|-----------------------|------------------------------------|------|------|------|-----|------------------------------|
| | | | | | | | | | | | Cu | Fe | Mn | Zn | | Ca | Mg | Na | K | | |
| Paddock | 4.7 | 4.1 | 0 | 0.12 | 0.81 | 2.4 | 27 | 86 | - | 0.5 | 0.4 | 57 | 0.7 | 0.7 | 8.1 | 2.66 | 0.65 | 0.28 | 0.09 | 3.5 | 0.18 |
| 0-12 | 4.6 | 4.1 | 0 | 0.11 | 0.82 | 2.6 | 9 | 55 | - | 0.4 | 0.4 | 45 | 0.6 | 0.3 | 7.5 | 2.99 | 0.67 | 0.27 | 0.02 | 3.6 | 0.12 |
| 12-30 | 4.3 | 3.7 | 0 | 0.04 | 0.33 | 0.66 | 8 | 23 | - | 0.2 | <0.1 | 13 | <0.1 | 0.1 | 1.2 | 0.34 | 0.09 | 0.11 | 0.02 | na | 0.09 |
| 30-52 | 4.7 | 4.1 | 0 | 0.02 | 0.15 | 0.20 | 8 | 31 | - | 0.1 | <0.1 | 5 | <0.1 | 0.8 | 0.3 | 0.10 | 0.04 | 0.09 | 0.02 | na | 0.05 |
| 52-70 | 4.9 | 4.5 | 0 | 0.05 | 0.28 | 1.8 | 6 | 39 | - | 0.4 | 0.1 | 36 | <0.1 | 0.1 | 7.8 | 0.56 | 0.14 | 0.22 | 0.02 | 2.8 | 2.05 |
| 70-95 | 5.0 | 4.8 | 0 | 0.06 | 0.26 | 0.67 | 5 | 39 | - | 0.4 | <0.1 | 18 | <0.1 | 0.1 | 3.3 | 0.18 | 0.11 | 0.16 | 0.02 | 4.8 | 0.63 |

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