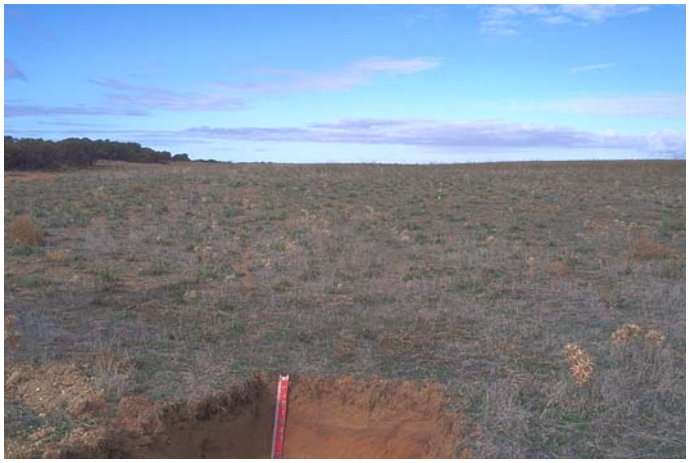
# SAND OVER BROWN SANDY CLAY

***General Description:*** *Sand to loamy sand over a brown sandy clay loam to sandy clay, calcareous from shallow depth*

**Landform:** Gently undulating plains with extensive sandhills.

**Substrate:** Grey and yellow massive sandy clay (Parilla Sand equivalent)

**Vegetation:** Mallee.



**Type Site:** Site No.: MM125

| | | | |
|---|---|---|---|
| 1:50,000 sheet: | 7028-2 (Peebinga) | Hundred: | Peebinga |
| Annual rainfall: | 310 mm | Sampling date: | 22/05/96 |
| Landform: | Swale | | |
| Surface: | Loose with no stones | | |

**Soil Description:**

| *Depth (cm)* | *Description* |
|---|---|
| 0-16 | Brown loose loamy sand (recent drift). Abrupt to: |
| 16-26 | Brown soft loamy sand (recent drift). Sharp to: |
| 26-46 | Orange soft loamy sand. Sharp to: |
| 46-50 | Light brown (bleached) soft loamy sand. Clear to: |
| 50-65 | Orange and light yellowish brown massive calcareous light sandy clay loam. Clear to: |
| 65-80 | Reddish yellow hard calcareous fine sandy light clay with weak coarse blocky structure and 20-50% fine carbonate. Clear to: |
| 80-115 | Light yellowish brown and olive brown hard very highly calcareous light medium clay with moderate blocky structure. Clear to: |
| 115-155 | Pale olive and olive brown hard massive fine sandy light clay. Gradual to: |
| 155-190 | Pale olive and olive brown hard massive fine sandy light clay. |

**Classification:** Calcic, Mottled-Mesonatric, Yellow Sodosol; thick, non-gravelly, sandy / clayey, moderate

## *Summary of Properties*

**Drainage** Moderately well drained. Soil may remain wet for up to a week following heavy or prolonged rainfall.

**Fertility** Inherent fertility is low as indicated by the exchangeable cation data. At the sampling site, phosphorus, copper and zinc are all deficient. Organic carbon levels are very low.

**pH** Neutral at the surface, strongly alkaline with depth.

**Rooting depth** 80 cm in pit, but few roots below 26 cm (ie mostly in drift sand surface).

**Barriers to root growth**

**Physical:** Coarsely structured and dispersive clay prevents optimum root distribution.

**Chemical:** High pH, sodicity and boron concentrations in the subsoil impede root growth, as does low fertility of surface layers.

**Water holding capacity** Approximately 50 mm in root zone.

**Seedling emergence:** Satisfactory, although affected by water repellence in dry seasons.

**Workability:** Good - loose to soft surface is easily worked.

**Erosion Potential**

**Water:** Low.

**Wind:** Moderately low.

## *Laboratory Data*

| Depth cm | pH $H_2O$ | pH $CaC1_2$ | $CO_3$ % | 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 | 7.0 | 6.5 | 0 | 0.04 | 0.32 | 0.4 | 9 | 181 | 3 | 0.5 | 0.21 | 21 | 4.28 | 0.38 | 3.0 | 2.48 | 0.68 | 0.19 | 0.36 | 6.2 |
| | | | | | | | | | | | | | | | | | | | | |
| 0-16 | 6.9 | 6.5 | 0 | 0.07 | 0.70 | 0.5 | 11 | 190 | 4 | 0.6 | - | - | - | - | 3.5 | 2.66 | 0.67 | 0.14 | 0.34 | 4.1 |
| 16-26 | 8.2 | 7.7 | <0.1 | 0.07 | 0.49 | 0.2 | 5 | 171 | 2 | 0.7 | - | - | - | - | 3.4 | 2.07 | 0.56 | 0.18 | 0.27 | 5.3 |
| 26-46 | 7.7 | 6.9 | <0.1 | 0.03 | 0.24 | 0.3 | <4 | 166 | 1 | 0.6 | - | - | - | - | 4.0 | 2.83 | 0.61 | 0.16 | 0.33 | 3.9 |
| 46-50 | 8.3 | 7.1 | <0.1 | 0.02 | | 0.1 | <4 | 116 | 1 | 0.5 | - | - | - | - | 2.6 | 1.55 | 0.53 | 0.21 | 0.17 | na |
| 50-65 | 9.4 | 8.6 | 0.3 | 0.24 | 0.87 | 0.1 | <4 | 328 | 2 | 5.6 | - | - | - | - | 8.9 | 2.29 | 4.20 | 1.18 | 0.80 | 20.4 |
| 65-80 | 9.7 | 8.8 | 10.1 | 0.62 | 2.34 | 0.1 | <4 | 565 | 18 | 23.8 | - | - | - | - | 14.5 | 2.49 | 7.54 | 5.06 | 1.62 | 34.9 |
| 80-115 | 9.6 | 8.8 | 5.4 | 0.91 | 3.85 | 0.1 | <4 | 760 | 61 | 24.3 | - | - | - | - | 23.5 | 2.11 | 9.54 | 11.09 | 2.07 | 47.3 |
| 115-155 | 8.7 | 8.0 | <0.1 | 0.82 | 7.25 | <0.1 | <4 | 66 | 100 | 14.0 | - | - | - | - | 16.6 | 0.89 | 6.88 | 6.17 | 1.67 | 37.1 |
| 155-190 | 6.1 | 5.5 | 0 | 1.11 | 9.44 | <0.1 | 5 | 554 | 133 | 8.9 | - | - | - | - | 13.6 | 0.61 | 5.40 | 5.44 | 1.32 | 40.0 |

**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.