SANDY LOAM OVER COARSELY STRUCTURED RED CLAY

General Description: Firm to hard loamy sand to sandy loam over a coarsely structured dispersive red sandy clay to clay, calcareous with depth

Landform: Dunefields of closely spaced

> low to moderate parallel sandhills with some broader

flats.

Substrate: Coarsely structured red

heavy clay (Blanchetown

Clay equivalent).

Vegetation: Mallee.



Type Site: Site No.: MM143 1:50,000 mapsheet: 6928-1 (Caliph)

Hundred: Allen 445800 Easting: Section: Northing: 6164720

23/02/1999 Sampling date: Annual rainfall: 280 mm average

Flat with firm surface and no stones.

Soil Description:

Depth (cm) Description

0 - 13Reddish brown soft loamy sand. Abrupt to:

13-25 Red firm light sandy clay loam with coarse

columnar structure. Clear to:

25-48 Red hard light clay with coarse columnar

structure. Gradual to:

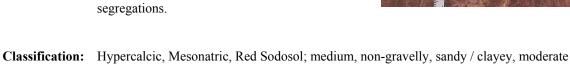
48-80 Yellowish red very hard very highly calcareous

> light clay with coarse subangular blocky structure and more than 50% fine carbonate segregations.

Diffuse to:

80-170 Red hard medium clay with coarse subangular

blocky structure and 20-50% fine carbonate







Soil Characterisation Site data sheet

Summary of Properties

Drainage: Moderately well drained. Soil rarely remains saturated for more than a week

following heavy or prolonged rainfall.

Fertility: Inherent fertility is low, as indicated by the exchangeable cation data. Although the

subsoil has high nutrient retention capacity, the overall capacity of the soil to supply nutrients is reduced by the low clay and organic carbon levels in the surface soil. Regular phosphorus applications are necessary (levels are low at sampling site). Nitrogen levels depend on cropping history and legume status of pastures. Zinc and copper deficiencies occur occasionally. Zinc concentrations are low at the sampling

site.

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

Rooting depth: Not recorded. Estimate 48 cm at pit site, with few roots below 25 cm.

Barriers to root growth:

Physical: The dense clayey subsoil restricts root density.

Chemical: High pH and sodicity from 48 cm prevent deeper root growth.

Waterholding capacity: Approximately 40 mm in the rootzone.

Seedling emergence: Generally satisfactory, although surface may seal in places.

Workability: Firm surface is easily worked

Erosion Potential:

Water: Low.

Wind: Moderately low.

Laboratory Data

| Depth cm | pH H ₂ O | pH CaC1 ₂ | 5 | EC1:5 dS/m | ECe dS/m | % | P | | mg/kg | Boron mg/kg | Boron Trace Elements mg/kg (DTPA) | | | | CEC | Exchangeable Cations cmol(+)/kg | | | | ESP |
|-------------|------------------------|-------------------------|-------|---------------|-------------|------|-------|-------|-------|----------------|-----------------------------------|----|------|-----|--------|---------------------------------|-----|-------|------|------|
| | | | | | | | mg/kg | mg/kg | | | Cu | Fe | Mn | Zn | (+)/kg | Ca | Mg | Na | K | |
| Paddock | 6.9 | 6.6 | - | 0.06 | 0.6 | 0.58 | 10 | 443 | - | 1.0 | 0.5 | - | 8.9 | 0.3 | 6.8 | 3.3 | 1.0 | < 0.1 | 1.1 | 1.5 |
| | | | | | | | | | | | | | | | | | | | | |
| 0-13 | 6.9 | 6.6 | ı | 0.08 | 0.7 | 0.62 | 11 | 449 | - | 0.8 | 0.4 | - | 10.1 | 0.2 | 6.8 | 3.7 | 1.1 | < 0.1 | 1.1 | 1.5 |
| 13-25 | 8.3 | 7.4 | < 0.1 | 0.10 | 0.9 | 0.29 | 4 | 250 | - | 1.0 | 0.6 | 1 | 5.2 | 0.2 | 9.6 | 5.1 | 1.5 | 0.10 | 0.78 | 10.4 |
| 25-48 | 8.9 | 8.0 | 0.4 | 0.31 | 2.0 | 0.34 | 1 | 194 | - | 1.4 | 0.7 | - | 2.0 | 0.1 | 21.9 | 8.3 | 7.8 | 4.2 | 0.71 | 19.2 |
| 48-80 | 9.3 | 8.4 | 12 | 0.99 | 6.5 | 0.14 | 1 | 368 | - | 6.9 | 0.9 | - | 0.4 | 0.1 | 16.5 | 4.7 | 7.2 | 5.6 | 0.97 | 33.9 |
| 80-170 | 9.3 | 8.3 | 7.8 | 1.05 | 6.8 | 0.09 | 1 | 389 | - | 12.4 | 0.6 | - | 0.5 | 0.2 | 15.3 | 2.9 | 6.5 | 6.2 | 1.1 | 40.5 |

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.

Further information: DEWNR Soil and Land Program



