## **SHALLOW CALCAREOUS LOAM**

General Description: Greyish brown powdery calcareous loam, becoming more silty with

depth and grading to weathering calcareous siltstone bedrock within

one metre.

**Landform:** Upper slopes of undulating

to rolling low hills

**Substrate:** Weathered siltstone mantled

by soft carbonate

Vegetation:

**Type Site:** Site No.: CM054 1:50,000 mapsheet: 6630-1 (Burra)

Hundred:KingstonEasting:312400Section:402Northing:6288050

Sampling date: 02/08/94 Annual rainfall: 430 mm average

Mid slope of undulating low hills. Firm surface with 2-10% siltstone and calcrete fragments to

60 mm in size. 7% slope.

## **Soil Description:**

Depth (cm) Description

0-10 Dark brown highly calcareous loam with weak

granular structure and 2-10% siltstone fragments.

Clear to:

10-23 Brown highly calcareous clay loam with moderate

subangular blocky structure and 10-20% siltstone

fragments. Sharp to:

23-25 Moderately cemented discontinuous massive

calcrete pan. Sharp to:

25-36 Brown highly calcareous massive clay loam with

20-50% carbonate nodules and 20-50% siltstone

fragments. Abrupt to:

36-60 Pale yellow highly calcareous massive clay loam

with 20-50% soft carbonate and more than 50%

siltstone fragments. Clear to:

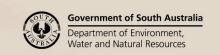
60-100 Calcareous weathering siltstone.

Classification: Hypervescent, Paralithic, Supracalcic Calcarosol; medium, slightly gravelly, loamy / clay

loamy, moderate.









## Summary of Properties

**Drainage:** Well drained. The soil is friable and well aerated and is unlikely to remain saturated

for any appreciable length of time.

**Fertility:** Natural fertility is moderate, mainly due to the high carbonate content throughout,

limiting availability of phosphorus and trace elements. Phosphorus levels are low at pit site, but organic carbon (therefore nitrogen reserves are satisfactory). Zinc and possibly manganese may be deficient in some seasons and should be monitored.

**pH:** Alkaline at the surface, strongly alkaline with depth.

**Rooting depth:** 60 cm in pit, but very few roots below 36 cm.

Barriers to root growth:

**Physical:** Shallow rock and calcrete limit the depth of root penetration.

**Chemical:** High carbonate content and very high pH restrict root growth below 36 cm.

Waterholding capacity: Approximately 50 mm.

**Seedling emergence:** Good.

Workability: Good.

**Erosion Potential:** 

Water: Moderate. Although the soil is relatively resistant to erosion, the slope is such that it

will wash if unprotected.

Wind: Low, but excessive cultivation or livestock trampling will pulverize the surface

causing it to blow.

## Laboratory Data

| Depth<br>cm | pH<br>H <sub>2</sub> O | pH<br>CaC1 <sub>2</sub> | -    | EC1:5<br>dS/m | ECe<br>dS/m | Org.C<br>% |    |     |     |     | Trace Elements mg/kg<br>(DTPA) |    |    | CEC<br>cmol<br>(+)/kg | Exchangeable Cations cmol(+)/kg |      |      |      | ESP  |      |
|-------------|------------------------|-------------------------|------|---------------|-------------|------------|----|-----|-----|-----|--------------------------------|----|----|-----------------------|---------------------------------|------|------|------|------|------|
|             |                        |                         |      |               |             |            | 8  | 8   |     |     | Cu                             | Fe | Mn | Zn                    | ( ),8                           | Ca   | Mg   | Na   | K    |      |
| Paddock     | 8.4                    | 7.7                     | 7.7  | 0.13          | 0.82        | 1.7        | 12 | 192 | 8.8 | 1.6 | -                              | -  | -  | -                     | 14.8                            | 16.3 | 1.17 | 0.08 | 0.52 | 0.5  |
|             |                        |                         |      |               |             |            |    |     |     |     |                                |    |    |                       |                                 |      |      |      |      |      |
| 0-10        | 8.4                    | 7.7                     | 9.0  | 0.12          | 0.80        | 1.7        | 15 | 191 | 9.9 | 1.1 | -                              | -  | -  | -                     | 12.7                            | 14.7 | 1.15 | 0.07 | 0.55 | 0.6  |
| 10-23       | 8.6                    | 7.8                     | 9.5  | 0.12          | 0.73        | 1.2        | 3  | 95  | 8.4 | 0.6 | -                              | -  | -  | -                     | 13.1                            | 14.8 | 1.03 | 0.09 | 0.35 | 0.7  |
| 23-25       | -                      | -                       | -    | -             | -           | -          | -  | -   | -   | -   | -                              | -  | -  | -                     | -                               | -    | -    | -    | -    | -    |
| 25-36       | 8.8                    | 7.8                     | 23.9 | 0.12          | 0.70        | 1.1        | 4  | 113 | 8.8 | 1.0 | -                              | -  | -  | -                     | 8.4                             | 10.8 | 0.96 | 0.16 | 0.16 | 1.9  |
| 36-60       | 9.6                    | 7.8                     | 36.7 | 0.14          | 0.79        | 0.4        | 3  | 40  | 6.9 | 1.3 | -                              | -  | -  | -                     | 2.3                             | 3.94 | 0.49 | 0.47 | 0.02 | 20.4 |
| 60-100      | -                      | -                       | -    | -             | -           | -          | -  | -   | -   | -   | -                              | -  | -  | -                     | -                               | ı    | -    | -    | -    | -    |

**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: <u>DEWNR Soil and Land Program</u>

