

## SHALLOW CALCAREOUS LOAM

**General Description:** *Calcareous sandy loam to loam, becoming more highly calcareous with depth, often with rubble, grading to weathering basement rock*

**Landform:** Undulating rises.

**Substrate:** Deeply weathered Kanmantoo Group schist.

**Vegetation:**

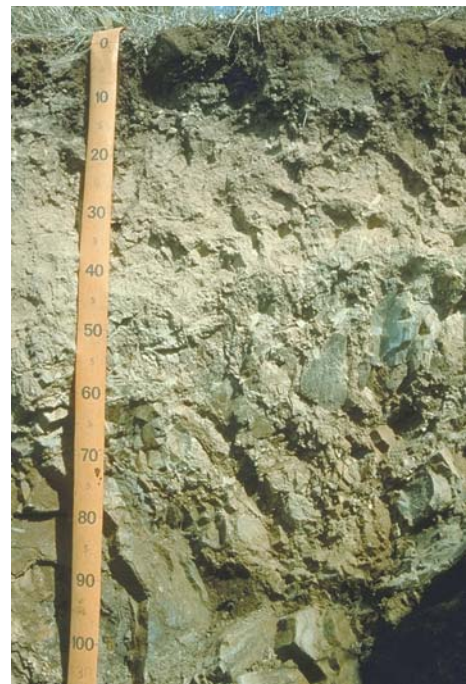


**Type Site:** Site No.: MO033

1:50,000 sheet:	6727-4 (Monarto)	Hundred:	Monarto
Annual rainfall:	350 mm	Sampling date:	1976
Landform:	Lower slope of undulating rise, 3% slope		
Surface:	Firm with no stones and sporadic saline patches		

### Soil Description:

Depth (cm)	Description
0-10	Dark brown massive friable moderately calcareous fine sandy loam. Clear to:
10-18	Dark brown massive friable highly calcareous loam with 20-50% carbonate nodules. Clear to:
18-34	Brown massive friable very highly calcareous loam. Gradual to:
34-50	Light yellowish brown massive friable very highly calcareous micaceous loam with 20-50% soft carbonate segregations. Diffuse to:
50-90	Light olive brown friable massive silty loam (decomposed schist), with 10-20% hard fragments. Diffuse to:
90-160	Weathering schist.



**Classification:** Epihypersodic, Paralithic, Supracalcic Calcarosol; medium, non-gravelly, loamy/loamy, moderate

## Summary of Properties

- Drainage:** Moderately well drained. The soil never remains wet for more than a week.
- Fertility:** Inherent fertility is moderately low. Although clay content is favourable, high surface carbonate concentrations cause restriction of nutrient availability, especially phosphorus, zinc, copper and manganese.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** Not recorded. Estimate 35 cm in pit.

### Barriers to root growth:

- Physical:** In some profiles, hard basement rock limits root zone depth, although generally, weathering rock is soft and allows some growth.
- Chemical:** High pH and salt levels at shallow depth restrict root growth. These soils are sometimes (as at this site) associated with “magnesia patches” where surface salt accumulation kills all but the most halophytic vegetation.

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

**Seedling emergence:** Satisfactory except where salt levels are sufficiently high.

**Workability:** Firm surface is easily worked.

### Erosion Potential

**Water:** Moderate.

**Wind:** Moderately low (to moderately high where soil is saline to the surface).

## Laboratory Data

Depth cm	Coarse sand %	Fine sand %	Silt %	Clay %	pH H <sub>2</sub> O	CO <sub>3</sub> %	EC 1:5 dS/m	Cl mg/kg	CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Ca	Mg	Na	K	
0-10	17	59	6	14	nd	nd	0.54	626	16	11.6	2.7	0.63	1.9	3.9
10-18	13	53	10	17	9.0	nd	0.18	88	17	11.9	3.9	1.6	1.9	9.4
18-34	10	44	10	19	8.5	nd	0.94	1280	18	7.5	6.6	4.6	2.2	25.6
34-50	6	34	12	8	9.5	nd	1.00	1260	13	10.0	7.9	5.8	1.6	44.6
50-90	3	58	9	10	9.6	nd	2.93	5000	nd	nd	nd	nd	nd	nd

**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.