

## SHALLOW CALCAREOUS LOAM - SCALDED

**General Description:** *Brown calcareous loam grading to a very highly calcareous clay loam merging with weathering basement rock within a metre*

**Landform:** Undulating rises

**Substrate:** Fine grained basement siltstone mantled by soft carbonates

**Vegetation:**



**Type Site:** Site No.: CU050

1:50,000 sheet: 6632-4 (Orroroo)

Hundred: Coomooroo

Annual rainfall: 340 mm

Sampling date: 03/11/94

Landform: Lower slope of an undulating rise, 2% slope

Surface: Firm and scalded with minor siltstone and quartzite fragments

**Soil Description:**

Depth (cm)	Description
0-9	Brown highly calcareous silty loam with weak granular structure. Abrupt to:
9-15	Brown highly calcareous silty clay loam with moderate polyhedral structure. Abrupt to:
15-35	Brown very highly calcareous massive silty clay loam with 20-50% soft carbonate. Gradual to:
35-50	Light brown very highly calcareous massive silty loam with 20-50% siltstone fragments and 20-50% soft carbonate. Gradual to:
50-75	Soft very highly calcareous weathering siltstone.



**Classification:** Epihypersodic, Paralithic, Hypercalcic Calcarosol; medium, non-gravelly, silty / silty, moderate

### Summary of Properties

**Drainage** The soil is well drained and is unlikely to ever become saturated for significant periods.

**Fertility** The soil has a moderate level of natural fertility, as indicated by the CEC and exchangeable calcium values. Organic carbon is satisfactory, as are levels of measured elements.

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

**Rooting depth** 50 cm in pit (probably ice plant roots), but very few below 15 cm.

#### Barriers to root growth

**Physical:** Moderately shallow depth to rock is the only physical limitation.

**Chemical:** High salinity is the main limitation. E<sub>Ce</sub> values above 8 dS/m are limiting. High pH and carbonate content also restrict nutrient availability.

**Water holding capacity** Approximately 70 mm, but most of this is effectively unavailable due to the high salt concentrations.

**Seedling emergence:** Poor (high salt). No physical barriers.

**Workability:** Good

#### Erosion Potential

**Water:** Moderate due to poor cover

**Wind:** As above

### Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -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	8.0	7.9	4.1	7.56	47.4	1.5	20	274	-	3.9	0.63	2	7.61	0.65	11.9	9.55	3.00	0.33	0.71	2.8
0-9	8.1	7.9	5.6	7.38	55.0	1.6	28	440	-	3.7	0.72	2	8.57	0.80	10.6	8.77	2.75	0.35	1.01	3.3
9-15	8.6	8.2	10.4	2.62	20.2	0.9	8	205	-	4.7	0.84	3	4.03	0.43	11.5	6.81	3.34	2.04	0.62	17.7
15-35	8.9	8.2	34.6	1.69	13.0	0.5	6	60	-	4.8	0.58	2	1.80	0.25	5.5	4.02	2.46	0.76	0.23	13.8
35-50	9.1	8.3	31.6	1.16	10.3	0.4	4	38	-	2.9	0.49	2	1.30	0.34	3.7	2.68	2.15	0.46	0.14	12.4
50-75	9.5	8.6	28.5	0.75	6.51	0.4	<4	2	-	0.8	0.30	1	1.04	0.30	1.9	1.54	1.12	0.24	0.03	12.6

**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.