

LOAM OVER RED CLAY ON ROCK

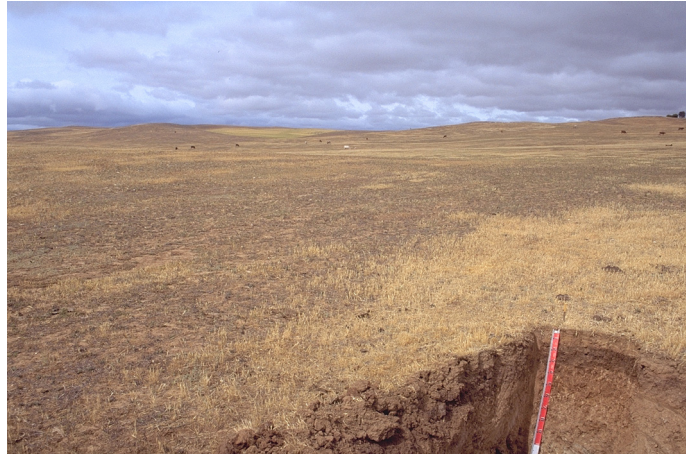
(Non scalded)

General Description: *Firm medium textured surface soil abruptly overlying a red well structured clayey subsoil with soft carbonate at depth grading to weathering basement rock within a metre*

Landform: Lower to mid slopes of undulating rises

Substrate: Weathered fine grained basement rock mantled by soft carbonate

Vegetation:



Type Site:	Site No.:	CU049	1:50,000 mapsheet:	6632-4 (Orroroo)
	Hundred:	Coomooroo	Easting:	270850
	Section:	241	Northing:	6384700
	Sampling date:	03/11/1994	Annual rainfall:	330 mm average

Lower slope of an undulating rise with a firm surface and minor siltstone and quartzite stone. Slope is 2%.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-14	Friable reddish brown silty loam with moderate granular structure. Abrupt to:
14-30	Dark reddish brown medium clay with strong prismatic breaking to polyhedral structure. Clear to:
30-50	Reddish brown highly calcareous friable silty light clay with strong polyhedral structure and 2-10% soft carbonate. Gradual to:
50-90	Brown very highly calcareous soft silty clay loam with weak structure, 20-50% soft carbonate and 2-10% siltstone fragments. Clear to:
90-130	Soft very highly calcareous weathering siltstone.



Classification: Hypercalcic, Pedaric, Red Sodosol; medium, non-gravelly, loamy / clayey, moderate



Summary of Properties

- Drainage:** The soil is well drained and is never likely to be saturated for significant periods.
- Fertility:** The soil has a high level of natural fertility, as indicated by the exchangeable cation data (ie high CEC and high proportion of calcium). Organic carbon levels are good (reserves of nitrogen and sulphur). Other tested elements are adequate.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 90 cm in pit, but few roots in weathering rock.
- Barriers to root growth:**
- Physical:** There are no physical barriers, except where the rock is close to the surface.
- Chemical:** High salt levels (ECe more than 8 dS/m), high sodicity (ESP more than 25%) and high pH (more than 9) in the subsoil limit root growth. Management strategies should aim to keep the subsoil salt where it is.
- Waterholding capacity:** Approximately 80 mm in rootzone (moderate).
- Seedling emergence:** Good
- Workability:** Good
- Erosion Potential:**
- Water:** Moderately low
- Wind:** Low, although overgrazing will pulverize the surface, exposing it to movement by wind.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ 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	8.3	7.6	0	0.19	1.09	1.7	20	432	-	1.5	1.05	5	20.4	0.89	16.0	12.64	2.74	0.68	1.14	4.3
0-14	8.6	7.8	0	0.15	0.96	1.6	15	379	-	1.7	1.08	5	16.0	0.46	16.3	13.10	2.89	0.95	1.00	5.8
14-30	8.8	7.8	0	0.30	1.89	0.8	5	77	-	3.0	1.65	7	6.54	0.31	24.6	15.21	7.86	3.69	0.42	15.0
30-50	8.9	8.3	17.8	1.42	9.57	0.5	11	53	-	8.3	1.28	5	3.64	0.29	16.1	7.37	6.22	5.56	0.32	34.5
50-90	9.1	8.3	28.1	1.50	10.45	0.5	9	36	-	7.0	0.80	3	2.10	0.33	10.8	4.28	4.15	4.17	0.20	38.6
90-130	9.2	8.4	13.8	2.31	19.29	0.1	4	32	-	1.2	0.43	3	1.51	0.57	9.8	3.08	4.05	4.15	0.13	42.3

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.

Further information: [DEWNR Soil and Land Program](#)

