

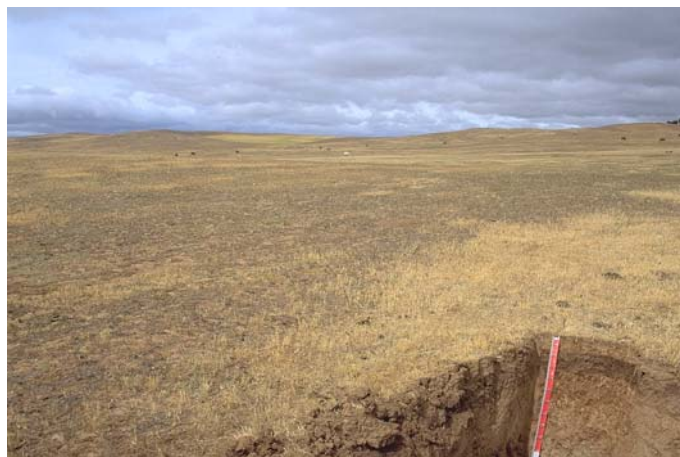
LOAM OVER RED CLAY ON ROCK

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 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 with minor siltstone and quartzite stones

Soil Description:

Depth (cm)	Description
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.
Water holding capacity	Approximately 80 mm in root zone (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 -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	8.3	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.