

LOAM OVER RED CLAY

General Description: *Loam over a well structured red clay, calcareous with depth*

Landform: Gently inclined outwash fans.

Substrate: Gravelly clay alluvium.

Vegetation: *Acacia victoriae* shrubland.



Type Site: Site No.: CU054

1:50,000 sheet:	6532-4 (Wilmington)	Hundred:	Willochra
Annual rainfall:	425 mm	Sampling date:	11/05/95
Landform:	Lower slope of gently inclined fan, 4% slope		
Surface:	Hard setting with 20-50% quartzite (200-600 mm)		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-14	Dark brown friable fine sandy loam with moderate polyhedral structure and 10-20% quartzite (60-200 mm). Abrupt to:
14-25	Dusky red firm fine sandy medium clay with coarse prismatic structure and 10-20% quartzite gravel (60-200 mm). Gradual to:
25-49	Red friable medium clay with coarse prismatic structure and 10-20% quartzite gravel (60-200 mm). Abrupt to:
49-56	Red hard massive calcareous light medium clay with 25% gravel (60-200 mm) and 10-20% carbonate nodules. Gradual to:
56-90	Red hard massive calcareous medium clay with more than 65% gravel (60-200 mm) and veins of carbonate. Gradual to:
90-140	Red hard massive calcareous medium clay with 45% gravel (60-200 mm) and 10-20% fine carbonate segregations.



Classification: Haplic, Hypercalcic, Red Chromosol; medium, moderately gravelly, loamy / clayey, deep

Summary of Properties

Drainage	Moderately well drained. Some layers remain wet for up to a week following heavy or prolonged rainfall.
Fertility	Inherent fertility is moderate as indicated by the exchangeable cation data. Concentrations of all tested elements are satisfactory, although regular phosphorus applications are essential. Organic carbon levels are adequate, suggesting reasonable nitrogen reserves.
pH	Neutral at the surface, alkaline with depth.
Rooting depth	140 cm in pit, but few roots below 90 cm.
Barriers to root growth	
Physical:	No physical barriers, apart from some early restrictions on emerging roots caused by the hard surface layer.
Chemical:	There are no chemical barriers.
Water holding capacity	Approximately 130 mm in the root zone.
Seedling emergence:	Some emergence problems will occur if the soil dries out during germination.
Workability:	Gravel may interfere with tillage slightly. Soil will puddle if worked too wet and shatter if worked too dry.
Erosion Potential	
Water:	Moderately low.
Wind:	Low.

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	7.3	7.1	0.1	0.13	0.73	1.3	37	362	-	0.6	-	-	-	-	8.8	5.80	1.31	0.07	1.06	0.9
0-14	7.0	6.6	0	0.05	0.50	1.2	15	331	-	0.7	-	-	-	-	10.5	8.76	1.81	0.07	0.99	0.7
14-25	7.2	6.6	0	0.05	0.40	0.9	4	302	-	1.2	-	-	-	-	16.5	12.43	2.86	0.12	1.03	0.7
25-49	7.7	7.0	<0.1	0.05	0.29	0.7	<4	322	-	2.4	-	-	-	-	26.5	18.69	4.21	0.21	1.35	0.8
49-56	8.5	7.9	32.3	0.13	0.43	0.3	<4	277	-	1.5	-	-	-	-	16.4	13.44	3.34	0.17	1.03	1.0
56-90	8.7	8.0	42.9	0.13	0.54	<0.1	4	289	-	1.6	-	-	-	-	13.7	10.08	3.63	0.19	0.90	1.4
90-140	8.9	8.1	40.7	0.14	0.53	<0.1	<4	315	-	1.6	-	-	-	-	12.8	7.31	5.20	0.28	1.07	2.2

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.