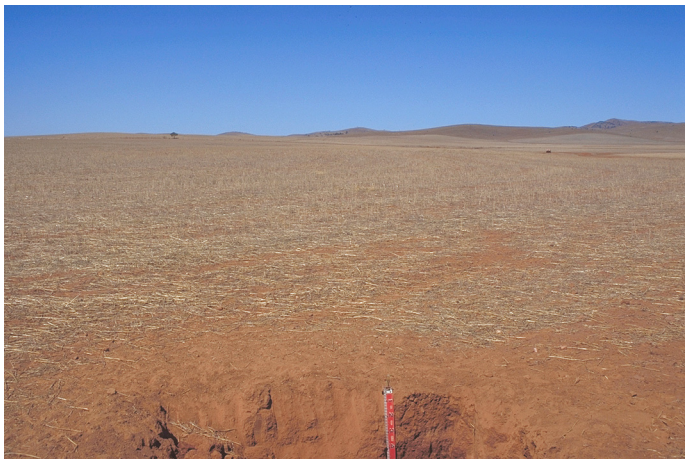
SANDY LOAM OVER RED CLAY

General Description: *Hard setting sandy loam over a well structured red clay, calcareous with depth*



Landform: Outwash fans and alluvial plains.

Substrate: Fine grained alluvium. At this site, gravelly alluvium overlies a buried soil at 100 cm.

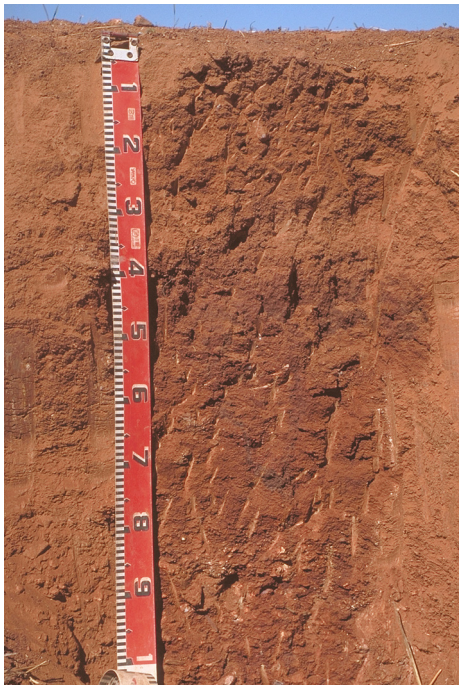
Vegetation:

Type Site:

Site No.:	CU901	1:50,000 mapsheet:	6631-2 (Hallett)
Hundred:	Hallett	Easting:	304400
Section:	464	Northing:	6304750
Sampling date:	21/03/2000	Annual rainfall:	410 mm average

Drainage depression on a gently inclined outwash fan, 3% slope. Hard setting surface with 2-10% quartz gravel (6-20 mm).

Soil Description:



Depth (cm)	*Description*
0-15	Dark reddish brown hard sandy loam with weak granular structure. Clear to:
15-35	Reddish brown hard massive light sandy clay loam. Clear to:
35-75	Dark red very hard medium clay with strong medium polyhedral structure. Diffuse to:
75-100	Red hard light clay with moderate angular blocky structure, 20-50% siltstone gravel (6-20 mm) and 10-20% quartz gravel (20-60 mm). Diffuse to:
100-120	Red very hard moderately calcareous medium clay with strong coarse prismatic structure and 2-10% fine carbonate segregations.

Classification: Sodic, Calcic, Red Chromosol; thick, slightly gravelly, loamy / clayey, deep

Summary of Properties

Drainage: Moderately well to well drained. Water perches on the subsoil clay for a few days following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderate. The surface soil is relatively low in clay and organic matter, reducing nutrient retention capacity. Capacity has been further reduced by acidification.

pH: Acidic at the surface, slightly alkaline at depth.

Rooting depth: 75 cm in pit.

Barriers to root growth:

Physical: There are no significant physical barriers, although the hard consistency throughout retards root growth to some extent.

Chemical: Surface acidity and associated high aluminium levels affect root growth. This problem will be alleviated with lime applications.

Waterholding capacity: Approximately 100 mm in the rootzone.

Seedling emergence: Fair. Hard setting, sealing surface affects emergence percentage.

Workability: Fair. Surface tends to shatter if worked too dry, and puddle if worked too wet.

Erosion Potential:

Water: Moderate.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	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)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	Ext Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
0-15	5.1	4.5	-	0.07	-	0.64	40	393	5.1	0.6	-	-	-	-	4.2	2.48	0.81	0.11	0.81	2.6	17.1
15-35	7.9	7.4	-	0.10	-	-	-	-	-	0.7	-	-	-	-	8.8	5.24	2.33	0.60	0.66	6.8	-
35-75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75-100	8.7	7.7	-	0.12	-	-	-	-	-	1.4	-	-	-	-	15.4	7.80	4.78	1.79	1.05	11.6	-
100-120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Sum of cations is an estimate of CEC (cation exchange capacity), 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 estimated CEC.

Further information: DEWNR Soil and Land Program