

HARD GRADATIONAL RED CLAY LOAM

(Scalded variant)

General Description: *Sandy loam to clay loam (partly or completely eroded in the scalded variant) overlying a very firm red coarsely structured clay subsoil forming in quartzite or quartzitic siltstone*

Landform: Slopes of undulating to rolling low hills

Substrate: Quartzite or quartzitic siltstone to fine sandstone

Vegetation:

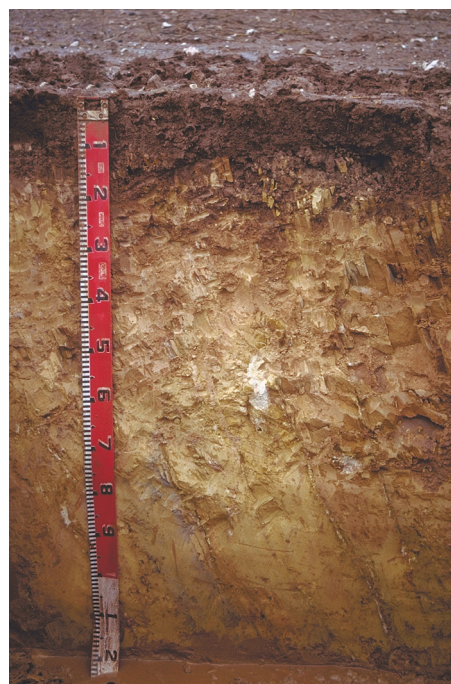


Type Site:	Site No.:	CU038	1:50,000 mapsheet:	6532-2 (Booloroo)
	Hundred:	Pekina	Easting:	263200
	Section:	245	Northing:	6355650
	Sampling date:	06/06/1994	Annual rainfall:	420 mm average

Upper slope (4% gradient) of an undulating rise. Scalded surface with 2-10% quartz stones.

Soil Description:

Depth (cm)	Description
0-8	Reddish brown light clay with weak coarse subangular blocky structure. Abrupt to:
8-20	Reddish brown weakly dispersive medium heavy clay with strong polyhedral structure and 2-10% siltstone fragments. Clear to:
20-40	Yellowish red highly calcareous medium clay with strong polyhedral structure and 20-50% siltstone fragments. Clear to:
40-60	Weathering siltstone with highly calcareous yellowish red polyhedral structured clay in cleavages and gaps between rock fragments. Diffuse to:
60-120	Weathering siltstone with minor soft carbonate segregations.



Classification: Sodic, Calcic, Red Dermosol; thin, non-gravelly, clayey / clayey, moderate



Summary of Properties

Drainage:	The soil is moderately well drained. The dispersive clay prevents the free movement of water causing the soil to remain wet for periods of a week or so at a time after rain.
Fertility:	The soil has a moderate level of natural fertility. Because of the high salinity levels and consequent lack of plant growth, nutrient levels are high.
pH:	Alkaline throughout.
Rooting depth:	40 cm in pit, but there are few roots below 20 cm.
Barriers to root growth:	
Physical:	High soil strength causes some restrictions to root growth.
Chemical:	High salinity (2-5 times maximum barley tolerance) is the main limitation. High sodicity (ESP more than 30%) may cause a secondary barrier.
Waterholding capacity:	Approximately 70 mm, but not all is available due to poor root densities in the lower part of the profile.
Seedling emergence:	Fair to poor due to saline and sodic surface soil and its tendency to seal.
Workability:	Fair. The poor surface structure and tendency to become wet and sticky limit cultivation opportunities.
Erosion Potential:	
Water:	Moderate.
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 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	8.5	8.1	3.7	2.39	16.3	1.4	61	264	-	10.4	1.6	3	7.5	5.0	11.4	7.2	3.6	2.48	0.56	21.8
0-8	8.2	8.0	0.2	6.42	38.5	1.2	112	256	-	11.6	1.1	3	7.5	4.1	13.2	5.5	4.5	3.97	0.55	30.1
8-20	8.4	8.1	0.2	2.94	16.6	0.6	9	194	-	10.4	1.1	2	3.3	0.5	14.9	3.7	5.2	5.01	0.42	33.6
20-40	8.9	8.5	11.8	2.50	12.8	0.5	4	81	-	6.7	2.7	1	0.5	0.3	7.7	2.7	3.6	3.11	0.19	40.4
40-60	8.9	8.4	7.4	2.13	12.7	<0.1	<4	64	-	4.8	0.3	1	0.4	0.3	6.2	2.0	2.8	2.09	0.10	33.7
60-120	8.6	8.4	0.3	4.15	26.0	<0.1	<4	50	-	3.1	0.2	1	0.1	0.4	5.2	1.6	2.5	2.02	0.08	38.9

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.

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

