

## LOAM OVER RED CLAY ON ROCK

**General Description:** *Hard setting loam over a strongly structured red clay, calcareous with depth, grading to weathering basement rock.*

**Landform:** Slopes of undulating to rolling rises and low hills

**Substrate:** Precambrian siltstone, mantled by fine carbonate.

**Vegetation:**



<b>Type Site:</b>	Site No.:	CL906	1:50,000 mapsheet:	6629-2 (Kapunda)
	Hundred:	Light	Easting:	294350
	Section:	29	Northing:	6201350
	Sampling date:	07/03/91	Annual rainfall:	465 mm average

Lower slope of gently undulating rise, 2% slope. Hard setting surface with no stones.

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-7	Reddish brown firm loam with moderate medium granular structure. Abrupt to:
7-27	Dark reddish brown firm medium clay with strong medium polyhedral structure. Clear to:
27-67	Yellowish red firm very highly calcareous light clay with moderate subangular blocky structure and 20-50% fine carbonate segregations. Gradual to:
67-130	Weathering siltstone with 10-20% fine carbonate in fissures and pockets.



**Classification:** Sodic, Hypercalcic, Red Chromosol; thin, non-gravelly, loamy / clayey, moderate



## Summary of Properties

- Drainage:** Well drained. The soil rarely remains wet for more than a day or so following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderately high, a reflection of surface clay content of 20-25%, and favourable organic matter levels. Low zinc concentrations from 7 cm may be significant.
- pH:** Neutral at the surface, alkaline with depth.
- Rooting depth:** 43 cm in the pit, but few roots below 27 cm.
- Barriers to root growth:**
- Physical:** There are no apparent barriers to root growth until basement rock is encountered.
  - Chemical:** Unusually high boron and salt concentrations from shallow depth limit root growth. The boron and salt presumably derive from the parent rock.
- Waterholding capacity:** Approximately 55 mm in the potential rootzone.
- Seedling emergence:** Satisfactory to fair. These soils tend to set hard and seal, reducing establishment percentages. The problem reduces when surface condition is improved through better residue management or gypsum application.
- Workability:** Typically the surfaces of these soils shatter if worked too dry, and puddle if worked too wet. The length of time for effective cultivation increases as surface condition is improved.
- Erosion Potential:**
- Water:** Moderately low.
  - Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> 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	
0-7	7.1	6.6	0	0.33	-	1.24	77	490	-	-	1.7	25	25.0	0.6	-	-	-	-	-	-
7-27	8.5	7.5	1	0.40	-	0.77	8	600	-	26	2.5	7.2	4.7	0.2	-	-	-	-	-	-
27-67	9.0	8.4	38	1.40	-	0.25	4	460	-	28	1.5	3.9	1.1	0.0	-	-	-	-	-	-
67-130	8.9	8.4	9	2.21	-	0.09	2	210	-	-	0.5	1.8	0.3	0.1	-	-	-	-	-	-

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

