

# SANDY LOAM OVER RED CLAY ON ROCK

**General Description:** *Hard sandy loam to loam abruptly overlying a well structured red clay, calcareous with depth, grading to weathering basement rock.*

**Landform:** Slopes of undulating to rolling rises or low hills.

**Substrate:** Fine sandstone or siltstone (Appila Formation at this site), mantled by fine carbonate.

**Vegetation:**



**Type Site:** Site No.: CL901

1:50,000 sheet: 6629-2 (Kapunda)      Hundred: Kapunda  
 Annual rainfall: 500 mm      Sampling date: 06/03/91  
 Landform: Upper slope of undulating rise, 5% slope  
 Surface: Hard setting with about 5% siltstone fragments

**Soil Description:**

Depth (cm)	Description
0-31	Brown hard massive fine sandy loam. Abrupt to:
31-47	Dark reddish brown hard medium clay with strong medium polyhedral structure. Abrupt to:
47-63	Yellow firm massive very highly calcareous loam (decomposed rock and 20-50% fine carbonate). Gradual to:
63-100	Weathering siltstone with 20-50% fine carbonate.



**Classification:** Sodic, Hypercalcic, Red Chromosol; thick, slightly gravelly, loamy / clayey, moderate

## Summary of Properties

**Drainage:** Well drained. The soil is unlikely to remain wet for more than a day or so following heavy or prolonged rainfall.

**Fertility:** Inherent fertility is moderate. Surface clay and organic matter contents are slightly low for optimal nutrient retention.

**pH:** Acidic in the surface, strongly alkaline with depth.

**Rooting depth:** 100 cm in pit, but few roots below 50 cm.

### Barriers to root growth:

**Physical:** There are no significant barriers above basement rock.

**Chemical:** High pH in the carbonate layers restricts root growth.

**Water holding capacity:** Approximately 80 mm in the root zone.

**Seedling emergence:** Fair. Hard setting surface tends to seal over, preventing full seedling emergence.

**Workability:** Fair. The surface soil 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 <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> -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	
0-31	6.2	5.4	0	0.10	-	0.98	47	420	-	-	0.7	37	13.4	1.7	-	-	-	-	-	-
31-47	7.6	6.7	1.8	0.12	-	0.46	5	410	-	3	2.4	11	7.0	0.2	-	-	-	-	-	-
47-63	9.1	8.0	43.2	0.14	-	0.31	1	310	-	1	0.6	1.8	0.4	0.1	-	-	-	-	-	-
63-100	10.1	8.5	35.6	0.34	-	0.21	1	530	-	-	0.4	2.4	0.5	0.1	-	-	-	-	-	-