

**SANDY LOAM OVER BROWN CLAY**

(Butler soil)

**General Description:** *Sandy loam over coarsely structured brown clay, calcareous with depth*

**Landform:** Very gently undulating plain.

**Substrate:** Tertiary clay.

**Vegetation:**



<b>Type Site:</b>	Site No.:	EL038	1:50,000 mapsheet:	6029-4 (Yeelanna)
	Hundred:	Cummins	Easting:	566400
	Section:	61	Northing:	6211050
	Sampling date:	20/02/1986	Annual rainfall:	430 mm average

Flat plain. Firm to hard setting surface with no stones.

**Soil Description:**

<i>Depth (cm)</i>	<i>Description</i>
0-7	Very dark greyish brown massive sandy loam. Abrupt to:
7-10	Yellowish brown massive sandy loam. Sharp to:
10-45	Orange medium clay with coarse prismatic structure. Clear to:
45-115	Brownish yellow very highly calcareous light medium clay with weak coarse prismatic structure. Gradual to:
115-145	Light reddish brown very highly calcareous light clay with weak coarse prismatic structure. Gradual to:
145-180	Pink highly calcareous light clay with weak coarse prismatic structure.



**Classification:** Sodic, Hypercalcic, Brown Chromosol; medium, non-gravelly, loamy / clayey, deep



## Summary of Properties

**Drainage:** Moderately well drained. Water can perch on top of the clayey subsoil for a week or so following heavy or prolonged rainfall.

**Fertility:** Inherent fertility is moderately low - surface clay content of about 15% and organic carbon content of 1.3% provide relatively low nutrient retention capacity. Regular phosphorus applications are needed, and concentrations are low at the sampling site.

**pH:** Slightly acidic at the surface, alkaline with depth.

**Rooting depth:** 115 cm in pit, but few roots below 45 cm.

### Barriers to root growth:

**Physical:** The coarsely structured dense clayey subsoil prevents uniform and prolific root growth.

**Chemical:** There are no chemical barriers to root growth.

**Waterholding capacity:** Approximately 70 mm in the rootzone.

**Seedling emergence:** Fair to good, depending on the degree of surface sealing and compaction.

**Workability:** Fair to good.

### Erosion Potential:

**Water:** Low.

**Wind:** Moderately 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	7.9	7.2	2	0.14	1.33	1.3	15	-	-	1.5	-	-	-	-	11.7	-	0.96	0.12	1.20	1
7-10	8.3	7.3	2	0.09	0.86	-	-	-	-	0.8	-	-	-	-	6.1	-	0.67	0.1	0.69	2
10-45	8.3	7.4	3	0.15	0.98	-	-	-	-	2.6	-	-	-	-	36.2	-	5.90	1.10	2.50	3
45-115	8.8	7.9	57	0.33	2.15	-	-	-	-	2.3	-	-	-	-	18.3	-	5.10	1.60	1.40	9
115-145	9.1	7.9	60	0.42	2.73	-	-	-	-	2.1	-	-	-	-	16.3	-	5.90	2.20	1.50	13
145-180	9.2	8.0	48	0.56	3.64	-	-	-	-	3.8	-	-	-	-	18.6	-	9.80	3.20	2.00	17

**Note:** 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.

\* Exchangeable calcium (Ca) values not presented because the laboratory procedure used was inappropriate for highly calcareous samples.

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

