SANDY LOAM OVER BROWN CLAY
(Butler soil)

General Description: *Sandy loam to loamy sand over a coarsely structured brown clay, calcareous with depth*

Landform: Gently undulating low hills.

Substrate: Tertiary clay.

Vegetation:

No landscape image available

Type Site: Site No.: EL040

1:50,000 sheet:	6029-4 (Yeelanna)	Hundred:	Shannon
Annual rainfall:	410 mm	Sampling date:	26/02/92
Landform:	Midslope of low hill, 2% slope		
Surface:	Firm to hard setting with no stones		

Soil Description:

Depth (cm)	*Description*
0-8	Dark greyish brown massive firm loamy sand. Abrupt to:
8-16	Dark brown very hard light medium clay with coarse columnar structure. Abrupt to:
16-44	Reddish yellow hard highly calcareous light clay with medium subangular blocky structure and 10-20% carbonate nodules. Clear to:
44-85	Reddish yellow hard very highly calcareous light clay with medium subangular blocky structure and 10-20% fine carbonate segregations. Diffuse to:
85-140	Yellowish brown hard medium clay with strong fine angular blocky structure and minor ironstone nodules.

Classification: Sodic, Hypercalcic, Brown Chromosol; thin, non-gravelly, sandy / clayey, moderate

Summary of Properties

Drainage Moderately well drained. Water may 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 10% provides relatively low nutrient retention capacity. Regular phosphorus applications are needed.

pH Neutral at the surface, alkaline at depth.

Rooting depth 65 cm in pit

Barriers to root growth

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

Chemical: High boron concentrations and high sodicity prevent any root growth deeper than 85 cm.

Water holding capacity Approximately 60 mm in the root zone.

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

Workability: Fair to good.

Erosion Potential

Water: Moderately low.

Wind: Moderately low.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-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	
0-8	6.8	6.9	1	0.1	1.4	0.8	30	350	-	1.7	0.61	31	2.9	0.78	6.8	4.2	1.2	0.31	0/95	4.6
8-16	7.5	7.4	2	0.2	0.4	0.3	12	530	-	2.9	0.23	18	1.0	0.07	23.7	17.0	4.2	0.56	2.23	2.4
16-44	8.0	7.7	35	0.2	0.7	0.3	6	390	-	3.2	0.43	15	2.4	0.08	21.6	15.5	4.9	0.78	1.71	3.2
44-85	8.8	7.9	40	0.2	0.8	-	-	-	-	6.1	0.63	5.3	1.4	0.19	17.7	7.6	7.9	2.05	1.74	11.6
85-140	8.9	8.3	2	0.8	2.8	-	-	-	-	31.3	0.07	2.6	0.28	0.04	22.6	2.9	9.1	9.93	2.53	43.9

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