

RUBBLY CALCAREOUS LOAM ON CLAY

(Wiabuna soil)

General Description: *Calcareous sandy loam to clay loam overlying rubbly carbonate at shallow depth, grading to clayey sediments within 120 cm*

Landform: Undulating low hills.

Substrate: Tertiary clay.

Vegetation:

Type Site:	Site No.:	EL041	1:50,000 mapsheet:	6029-4 (Yeelanna)
	Hundred:	Shannon	Easting:	566500
	Section:	115	Northing:	6223950
	Sampling date:	26/02/1992	Annual rainfall:	430 mm average

Midslope of low hill with gradient of 2%. Firm surface with 2-10% calcrete stone (20-60 mm).

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown hard moderately calcareous clay loam with moderate subangular blocky structure. Abrupt to:
10-20	Orange very hard highly calcareous light clay with strong subangular blocky structure. Abrupt to:
20-38	More than 50% carbonate nodules in a matrix of orange soft very highly calcareous light clay with moderate subangular blocky structure. Clear to:
38-50	Semi hard carbonate lamellae with a soft reddish yellow very highly calcareous light clay between plates. Clear to:
50-70	Orange firm very highly calcareous light clay with moderate subangular blocky structure and 20-50% carbonate nodules. Gradual to:
70-110	Brownish yellow friable very highly calcareous light clay. Diffuse to:
110-150	Yellowish red friable medium clay with 20-50% fine carbonate segregations.



Classification: Hypervescent, Pedal, Lithocalcic Calcarosol; medium, slightly gravelly, clay loamy/clayey, deep



Summary of Properties

Drainage:	Well drained. Soil rarely remains wet for more than a few days.
Fertility:	Inherent fertility is moderate to high, as indicated by the exchangeable cation data. High clay and organic matter content provide ample nutrient retention capacity, although free lime to the surface reduces the availability of some nutrients. However, all measured elements are in good supply at the sampling site.
pH:	Alkaline at the surface, strongly alkaline with depth.
Rooting depth:	80 cm in pit, but most roots are in the upper 38 cm.
Barriers to root growth:	
Physical:	Although subsoil clay is hard, it does not present a significant physical barrier to root growth.
Chemical:	High pH, sodicity and boron concentrations from 38 cm limit root growth.
Waterholding capacity:	Approximately 100 mm in the rootzone.
Seedling emergence:	Satisfactory.
Workability:	Firm surface is easily worked.
Erosion Potential:	
Water:	Moderately low.
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	
0-10	7.8	7.3	11	0.2	1.2	2.3	73	870	-	4.5	0.79	13	7.8	1.3	28.6	24.6	4.1	0.35	3.25	1.2
10-20	7.9	7.7	20	0.1	0.4	0.8	9	400	-	3.9	0.22	15	1.7	0.06	25.7	19.5	5.6	0.45	1.61	1.8
20-38	8.1	7.8	27	0.2	0.6	0.7	8	310	-	5.0	0.33	14	2.3	0.26	24.0	17.1	7.3	0.65	1.41	2.7
38-50	9.3	8.2	56	0.4	1.5	-	-	-	-	16.5	0.38	7.6	1.3	0.13	17.2	3.6	9.7	4.25	1.89	24.7
50-70	9.8	8.4	58	0.7	1.8	-	-	-	-	19.6	0.26	4.4	0.81	0.06	16.2	2.0	6.0	9.67	1.77	59.7
70-110	9.8	8.4	56	0.7	2.0	-	-	-	-	21.8	0.27	5.8	1.6	0.06	17.7	2.1	6.7	10.26	2.07	58.0
110-150	9.8	8.8	39	0.8	1.7	-	-	-	-	26.0	0.14	5.8	0.82	0.04	20.8	1.7	5.2	15.58	2.24	74.9

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

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

