## **GRADATIONAL CALCAREOUS LOAM**

(Wiabuna soil)

General Description: Calcareous loam grading to a highly calcareous sandy clay loam with variable rubble, becoming more clayey at depth

Landform: Very gently undulating rises.

Description

**Substrate:** Tertiary clay.

Vegetation: Mallee.

Site No.: EC059 1:50,000 mapsheet: 6030-1 (Palkagee) Type site:

Hundred: 576700 Palkagee Easting: Section: Northing: 6285150 15

Sampling date: 19/02/1986 Annual rainfall: 385 mm average

Very gentle slope. Firm surface, no stones.

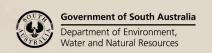
## **Soil Description:**

Depth (cm) 0-8 Dark reddish brown massive highly calcareous loam. Abrupt to: Brown massive highly calcareous sandy clay 8-34 loam. Abrupt to: 34-56 Reddish yellow very highly calcareous massive sandy clay loam with 20-50% carbonate nodules (Class III B carbonate). Abrupt to: 56-98 Reddish yellow very highly calcareous light clay with weak coarse lenticular structure. Clear to: 98-140 Reddish yellow very highly calcareous light medium clay with weak coarse lenticular structure. Gradual to: 140-180 Strong brown medium clay with strong coarse

lenticular structure.



Classification: Endohypersodic, Regolithic, Supracalcic Calcarosol; thick, non-gravelly, loamy / clayey, deep





## Summary of Properties

**Drainage:** Well drained. The soil rarely remains wet for more than a day or so following heavy

or prolonged rainfall, although the substrate clay impedes deep drainage under

irrigation.

**Fertility:** Inherent fertility is moderate to high. Nutrient retention capacity is high, with over

20% clay and 1.7% organic carbon at the surface. Phosphorus concentrations are above adequate levels, but regular applications are necessary. Nitrogen levels depend on legume component of pastures and cropping history. Free lime to the surface may

reduce trace element availability, but levels of all are high.

**pH:** Alkaline at the surface, strongly alkaline at depth.

**Rooting depth:** 140 cm in pit, but few roots below 56 cm.

Barriers to root growth:

**Physical:** There are no physical barriers above the substrate clay where coarse structure limits

root growth to the surfaces of aggregates.

**Chemical:** High pH and boron concentrations from 56 cm severely restrict deeper growth.

**Waterholding capacity:** Approximately 90 mm in the rootzone.

**Seedling emergence:** Satisfactory.

**Workability:** Firm surface is easily worked.

**Erosion Potential:** 

Water: Moderately low to low.

Wind: Moderately low to low

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaC1 <sub>2</sub>	-	EC1:5 dS/m	ECe dS/m	%	P	Avail. K mg/kg	mg/kg	Boron mg/kg	0 0				CEC	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn	(+)/kg	Ca	Mg	Na	K	
0-8	8.2	7.7	9	0.22	0.81	1.7	50	-	-	4.6	0.90	9.9	6.8	4.20	19.8	17.56	3.73	0.18	1.27	0.9
8-34	8.8	8.0	24	0.13	0.57	1.3	5.2	-	-	4.1	0.31	12.0	2.9	0.29	23.0	21.17	3.58	0.64	0.56	2.8
34-56	9.2	8.3	44	0.19	0.44	0.64	4.8	-	-	6.5	0.51	17.0	9.9	0.18	19.7	13.14	6.37	0.52	0.58	2.6
56-98	10.2	8.9	59	0.70	0.62	0.32	5.5	-	-	20.3	0.76	9.2	5.0	0.16	14.6	6.66	8.26	1.44	0.68	9.9
98-140	10.1	8.8	38	0.71	1.45	0.26	5.3	-	-	26.9	1.40	19.0	6.4	0.34	14.1	2.90	6.49	6.73	1.10	48
140-180	10.1	8.7	18	0.56	2.49	0.12	3.6	-	-	27.7	1.00	3.8	1.1	0.48	16.2	1.31	5.66	10.00	0.84	62

**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: <u>DEWNR Soil and Land Program</u>



