

DEEP CALCAREOUS SANDY LOAM

(Sandy Wiabuna soil)

General Description: *Deep loamy sand to sandy loam, becoming more calcareous with variable rubble at depth, but without significant clay accumulation*

Landform: Very gently undulating flats.

Substrate: Very highly calcareous medium grained windblown Woorinen Formation deposits, variably indurated to calcrete and rubble.

Vegetation: Mallee.

Type Site:	Site No.:	EC083	1:50,000 mapsheet:	6030-4 (Murdinga)
	Hundred:	McLachlan	Easting:	567890
	Section:	4	Northing:	6291770
	Sampling date:	31/3/1993	Annual rainfall:	370 mm average

Low sandy rise, 2% slope. Loose surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Brown soft highly calcareous sandy loam. Abrupt to:
10-20	Dark yellowish brown soft highly calcareous light sandy loam. Clear to:
20-30	Dark yellowish brown friable very highly calcareous loamy sand. Clear to:
30-40	Strong brown friable very highly calcareous sandy loam. Clear to:
40-63	Light brown soft very highly calcareous loamy sand with 2-10% carbonate concretions. Clear to:
63-90	Reddish yellow soft very highly calcareous loamy sand with minor fine carbonate concretions. Abrupt to:
90-	Calcrete.



Classification: Hypervescent, Petrocalcic, Hypercalcic Calcarosol; thick, non-gravelly, loamy / loamy, moderate



Summary of Properties

- Drainage:** Rapidly drained. The soil never remains wet for more than a few hours at a time.
- Fertility:** Inherent fertility is low. Sandy loam surface has a moderate nutrient retention capacity, but high carbonate content to the surface reduces phosphate and trace element availability. Regular phosphorus applications are essential - levels at sampling site are adequate. Copper, zinc and manganese deficiencies can be expected, and copper levels appear to be low. Organic carbon concentrations are high, and help boost nutrient retention capacity.
- pH:** Alkaline throughout.
- Rooting depth:** 90 cm in pit.
- Barriers to root growth:**
- Physical:** The calcrete at 90 cm prevents deeper root growth.
 - Chemical:** There are no chemical barriers.
- Waterholding capacity:** Approximately 90 mm in the rootzone.
- Seedling emergence:** Satisfactory, although seasonal water repellence reduces establishment.
- Workability:** Loose surface is easily worked.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Moderately high.

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	8.5	8.0	20	0.14	0.69	1.8	26	430	-	1.6	0.17	4.2	2.90	0.48	11.7	10.99	0.96	0.07	1.06	0.6
10-20	8.8	8.1	17	0.11	0.61	0.7	10	310	-	1.4	0.13	2.7	1.60	0.22	7.9	7.30	0.65	0.10	0.73	1.3
20-30	8.7	8.1	23	0.17	1.09	1.1	11	260	-	2.8	0.19	3.7	1.90	0.24	12.1	10.87	1.21	0.19	0.61	1.6
30-40	8.6	8.1	17	0.36	3.10	1.0	8	85	-	3.0	0.22	4.8	2.20	0.28	13.7	11.74	1.81	0.42	0.17	3.1
40-63	8.6	8.0	33	0.75	6.02	-	4	43	-	1.4	0.21	3.1	0.86	0.27	10.1	8.14	1.58	0.42	0.07	4.2
63-90	8.9	8.2	28	0.67	6.51	-	<2	42	-	0.75	0.19	1.6	0.28	0.28	6.8	4.03	2.35	0.79	0.10	11.6

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](#)

