

## HIGHLY CALCAREOUS SANDY LOAM (Sandy Wookata soil)

**General Description:** *Very highly calcareous sandy loam with variable rubble, grading to medium to coarse grained windblown material*

**Landform:** Very gently undulating flats.

**Substrate:** Medium to coarse grained  
very highly calcareous  
windblown Woorinen  
Formation deposits.

**Vegetation:** Mallee.

**Type Site:** Site No.: EW092

1:50,000 sheet: 5733-2 (Pimbaacla)

Hundred: Petina

Annual rainfall: 310 mm

Sampling date: 24/11/93

Landform: Very gentle slope of 1%

Surface: Soft with no stones

### Soil Description:

Depth (cm)	Description
0-10	Strong brown friable highly calcareous sandy loam with weak fine subangular blocky structure. Clear to:
10-30	Brown soft very highly calcareous light sandy loam with 2-10% carbonate concretions (2-6 mm). Clear to:
30-70	Light brown loose very highly calcareous loamy sand with 10-20% carbonate concretions (2-6 mm). Clear to:
70-100	Light brown soft very highly calcareous sand with 2-10% carbonate concretions (2-6 mm). Clear to:
100-200	Light brown soft very highly calcareous coarse sandy clay loam (Class III A carbonate).



**Classification:** Supravescent, Regolithic, Hypercalcic Calcarosol; medium, non-gravelly, loamy / sandy, very deep

## Summary of Properties

<b>Drainage</b>	Rapidly drained. The soil never remains wet for more than a few hours.
<b>Fertility</b>	Inherent fertility is low, with moderately low nutrient retention capacity in the topsoil, decreasing with depth. Regular phosphorus applications are necessary - concentrations at the sampling site are high. Nitrogen levels depend on legume component of pastures and cropping history. The high carbonate concentrations reduce the availability of manganese, copper and zinc, and deficiencies of all three are likely from time to time. Organic carbon concentrations are high.
<b>pH</b>	Alkaline at the surface, strongly alkaline at depth.
<b>Rooting depth</b>	150 cm in pit, but few roots below 70 cm.
<b>Barriers to root growth</b>	
<b>Physical:</b>	There are no physical barriers.
<b>Chemical:</b>	High pH from 70 cm and high sodicity from 100 cm restrict root growth. Low subsoil fertility contributes to the reduction of root densities with depth (within the wetted zone).
<b>Water holding capacity</b>	Approximately 95 mm in the root zone.
<b>Seedling emergence:</b>	Satisfactory.
<b>Workability:</b>	Soft surface is easily worked.
<b>Erosion Potential</b>	
<b>Water:</b>	Low.
<b>Wind:</b>	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	
0-10	8.4	7.6	55	0.21	1.29	1.6	41	420	-	2.6	0.40	2.7	6.3	0.97	6.9	8.24	1.14	0.06	0.95	0.90
10-30	8.9	7.7	58	0.13	0.55	0.64	5.0	370	-	1.7	0.57	1.2	2.2	0.33	5.8	6.05	1.10	0.21	0.84	3.6
30-70	9.0	7.8	65	0.29	2.71	0.21	3.4	200	-	2.9	0.45	0.79	0.74	0.21	3.9	2.29	2.18	0.40	0.47	10.3
70-100	9.6	8.0	71	0.37	4.21	0.13	3.2	520	-	11	0.23	0.77	0.34	0.17	3.2	0.86	2.26	0.66	1.06	20.6
100-200	10.1	8.0	72	0.46	3.54	0.12	3.6	430	-	8.5	0.20	0.89	0.39	0.19	2.6	0.54	0.46	1.67	0.79	64.2

**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