

VERY HIGHLY CALCAREOUS LOAMY SAND (Wookata soil)

General Description: *Very highly calcareous loamy sand to sandy loam, becoming slightly more clayey at depth with variable carbonate rubble*

Landform: Undulating low rises with sand spreads.

Substrate: Very highly calcareous windblown sandy loam.

Vegetation:



Type Site: Site No.: EC078

1:50,000 sheet: 5831-2 (Talia)	Hundred: Wright
Annual rainfall: 360 mm	Sampling date: 30/3/93
Landform: Upper slope of a gently undulating rise, 2% slope	
Surface: Loose with no stones	

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Brown soft very highly calcareous sandy loam. Clear to
10-25	Brown soft very highly calcareous loamy sand with minor carbonate concretions (6-20 mm). Gradual to:
25-55	Light brown soft very highly calcareous loamy sand with 2-10% carbonate concretions (20-60 mm). Gradual to:
55-110	Light brown soft very highly calcareous loamy sand with 20-50% carbonate concretions (20-60 mm). Gradual to:
110-180	Light grey soft very highly calcareous sandy loam with 20-50% carbonate concretions (20-60 mm).



Classification: Supravescent, Regolithic, Supracalcic Calcarosol; medium, non-gravelly, loamy / loamy, deep

Summary of Properties

Drainage	Rapidly drained. The soil is never wet for more than a few hours.
Fertility	Inherent fertility is low. Low clay content limits nutrient retention capacity, and very high carbonate content to the surface reduces availability of phosphorus and trace elements. Regular phosphorus applications are essential - levels are high at sampling site. Copper concentrations are low. Organic carbon levels are very high.
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	180 cm in pit, but few roots below 55 cm.
Barriers to root growth	
Physical:	There are no physical barriers.
Chemical:	High pH, sodicity and salinity restrict deep root growth.
Water holding capacity	Approximately 70 mm in the root zone.
Seedling emergence:	Satisfactory.
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	8.4	7.9	62	0.18	0.81	2.6	49	430	-	2.8	0.17	6.0	3.70	0.57	15.8	13.43	2.09	0.10	1.28	0.6
10-25	9.4	8.6	68	0.23	1.13	1.4	4	520	-	8.1	0.12	2.8	0.78	0.21	12.2	6.44	4.89	0.74	1.47	6.1
25-55	10.0	9.0	73	0.98	8.28	0.8	<2	760	-	21	0.15	1.7	0.79	0.27	10.8	1.27	4.84	4.49	2.02	41.6
55-110	10.2	8.8	78	1.37	11.86	-	<2	820	-	27	0.11	1.6	0.65	0.23	9.9	0.34	3.23	6.57	2.09	66.4
110-180	10.2	8.8	78	1.56	15.20	-	<2	710	-	25	0.14	1.3	0.76	0.33	8.7	0.44	2.05	6.63	1.78	76.2

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.