

DEEP BLEACHED SAND (Lowan soil)

General Description: *Deep bleached sand, organically darkened at the surface, with a yellow or brown sandy subsoil at moderate depth*

Landform: Undulating dune field

Substrate: Windblown Lowan Sand overlying Tertiary sandy clay.

Vegetation:



Type Site: Site No.: EE046

1:50,000 sheet: 6131-2 (Carapsee)
Annual rainfall: 365 mm
Landform: Dune slope
Surface: Loose with no stones

Hundred: Campoona
Sampling date: 13/04/89

Soil Description:

Depth (cm)	Description
0-8	Brown loose sand. Clear to:
8-35	Very pale brown (bleached) loose sand. Gradual to:
35-70	Brownish yellow loose sand. Clear to:
70-130	Yellow loose sand with orange clayey sand lamellae. Diffuse to:
130-195	Yellow loose sand with orange clayey sand lamellae. Gradual to:
195-220	Brownish yellow firm massive clayey sand. Gradual to:
220-	Red hard massive sandy clay.



Classification: Basic, Argic, Bleached-Orthic Tenosol; thin, non-gravelly, sandy / sandy, very deep

Summary of Properties

Drainage	Rapidly drained. Soil never remains wet for more than a few hours.
Fertility	Inherent fertility is very low, as indicated by the exchangeable cation data. Deficiencies of a range of nutrients are possible – nutrient retention capacity is low due to low clay and organic matter contents. Phosphorus, zinc and copper are all deficient according to the analyses. Sulphur levels are also likely to be low, and manganese deficiency is likely in lupins.
pH	Slightly acidic at the surface, neutral with depth.
Rooting depth	Not recorded. Potential depth is 220 cm, but low nutrient retention capacity limits this to approximately 70 cm.
Barriers to root growth	
Physical:	There are no physical barriers.
Chemical:	There are no chemical barriers, but low nutrient status and retention capacity will limit growth.
Water holding capacity	Approximately 40 mm in the root zone.
Seedling emergence:	Satisfactory, except in dry seasons when water repellence is a problem
Workability:	Loose surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	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 -S 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	
0-8	6.4	5.5	0	0.11	0.59	0.58	13.0	-	-	0.2	0.16	11.3	3.44	0.25	1.60	1.50	0.19	0.31	0.08	19.4
8-35	6.7	5.6	0	0.05	0.13	<0.1	4.2	-	-	0.1	0.12	19.9	0.04	0.09	0.47	0.30	0.06	0.11	0.04	23.4
35-70	6.8	6.1	0	0.03	0.16	<0.1	2.6	-	-	0.1	0.11	5.1	0.01	0.11	0.46	0.30	0.13	0.09	0.04	19.6
70-130	7.2	6.3	0	0.02	0.16	<0.1	3.6	-	-	0.2	0.11	9.1	0.07	0.07	0.72	0.32	0.16	0.09	0.05	12.5
130-195	7.1	6.2	0	0.02	0.13	<0.1	4.0	-	-	0.2	0.11	4.9	0.04	0.04	0.66	0.31	0.15	0.15	0.06	22.7
195-220	7.1	6.3	0	0.03	0.21	<0.1	3.6	-	-	0.4	0.17	4.4	0.07	0.06	1.40	0.66	0.44	0.12	0.11	8.6
220+	8.2	7.0	0	0.08	0.40	<0.1	3.6	-	-	4.72	0.22	5.91	0.07	0.08	13.0	5.00	1.10	1.10	0.84	8.5

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