

HIGHLY CALCAREOUS LOAMY SAND

(Haslam / Wookata soil)

General Description: *Highly calcareous loamy sand becoming slightly more clayey and very highly calcareous with variable rubbly carbonate at depth*

Landform: Low rises with sand spreads.

Substrate: Very highly calcareous windblown sand over finer grained Woorinen Formation sediments

Vegetation: Mallee.

Type Site: Site No.: EC081 1:50,000 mapsheet: 5931-1 (Palabie)
 Hundred: Palabie Easting: 540610
 Section: 7 Northing: 6329200
 Sampling date: 31/3/1993 Annual rainfall: 330 mm average

Upper slope of low rise, 3% slope. Loose surface with no stones.

Soil Description:

Depth (cm)	Description
0-10	Brown soft very highly calcareous light sandy loam. Gradual to:
10-30	Light brown soft very highly calcareous loamy sand with 10-20% carbonate concretions. Gradual to:
30-50	Light brown soft very highly calcareous loamy sand with 2-10% carbonate concretions. Clear to:
50-64	Light brown soft very highly calcareous loamy fine sand with 20-50% carbonate concretions (20-60 mm). Clear to:
64-92	Pink soft very highly calcareous sandy loam with minor carbonate concretions. Gradual to:
92-150	Pink soft very highly calcareous sandy clay loam with 2-10% carbonate concretions (2-20 mm).



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



Summary of Properties

- Drainage:** Rapidly drained. The soil never remains wet for more than a few hours.
- Fertility:** Inherent fertility is low. High carbonate content to the surface reduces availability of phosphorus and trace elements, and low clay content restricts nutrient retention capacity. Regular phosphate applications are necessary - levels are high at sampling site. Nitrogen status depends on legume content of pastures and cropping history. Copper, zinc and manganese deficiencies may be expected from time to time - copper levels are low at sampling site. Organic carbon concentrations are high.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 30 cm in pit.
- Barriers to root growth:**
- Physical:** There are no physical barriers.
 - Chemical:** High pH and high sodicity from 64 cm limit deeper root growth, but low nutrient status and retention capacity below the upper 10 cm is limiting root depth.
- Waterholding capacity:** Approximately 50 mm in the potential rootzone.
- Seedling emergence:** Satisfactory, although surface soil is water repellent in some seasons, reducing establishment.
- Workability:** Loose surface is easily worked.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Moderate to 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	8.6	8.1	14	0.11	0.61	1.0	45	250	-	1.6	0.18	1.9	3.70	1.00	7.5	6.14	0.78	0.08	0.57	1.1
10-30	8.9	8.2	26	0.10	0.38	0.5	3	270	-	2.0	0.24	1.4	1.40	0.26	6.3	5.80	1.14	0.10	0.65	1.6
30-50	9.0	8.3	34	0.12	0.44	-	3	240	-	1.4	0.22	1.0	0.67	0.25	6.4	4.20	2.11	0.15	0.58	2.3
50-64	9.4	8.6	38	0.17	0.67	-	3	130	-	4.2	0.16	1.2	0.41	0.43	6.1	2.23	4.06	0.60	0.25	9.8
64-92	9.8	8.6	34	0.28	1.40	-	<2	180	-	12	0.19	1.5	0.47	0.39	5.1	0.99	3.34	1.47	0.43	28.8
92-150	9.9	8.5	32	0.54	4.93	-	<2	230	-	12	0.21	1.4	0.50	0.65	5.0	0.94	2.29	1.91	0.57	38.2

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.

Further information: [DEWNR Soil and Land Program](#)

