

DEEP SAND

General Description: *Deep sand, calcareous throughout and grading to a Class IV carbonate layer below 100 cm*

Landform: Slopes and crests of sandhills and sandy rises in the dune-swale landscape of the Gulf Plains

Substrate: Molineaux Sand, calcified by windblown carbonates leached into the soil

Vegetation: Mallee



Type Site: Site No.: CU020
1:50,000 sheet: 6531-3 (Crystal Brook) Hundred: Napperby
Annual rainfall: 375 mm Sampling date: 16/12/92
Landform: Crest of sandhill
Surface: Loose with no stones

Soil Description:

Depth (cm)	Description
0-10	Reddish brown loose moderately calcareous light loamy sand. Clear to:
10-45	Yellowish red loose highly calcareous light loamy sand. Gradual to:
45-85	Reddish yellow loose highly calcareous light loamy sand. Diffuse to:
85-150	Yellowish red loose highly calcareous light loamy sand, with traces of fine carbonate. Gradual to:
150-175	Red soft highly calcareous clayey sand, with up to 10% fine carbonate segregations (Class IV carbonate).



Classification: Ceteric, Regolithic, Calcic Calcarosol; very thick, non-gravelly, sandy / sandy, very deep

Summary of Properties

Drainage	Rapidly drained. The soil is never wet for more than a few hours.
Fertility	Natural fertility is low, because of low clay and organic matter contents. The capacity of the soil to store applied nutrients is low, so frequent light applications are required. Leaching is a potential problem, although there is no evidence of this at the type site, even though surface phosphorus and potassium levels are high.
pH	Alkaline throughout.
Rooting depth	175 cm in pit, but few roots below 150 cm.
Barriers to root growth	
Physical:	None.
Chemical:	Low fertility and susceptibility to root diseases are the main limitations, although at the pit site, root growth is good.
Water holding capacity	120 mm in root zone, most of which is available to plants.
Seedling emergence	Good, except where water repellent.
Workability	Good.
Erosion Potential	
Water:	Low.
Wind:	Moderate to 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	
Paddock	8.4	8.0	1	0.11	0.75	0.41	30	450	-	0.5	-	-	-	-	4.4	4.72	0.57	0.08	0.87	na
0-10	8.4	8.0	1	0.10	0.49	0.34	20	310	-	0.4	-	-	-	-	3.9	4.60	0.50	0.10	0.61	na
10-45	8.9	8.3	3	0.08	0.42	0.04	<2	170	-	0.6	-	-	-	-	3.3	4.01	0.50	0.08	0.35	na
45-85	8.9	8.3	2	0.07	0.20	0.07	<2	94	-	0.7	-	-	-	-	3.5	3.93	0.77	0.09	0.19	na
85-150	8.9	8.2	2	0.07	0.20	0.02	<2	100	-	1.3	-	-	-	-	3.2	4.42	0.60	0.09	0.21	na
150-175	8.2	7.9	3	1.14	2.09	0.03	<2	130	-	3.1	-	-	-	-	5.0	8.40	0.63	0.09	0.32	1.8

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

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.