

SAND OVER BROWN SANDY CLAY LOAM

(Shallow Moornaba soil)

General Description: *Sand over red or brown sandy clay loam, highly calcareous at shallow depth*

Landform: Dune - swale system on gentle slopes.

Substrate: Tertiary clay.

Vegetation:

Type Site:	Site No.:	EL031	1:50,000 mapsheet:	6130-3 (Hincks)
	Hundred:	Butler	Easting:	607550
	Section:	19	Northing:	6237850
	Sampling date:	26/02/1992	Annual rainfall:	375 mm average

Midslope of 4% between sandhills. Loose surface with minor calcrete stone (2-10 mm).

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-7	Dark brown loose slightly calcareous loamy sand. Abrupt to:
7-24	Light brown hard massive moderately calcareous sandy clay loam. Clear to:
24-43	Pinkish grey hard massive very highly calcareous fine sandy loam with 20-50% carbonate nodules. Clear to:
43-56	Light reddish brown hard very highly calcareous sandy light clay with weak angular blocky structure. Clear to:
56-122	Very pale brown hard very highly calcareous medium clay with moderate subangular blocky structure and 20-50% carbonate nodules. Clear to:
122-	Brownish yellow hard medium clay with moderate subangular blocky structure and ironstone gravel.



Classification: Supracalcic, Subnatric, Brown Sodosol; thin, non-gravelly, sandy / clay loamy, shallow



Summary of Properties

Drainage:	Well drained. Soil rarely remains wet for more than a few days.
Fertility:	Inherent fertility is moderately low, as indicated by the exchangeable cation data. Regular phosphorus applications are essential. Nitrogen levels depend on cropping history and legume content of pastures. Zinc and copper deficiencies occur occasionally. Organic carbon concentrations are marginal.
pH:	Alkaline throughout.
Rooting depth:	Few roots below 56 cm in pit.
Barriers to root growth:	
Physical:	The hard massive subsoil restricts vigorous root development.
Chemical:	There are no chemical barriers in the upper metre of soil. Low nutrient retention capacity is the main reason for limitations on rootzone depth.
Waterholding capacity:	Approximately 60 mm in the rootzone.
Seedling emergence:	Satisfactory although water repellence has an adverse effect in dry seasons.
Workability:	Loose to soft surface is easily worked.
Erosion Potential:	
Water:	Moderately low.
Wind:	Moderate.

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	
0-7	7.8	7.6	1	0.1	0.8	0.85	31	-	6.9	1.2	0.16	5.9	4.22	0.31	5.8	5.06	0.57	0.54	0.48	9.3
7-24	8.0	7.8	5	0.1	0.5	0.67	8	-	6.0	1.0	0.08	3.2	0.36	0.07	8.9	7.78	0.75	0.59	0.81	6.6
24-43	8.2	7.8	24	0.1	0.4	-	-	-	5.5	0.9	0.11	2.9	0.40	0.08	6.6	6.74	0.69	0.58	0.40	8.8
43-56	8.0	7.8	13	0.1	0.3	-	-	-	4.8	1.3	0.27	10.4	7.73	0.09	11.2	8.76	2.23	0.67	0.49	6.0
56-122	9.2	8.0	29	0.3	0.9	-	-	-	23	5.8	0.13	7.1	6.25	0.05	14.1	4.92	6.20	2.95	1.07	20.9
122+	9.6	8.5	6	0.7	3.1	-	-	-	59	16.0	0.14	3.7	0.75	0.13	13.4	1.44	4.69	7.69	1.16	57.4

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](#)

