

SAND OVER DISPERSIVE CLAY ON CALCRETE

General Description: *Medium thickness loamy sand over a coarsely structured dispersive brown or grey clay, calcareous with depth over calcrete*

Landform: Level plain.

Substrate: Calcrete capped clay or limestone.

Vegetation:



Type Site: Site No.: SE018

1:50,000 sheet: 6924-2 (Lucindale)

Hundred: Joyce

Annual rainfall: 600 mm

Sampling date: 10/05/94

Landform: Plain

Surface: Soft (but prone to compaction) with no stones

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Very dark brown soft massive loamy fine sand. Gradual to:
10-22	Dark greyish brown and yellowish brown soft massive fine sand. Sharp to:
22-30	Brown and yellowish brown very hard heavy clay with strong coarse prismatic structure. Gradual to:
30-50	Yellowish brown hard highly calcareous medium clay with strong polyhedral structure, 10-20% fine carbonate segregations and 2-10% carbonate concretions (20-60 mm). Sharp to:
50-70	Calcrete pan.



Classification: Hypercalcic, Mottled-Subnatric, Brown Sodosol; medium, non-gravelly, sandy / clayey, moderate

Summary of Properties

Drainage Imperfectly drained. The dispersive clayey subsoil perches water for several weeks at a time following heavy or prolonged rainfall.

Fertility Inherent fertility is moderate, as indicated by the exchangeable cation data. The surface soil has satisfactory nutrient retention capacity provided that organic matter levels are maintained. Phosphorus levels are low, but concentrations of other tested elements are satisfactory at the sampling site.

pH Neutral to slightly alkaline at the surface, alkaline with depth.

Rooting depth 30 cm in pit.

Barriers to root growth

Physical: Root growth in the dispersive clayey subsoil is restricted to the aggregate surfaces, so densities are low. No growth occurs past the calcrete.

Chemical: There are no chemical barriers to root growth.

Water holding capacity Approximately 50 mm in the root zone.

Seedling emergence: Fair due to the susceptibility of the surface to compaction.

Workability: The surface soil is easily worked, unless severely compacted.

Erosion Potential

Water: Low.

Wind: Low.

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	7.5	7.1	0.1	0.50	3.53	3.3	18	143	-	2.4	0.3	83	2.2	3.6	11.2	7.1	2.1	1.39	0.35	12.4
0-10	7.5	7.2	0.2	0.18	1.14	2.6	12	146	-	2.0	0.7	74	6.1	2.5	10.8	6.8	1.8	0.61	0.36	5.6
10-22	7.7	7.1	0.1	0.09	0.85	0.6	5	70	-	0.9	0.4	33	0.9	0.5	4.4	2.7	0.7	0.59	0.13	13.4
22-30	8.2	7.6	0.7	0.26	1.29	1.3	7	125	-	2.9	0.6	72	1.2	0.8	16.7	10.0	2.8	2.01	0.41	12.0
30-50	8.6	7.9	45.0	0.34	1.73	0.5	<4	295	-	6.6	<0.1	15	0.1	0.2	20.9	11.1	4.4	2.25	1.07	10.8
50-70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Paddock sample bulked from 20 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.