SANDY LOAM OVER RED CLAY

General Description: *Thick sandy loam grading to a sandy clay loam over a coarsely structured red clay, calcareous with depth*

Landform: Lower slopes and valley flats

Substrate: Medium to coarse textured alluvium, mantled by secondary carbonate (Pooraka Formation)

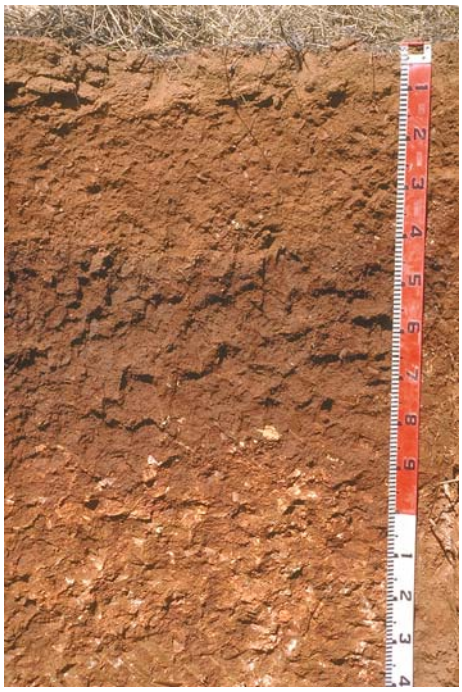
Vegetation:

Type Site: Site No.: CU026

1:50,000 sheet:	6631-4 (Jamestown)	Hundred:	Belalie
Annual rainfall:	450 mm	Sampling date:	25/02/93
Landform:	Lower slope of broad outwash fan, 2% slope		
Surface:	Firm with no stones		

Soil Description:

Depth (cm)	*Description*
0-11	Dark reddish brown friable sandy loam with moderate granular structure. Clear change to:
11-40	Dark reddish brown friable fine sandy clay loam with moderate polyhedral structure and 2-10% siltstone fragments. Abrupt change to:
40-90	Dark red firm heavy clay with strong coarse prismatic structure and 2-10% siltstone fragments. Clear change to:
90-140	Dark reddish brown friable moderately calcareous light clay with moderate blocky structure, 10-20% soft carbonate segregations and 2-10% calcrete fragments. Class I carbonate.



Classification: Calcic, Subnatric, Red Sodosol; medium, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage Moderately well to well drained. The heavy clay layer from 40 cm is only slowly permeable, but the clayey layer above is permeable. The soil is unlikely to remain wet for more than a week or so.

Fertility The soil has moderate inherent fertility, as indicated by the CEC values. The exchangeable cation data indicate that the proportion of calcium is low, with consequent adverse effects on soil structure. Subsoil zinc levels are low.

pH Neutral at the surface, grading to strongly alkaline with depth.

Rooting depth 90 cm in pit.

Barriers to root growth

Physical: The coarsely structured, hard and mildly sodic heavy clay layer is the main physical impediment to root growth.

Chemical: Low subsoil zinc levels may indicate a barrier to roots. The Class I carbonate layer is the main root restricting layer.

Water holding capacity 120 mm in root zone (high).

Seedling emergence Good, as long as surface structure is maintained. Organic carbon levels should be maintained at current satisfactory levels.

Workability Good, provided surface structure is maintained.

Erosion Potential

Water: Moderately low.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	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	7.2	6.5	0	0.11	0.71	1.5	32	993	-	1.4	0.7	18	20.1	1.5	8.3	6.16	2.20	0.08	0.94	1.0
0-11	7.0	6.3	0	0.10	0.60	1.7	32	641	-	1.4	0.9	22	23.2	0.9	8.5	6.16	1.84	0.11	1.02	1.3
11-40	7.2	6.3	0	0.05	0.26	0.6	12	574	-	1.7	1.2	8	17.3	0.2	7.8	4.86	1.98	0.14	0.75	1.8
40-90	7.6	6.9	0	0.08	0.20	0.5	4	493	-	6.8	1.3	11	6.6	0.1	28.7	9.97	10.37	2.82	1.10	9.8
90-140	9.0	8.2	17.0	0.30	0.86	0.2	5	398	-	5.7	0.6	6	1.7	0.1	18.5	6.72	8.02	3.78	0.60	20.4

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.