

HARD SANDY LOAM OVER RED CLAY (Sandy red brown earth)

General Description: *Thick sandy loam over a well structured red clay*

Landform: Gently undulating rises.

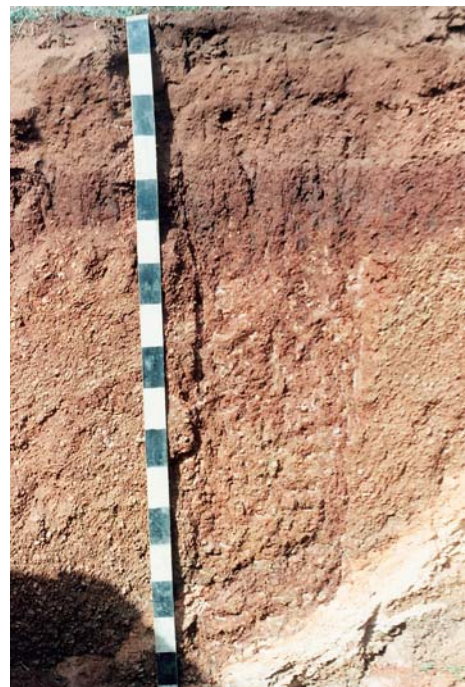
Substrate: Deeply weathered granite.

Vegetation:

Type Site: Site No.: EL009
1:50,000 sheet: 6129-3 (Tumby) Hundred: Yaranyacka
Annual rainfall: 310 mm Sampling date: 27/03/92
Landform: Gentle slope of 4-6%
Surface: Hard setting with 10-20% gneiss stones (60-200 mm) and 2-10% gneiss and granite outcrop.

Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown friable massive coarse sandy loam. Clear to:
10-22	Dark reddish brown friable massive coarse sandy clay loam with 2-10% granite fragments. Clear to:
22-40	Reddish brown friable massive coarse sandy clay loam with 20-50% granite fragments. Abrupt to:
40-60	Dark reddish brown hard medium clay with coarse prismatic breaking to fine subangular blocky structure and 2-10% weathering granite fragments. Diffuse to:
60-157	Yellowish red very hard massive medium clay with more than 50% weathering granite fragments. Abrupt to:
157-180	Weathering granite with quartz veins and fine carbonate segregations.



Classification: Eutrophic, Subnatric, Red Sodosol; thick, gravelly, loamy / clayey, deep

Summary of Properties

Drainage	Moderately well drained. Soil rarely remains wet for more than a week or so following heavy or prolonged rainfall.
Fertility	Inherent fertility is moderate, as indicated by the exchangeable cation data. Higher organic carbon concentrations (low at sampling site) would improve nutrient retention capacity. Phosphorus levels are also low - regular applications are essential.
pH	Slightly acidic at the surface, alkaline with depth
Rooting depth	60 cm in pit.
Barriers to root growth	
Physical:	The clayey subsoil retards root growth to some extent.
Chemical:	pH and sodicity below 60 cm are likely to be high enough to severely limit root growth.
Water holding capacity	Approximately 65 mm in the root zone.
Seedling emergence:	Fair due to hard setting surface which tends to seal over. Increased organic matter levels will help overcome the problem.
Workability:	The soil has a limited surface soil moisture content for effective cultivation. If worked too wet the soil will puddle and if worked too dry, it will shatter.
Erosion Potential	
Water:	Moderately low due to the slope.
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 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	6.6	6.1	0	0.1	1.1	0.80	11	-	5.6	1.3	0.79	11.5	18.4	0.24	9.7	6.8	1.4	0.25	1.66	3
10-22	6.7	6.5	0	0.1	0.7	0.28	3	-	7.5	1.0	0.44	19.4	1.61	0.64	8.2	5.9	1.6	0.20	1.14	2
22-40	7.2	6.3	0	0.1	-	0.28	3	-	3.5	1.1	0.44	19.4	1.61	0.64	6.7	4.5	2.1	0.24	0.53	4
40-60	8.3	7.3	0	0.4	2.0	-	-	-	22	5.0	0.26	24.9	1.05	0.26	22.7	9.3	9.4	3.00	1.50	13

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