

GRADATIONAL RED CLAY LOAM ON ROCK

General Description: *Reddish brown clay loam overlying a red well structured clay forming in carbonate capped basement rock*

Landform: Gently to moderately inclined slopes

Substrate: Soft carbonate capping sandstone

Vegetation:



Type Site: Site No.: CM053

1:50,000 sheet: 6630-1 (Burra) Hundred: Kingston

Annual rainfall: 400 mm Sampling date: 02/08/94

Landform: Lower slope of undulating low hills, 2% slope

Surface: Hard setting with 2-10% quartzite stones

Soil Description:

Depth (cm)	Description
0-12	Red clay loam with weak granular structure and 2-10% quartzite and shale gravel. Abrupt to:
12-35	Red medium clay with strong fine polyhedral structure and 2-10% sandstone gravel. Clear to:
35-55	Red medium clay with strong medium polyhedral structure and 10-20% sandstone gravel. Clear to:
55-75	Orange massive highly calcareous clay loam with more than 50% sandstone fragments. Clear to:
75-90	Weathering sandstone.



Classification: Haplic, Hypercalcic, Red Dermosol; medium, slightly gravelly, clay loamy / clayey, moderate

Summary of Properties

- Drainage** Well drained. The subsoil clay holds up water to some extent, but is well structured and should not cause saturation for more than a few days following rain.
- Fertility** The natural fertility is high. There are no deficiencies of any of the measured nutrient elements, although zinc may be marginal. Nitrogen status could be improved by raising organic matter levels.
- pH** Slightly acidic at the surface, alkaline with depth.
- Rooting depth** 75 cm in pit but very few roots below 55 cm.
- Barriers to root growth**
- Physical:** Hard sandstone at moderately shallow depth defines maximum root depth.
 - Chemical:** High fine grained carbonate content below 55 cm is the main reason for poor root growth from that depth.
- Water holding capacity** Approximately 80 mm in root zone.
- Seedling emergence** Fair to good - tendency for surface sealing.
- Workability** Fair to good - limited moisture range for effective working.
- Erosion Potential**
- Water:** Moderately 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	6.6	5.7	0	0.09	0.06	1.2	40	506	13.9	1.2	-	-	-	-	8.4	3.39	0.96	0.09	1.02	1.1
0-12	6.4	5.4	0	0.06	0.46	1.4	50	537	11.8	1.3	-	-	-	-	7.6	4.07	1.11	0.10	1.22	1.3
12-35	6.6	5.5	0	0.04	0.29	0.8	16	470	4.7	1.0	-	-	-	-	10.1	4.91	1.42	0.15	0.96	1.5
35-55	7.4	6.5	0.1	0.07	0.29	0.8	4	397	3.0	0.8	-	-	-	-	24.1	17.3	5.46	0.57	1.48	2.4
55-75	8.8	7.8	34.3	0.10	0.38	0.5	3	180	3.7	0.8	-	-	-	-	10.0	8.96	2.81	0.28	0.38	2.8

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.