

GRADATIONAL RED CLAY

General Description: *Friable medium to fine textured surface soil overlying a reddish brown well structured clay, highly calcareous with depth, formed over fine grained bedrock*

Landform: Gently undulating to undulating rises

Substrate: Medium to fine grained basement rock, strongly calcified

Vegetation: Blue gum woodland



Type Site: Site No.: CM037

1:50,000 sheet:	6630-2 (Apoinga)	Hundred:	Hanson
Annual rainfall:	450 mm	Sampling date:	20/05/93
Landform:	Upper slope of a very gently undulating rise, 1% slope		
Surface:	Self-mulching with minor ironstone gravel		

Soil Description:

Depth (cm)	Description
0-10	Dark red friable medium clay with blocky structure. Clear to:
10-30	Dark red heavy clay with strong prismatic breaking to blocky structure. Diffuse to:
30-60	Dark red medium clay with strong blocky structure. Clear to:
60-90	Yellowish red highly calcareous light medium clay with weak polyhedral structure, 20-50% soft carbonate segregations and about 10% sandstone fragments. Gradual to:
90-130	Red highly calcareous light medium clay with weak polyhedral structure, 20-50% soft carbonate segregations and up to 50% sandstone fragments. Gradual to:
130-140	Weathering ferruginized fine sandstone.



Classification: Haplic, Hypercalcic, Red Dermosol; medium, non-gravelly, clayey / clayey, deep

Summary of Properties

Drainage	The soil is moderately well drained and is unlikely to remain wet for more than a week at a time.
Fertility	The soil has a very high level of natural fertility, as indicated by the exchangeable cation data. Organic carbon and phosphorus are also high, indicating good surface nutrition.
pH	Slightly acidic at the surface, becoming alkaline with depth.
Rooting depth	90 cm in sampling pit.
Barriers to root growth	
Physical:	There are no physical barriers above the weathering rock, which would limit the rooting depth if it occurred within a metre of the surface.
Chemical:	There are no apparent chemical barriers to root growth.
Water holding capacity	Approximately 140 mm in root zone.
Seedling emergence	Good.
Workability	Good.
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	6.0	5.7	0	0.13	0.68	2.7	50	950	-	2.5	1.5	51	35.9	0.5	24.1	13.45	3.45	0.21	2.40	0.9
0-10	6.5	6.4	0	0.17	0.76	2.5	36	1103	-	2.6	1.4	25	26.8	0.4	30.8	20.47	3.98	0.22	3.10	0.7
10-30	6.9	6.7	0	0.08	0.28	1.3	9	875	-	3.9	1.2	10	11.6	0.2	34.7	23.33	4.33	0.28	2.74	0.8
30-60	7.9	7.6	0.2	0.12	0.23	0.8	4	368	-	3.1	1.1	7	3.6	<0.1	39.9	27.43	6.16	0.46	1.24	1.2
60-90	8.3	7.9	41.4	0.15	0.33	0.3	6	210	-	2.4	0.7	5	1.9	<0.1	23.7	16.18	5.50	0.50	0.73	2.1
90-130	8.6	8.0	35.7	0.17	0.36	0.4	4	281	-	3.5	0.6	5	2.0	<0.1	21.0	12.06	6.77	0.96	0.81	4.6

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.