

KA3: Melacic, Dystrophic, Red Kandosol

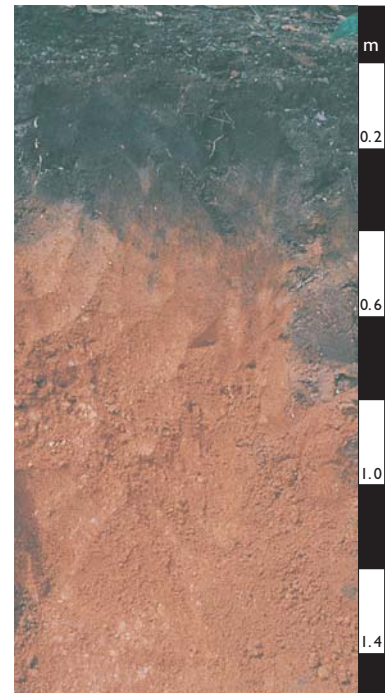
General description of the soil

A Red Kandosol with a dark, strongly acid A horizon and a thick B2 horizon which has a very low base status (i.e. Dystrophic).

Distribution:	Mainly found in high rainfall (>2000 mm) parts of eastern Australia on granite-derived fans.
Typical land use:	Some areas cleared for sugar cane.
Common variants:	The thickness of the B horizon may be considerably less.
World Reference Base:	Geric Ferralsol.
Other names:	Also known as Red Earths.

Environment and location of the example profile

Landform:	Undulating alluvial fan.
Parent material or substrate:	Granitic alluvium/colluvium.
Drainage class:	Well-drained.
Surface condition:	Firm.
Site disturbance:	No effective disturbance.
Native vegetation:	Tall woodland (includes <i>Eucalyptus pellita</i> and <i>Acacia mangium</i>).

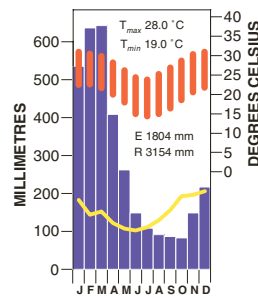


Tully district, north Queensland

Site location



Site climate



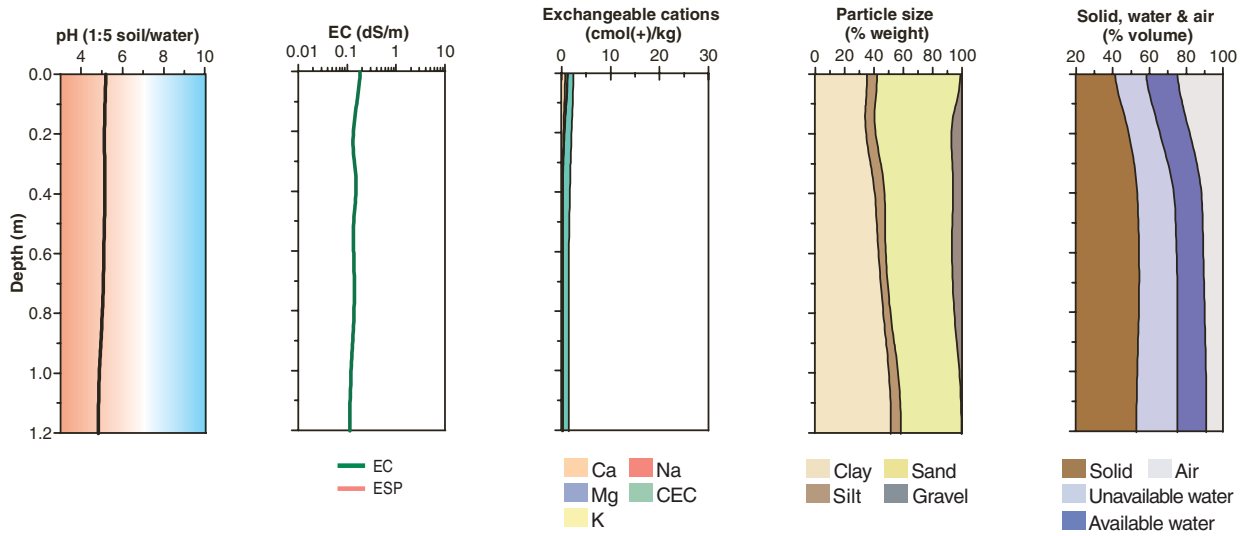
Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A11	0.00–0.10	dark reddish brown (5YR 3/2)	–	sandy loam	weak	cast	5–10 mm	weak (moist)	–	–	
A12	0.10–0.20	dark reddish brown (5YR 3/2)	–	sandy loam	weak	subangular blocky	5–10 mm	weak (moist)	–	–	gradual
A2	0.20–0.30	dark reddish brown (5YR 3/4)	–	sandy loam	massive	–	–	weak (moist)	–	–	gradual
B1	0.30–0.45	dark red (2.5YR 3/6)	–	sandy clay loam	massive	–	–	weak (moist)	–	–	gradual
B2	0.45–2.10+; nearby exposure continues with little change to 4.50 m.	dark reddish brown (2.5YR 3/8)	–	sandy clay loam	massive	–	–	weak (moist)	–	–	

Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H ₂ O ^A	pH CaCl ₂	Elect. Cond. dS/m ^A	CaCO ₃ %	Org. C % ^G	Extr. P mg/kg ^B	Tot. P % ^A	Tot. K % ^A	Cation exchange properties ^I cmol(+)/kg						ESP %	Bulk dens. Mg/m ³	Particle size % ^A				
										Ca	Mg	K	Na	H+Al ^B	CEC			ECEC ^A	CS	FS	Silt	Clay
A11	0.00–0.10	5.2		0.18		3.4	9	0.022	0.140	0.7	0.4	0.1	<0.1	1.7	2	3	–		46	12	7	36
A12	0.10–0.20	5.1		0.13		1.9	5			0.3	0.1	<0.1	<0.1	1.5	2	2	–		50	9	6	35
A2	0.20–0.30	5.1		0.10		1.0	2												44	10	8	38
B1	0.30–0.45	5.2		0.19		0.7	3			0.1	<0.1	<0.1	<0.1	0.5	2	1	–		39	9	8	44
B2	0.45–0.60	5.1		0.11		0.3	3			0.1	<0.1	<0.1	<0.1	0.2	1	<1	–		39	9	4	47
B2	0.60–0.90	5.1		0.15																		
B2	0.90–1.20	4.8		0.11		0.2		0.011	0.080	0.1	0.1	<0.1	<0.1	0.2	2	<1	–		30	11	7	52
B2	1.20–1.50	4.8		0.11																		
B2	1.50–1.80	5.0		0.08																		
B2	1.80–2.10	4.9		0.07																		

Key profile properties



General qualities of the soil

Infiltration:	Rapid.
Available water store:	Large to very large due to profile depth.
Permeability:	High.
Physical root limitations:	None.
Erosion hazard:	Moderate on slopes.
Nutrient availability:	Low.
Toxicities:	None apparent.



Lowlands of the wet tropics, north Queensland

Acknowledgements: Soil image, soil description and laboratory data: CSIRO Land and Water, Profile T262. Landscape image: Bill van Aken, CSIRO.