

## DE2: Acidic, Dystrophic, Red Dermosol

### General description of the soil

A moderately structured Red Dermosol in which the major part of the B2 horizon has a very low base status (i.e. Dystrophic) and is strongly acid (pH <5.5).

<b>Distribution:</b>	A common soil usually formed on acidic parent rocks in the high rainfall zones of eastern Australia.
<b>Typical land use:</b>	Conservation of rainforest and improved pastures where cleared.
<b>Common variants:</b>	Depth to weathered rock is variable and A2 horizons may be absent.
<b>World Reference Base:</b>	Alumic Ferralsol.
<b>Other names:</b>	Red Podzolic Soils and Krasnozems.

### Environment and location of the example profile

<b>Landform:</b>	Lower slope of rolling hills.
<b>Parent material or substrate:</b>	Metamorphic rock.
<b>Drainage class:</b>	Well-drained.
<b>Surface condition:</b>	Firm.
<b>Site disturbance:</b>	Cleared but never cultivated.
<b>Native vegetation:</b>	Rainforest.

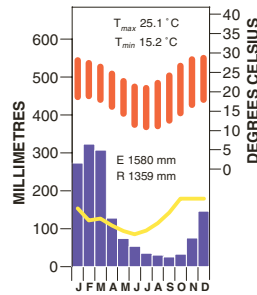


Atherton Tableland, north Queensland

### Site location



### Site climate



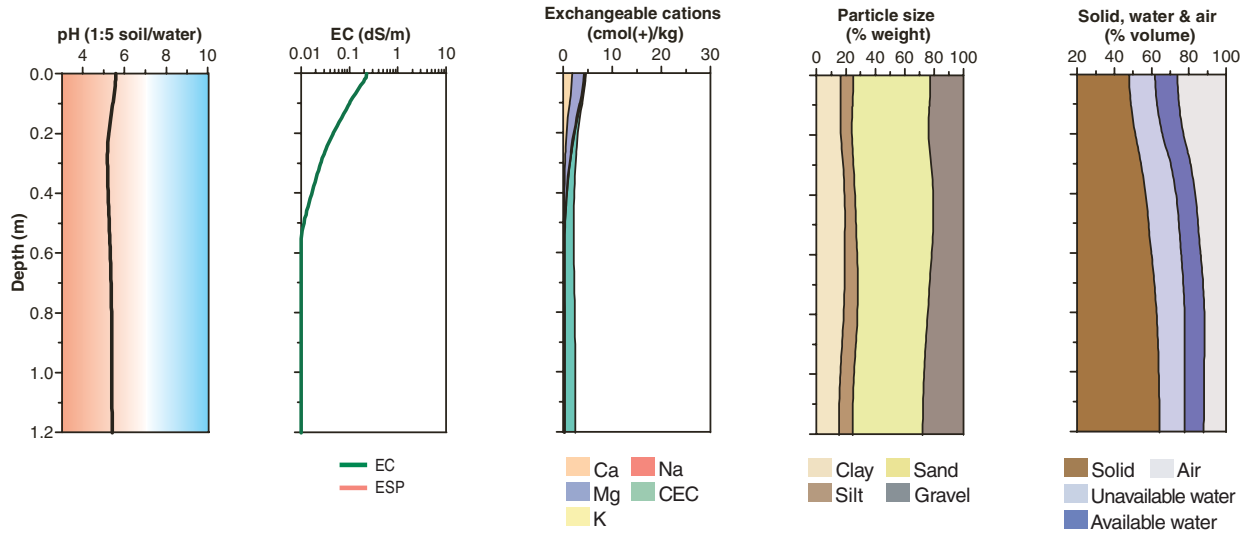
### Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A1	0.00–0.10	dark brown (10YR 3/3)	–	clay loam, fine sandy	moderate	polyhedral	2–5 mm	weak (moderately moist)	10–20% angular metamorphic rock (2–6 mm)	–	gradual
A2	0.10–0.26	brown (7.5YR 4/4)	–	clay loam, fine sandy	moderate	subangular blocky	2–5 mm	weak (moderately moist)	10–20% angular metamorphic rock (2–6 mm)	–	gradual
B21	0.26–0.60	yellowish red (5YR 5/6)	–	fine sandy medium clay	moderate	subangular blocky	5–10 mm	firm (moderately moist)	10–20% angular metamorphic rock (2–6 mm)	–	gradual
B22	0.60–1.20	red (2.5YR 4/8)	–	light medium clay	moderate	subangular blocky	5–10 mm	firm (moderately moist)	10–20% angular metamorphic rock (2–6 mm)	–	clear
Cr	1.20–1.30	moderately to strongly weathered metamorphic rock	–	–	–	–	–	–	–	–	–

### Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H <sub>2</sub> O <sup>A</sup>	pH CaCl <sub>2</sub>	Elect. Cond. dS/m <sup>A</sup>	CaCO <sub>3</sub> %	Org. C % <sup>D</sup>	Extr. P mg/kg <sup>B</sup>	Tot. P % <sup>A</sup>	Tot. K % <sup>A</sup>	Cation exchange properties <sup>A</sup>						ESP %	Bulk dens. Mg/m <sup>3</sup>	Particle size % <sup>A</sup>				
										cmol(+)/kg								CS	FS	Silt	Clay	
										Ca	Mg	K	Na	H+Al <sup>B</sup>	CEC							ECEC <sup>A</sup>
A1	0.00–0.10	5.6		0.04		2.3	7	0.026	1.03	1.7	2.4	0.2	0.1	0.4	4	5	–		22	46	11	21
A2	0.10–0.20	5.3		0.03		1.6				0.5	1.6	0.2	0.1	1.0	3	3	–		23	47	10	21
A2	0.20–0.26	5.1		0.03																		
B21	0.26–0.30	5.1		0.02																		
B21	0.30–0.50	5.2		0.01		0.5		0.018	1.01	0.1	0.1	0.1	<0.1	1.6	2	2	–		21	47	8	25
B21	0.50–0.60	5.3		0.01															18	48	10	24
B22	0.60–0.90	5.4		0.01				0.021	0.91	<0.1	0.2	0.1	<0.1	1.8	2	2	–		14	48	13	26
B22	0.90–1.20	5.4		0.01															14	53	13	21

Key profile properties



General qualities of the soil

<b>Infiltration:</b>	Rapid when organic matter reserves are maintained.
<b>Available water store:</b>	Moderate in the A and B horizons.
<b>Permeability:</b>	High.
<b>Physical root limitations:</b>	None.
<b>Erosion hazard:</b>	Severe on bare cultivated soil.
<b>Nutrient availability:</b>	Very limited following decline of organic matter.
<b>Toxicities:</b>	None apparent.



Rolling hills supporting rainforest with relatively shallow soils but a deeply weathered schistose saprolite – near Tully, north Queensland

Acknowledgements: Soil image, soil description and laboratory data: CSIRO Land and Water. Profile T391. Landscape image: CSIRO.