

DE9: Acidic, Dystrophic, Yellow Dermosol

General description of the soil

A moderately structured Yellow 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).

Distribution:	Known soils seem restricted to acidic parent rocks under a very high rainfall regime in eastern Australia.
Typical land use:	Nature conservation and pasture and cropping when cleared.
Common variants:	Some forms have a paler A2 horizon (rather than a B1) with a fine sandy loam texture.
World Reference Base:	Alumic Ferralsol.
Other names:	Xanthozems and Yellow Podzolic Soils.

Environment and location of the example profile

Landform:	Upper slope of low hills.
Parent material or substrate:	Weathered schist.
Drainage class:	Moderately well-drained.
Surface condition:	Firm.
Site disturbance:	Minimal.
Native vegetation:	Closed forest.

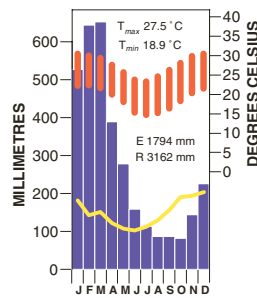


Innisfail district, north Queensland

Site location



Site climate



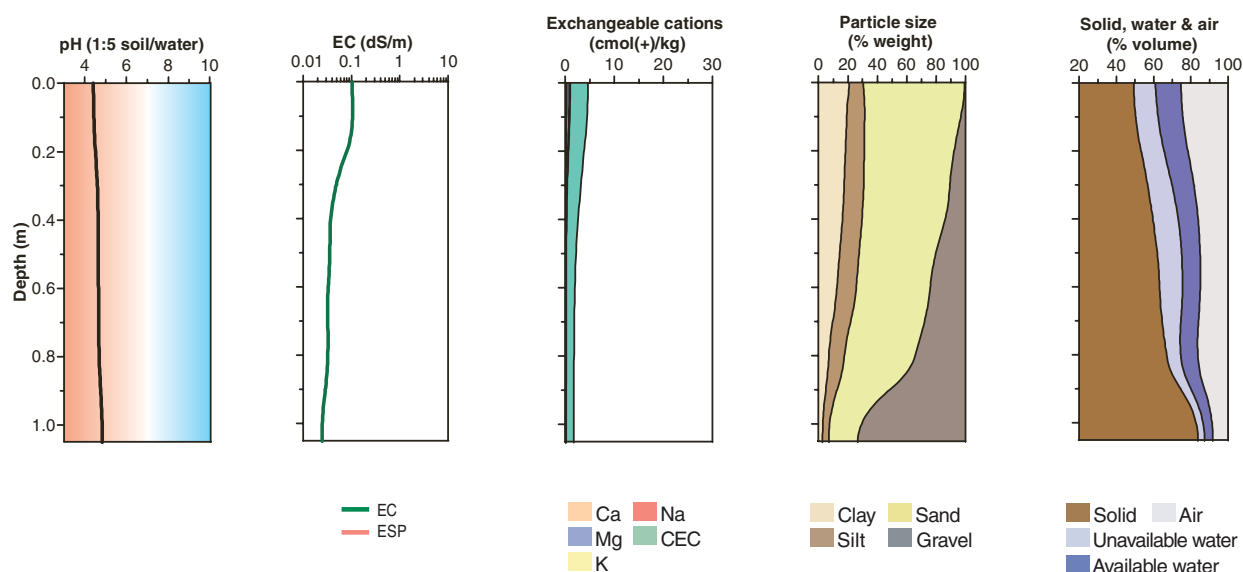
Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A11	0.00–0.10	dark greyish brown (10YR 4/2)	–	light clay loam	strong	cast	5–10 mm	weak (moist)	–	–	–
A12	0.10–0.20	dark greyish brown (10YR 4/2)	–	clay loam	strong	cast	5–10 mm	weak (moist)	2–10% quartz fragments (6–20 mm)	–	gradual
B1	0.20–0.30	yellowish brown (10YR 5/4)	–	heavy clay loam	moderate	subangular blocky	5–10 mm	weak (moist)	2–10% quartz fragments (6–20 mm)	–	diffuse
B21	0.30–0.45	yellowish brown (10YR 5/4)	–	sandy medium clay	moderate	subangular blocky	10–20 mm	weak (moist)	2–10% quartz fragments (6–20 mm)	–	–
B22	0.45–0.60	brownish yellow (10YR 6/6)	10–20% light yellowish brown (10YR 6/4) faint (<5 mm) and 10–20% yellowish brown (10YR 5/8) faint (<5 mm)	sandy medium clay	moderate	subangular blocky	10–20 mm	weak (moist)	10–20% quartz fragments (20–60 mm)	–	–
B23	0.60–0.70	brownish yellow (10YR 6/6)	<10% light yellowish brown (10YR 6/4) faint (<5 mm) and 10–20% yellowish brown (10YR 5/8) faint (<5 mm)	sandy medium clay	weak	subangular blocky	10–20 mm	weak (moist)	10–20% quartz fragments (20–60 mm)	–	diffuse
BC	0.70–0.90	yellow (10YR 7/8)	–	fine sandy light clay loam	massive	–	–	weak (moist)	10–20% schist fragments	–	–
Cr	0.90–1.05	weathered schist	–	–	–	–	–	–	–	–	–

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 % ^C	Extr. P mg/kg ^B	Tot. P % ^A	Tot. K % ^A	Cation exchange properties ^A cmol(+)/kg							ESP %	Bulk dens. Mg/m ³	Particle size % ^A			
										Ca	Mg	K	Na	H+Al ^B	CEC ^I	ECEC ^A			CS	FS	Silt	Clay
A11	0.00–0.10	4.4		0.11		3.4	12	0.024	1.06	0.2	0.6	0.1	0.1	6.5	5	7	–		2	66	14	19
A12	0.10–0.20	4.4		0.14		2.7	7												3	64	13	20
B1	0.20–0.30	4.6		0.04		1.6	6	0.018	0.97	<0.1	0.1	0.1	<0.1	3.6	3	4	–		3	62	15	20
B21	0.30–0.45	4.7		0.02		0.5													4	62	15	19
B22	0.45–0.60	4.6		0.04		0.3	6			<0.1	0.1	0.1	<0.1	2.2	2	2	–		4	60	17	18
B23	0.60–0.70	4.7		0.03		0.2				<0.1	<0.1	0.1	<0.1	1.9	2	2	–		6	60	18	16
BC	0.70–0.90	4.6		0.04		0.1		0.013	0.89										10	65	16	10
Cr	0.90–1.05	4.9		0.02		0.1																

Key profile properties



General qualities of the soil

Infiltration:	Rapid.
Available water store:	Moderate.
Permeability:	High decreasing to moderate lower in the profile.
Physical root limitations:	None apparent within the A and B horizons.
Erosion hazard:	Severe on cultivated slopes.
Nutrient availability:	Very low with decline of organic matter.
Toxicities:	Strong acidity.



Soil type occurs on the upper slopes of low hills supporting rainforest, near Innisfail, north Queensland

Acknowledgements: Soil image, soil description and laboratory data: CSIRO Land and Water. Profile T268. Landscape image: Bill van Aken, CSIRO.