

DE5: Haplic, Eutrophic, Red Dermosol

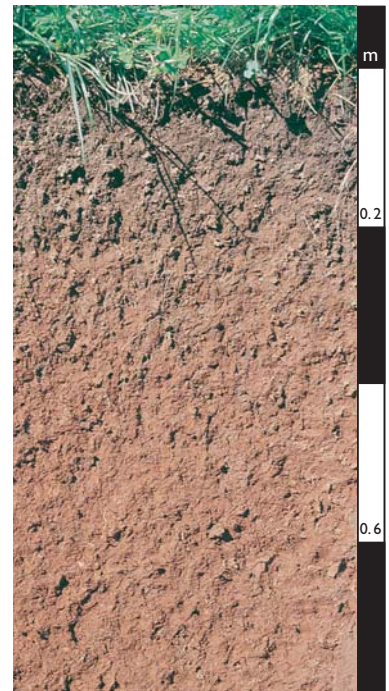
General description of the soil

A deep, structured Red Dermosol with a moderately high base status (i.e. Eutrophic) in the major part of the B2 horizon. No other diagnostic features are present, hence the term Haplic (simple) is used for the subgroup class.

Distribution:	Widely distributed but in mostly small areas throughout much of eastern Australia. They occur on undulating plains to high hilly or mountainous lands with terraced stream valleys.
Typical land use:	The Eutrophic, Red Dermosols are closely associated with Red Chromosols in the wheatbelt of New South Wales and are also common in north-east Victoria where they are widely used for improved pastures. Small areas of Acidic, Dystrophic forms are used for sugar cane in north Queensland where landform is suitable.
Common variants:	As would be expected from their wide rainfall range, Red Dermosols vary widely in base status from very low (i.e. Dystrophic) and acidic, to forms with calcareous subsoils. Some soils are sodic in their deep subsoils, particularly those low rainfall forms which grade to Vertosols.
World Reference Base:	Profondic Lixisol (incomplete data).
Other names:	Some may be included with Euchrozems.

Environment and location of the example profile

Landform:	Alluvial plain.
Parent material or substrate:	Alluvium.
Drainage class:	Well-drained.
Surface condition:	Firm to harsetting.
Site disturbance:	Cleared.
Native vegetation:	Eucalypt forest.

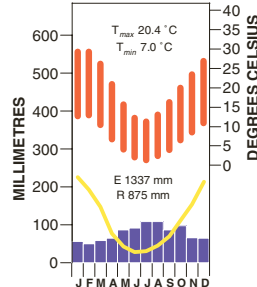


Soil has formed on an alluvial terrace of Tallangatta Creek, north-east Victoria.

Site location



Site climate



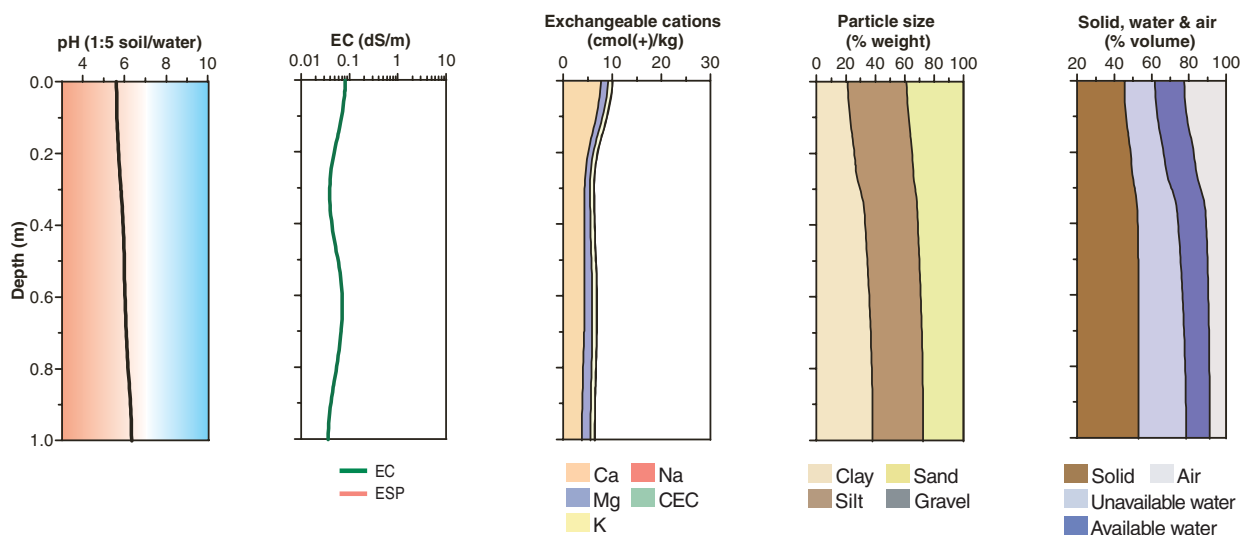
Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A1	0.00–0.15	very dark greyish brown (10YR 3/2)	–	light fine sandy clay loam	moderate	subangular blocky	10–20 mm parting to 5–10 mm	firm (moist)	–	–	clear
A2	0.15–0.30	strong brown (7.5YR 4/6)	–	fine sandy clay loam	moderate	subangular blocky	20–50 mm parting to 5–10 mm	firm (moist)	–	–	clear
B21	0.30–0.50	yellowish red (5YR 4/6)	–	clay loam, fine sandy	moderate to strong	subangular blocky	10–20 mm parting to 5–10 mm	firm (moist)	–	–	gradual
B22	0.50–0.70	yellowish red (5YR 4/6)	–	fine sandy light clay	moderate to strong	subangular blocky	10–20 mm parting to 5–10 mm	firm (moist)	–	–	gradual
B23	0.70–0.85	yellowish red (5YR 5/8)	–	light clay	moderate	subangular blocky	10–20 mm parting to 5–10 mm	firm (moist)	–	–	clear
B31	0.85–1.50	strong brown (7.5YR 4/6)	–	light clay	moderate	subangular blocky	10–20 mm parting to 5–10 mm	weak (moist)	–	soft manganese at 0.9 m	
C	1.50+			–	–	–	–		50–90% river gravel (20–60 mm)		

Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H ₂ O ^A	pH CaCl ₂ ^B	Elect. Cond. dS/m ^A	CaCO ₃ %	Org. C % ^A	Extr. P mg/kg	Tot. P %	Tot. K %	Cation exchange properties ^I cmol(+)/kg							ESP %	Bulk dens. Mg/m ³	Particle size % ^C			
										Ca	Mg	K	Na	H+Al	CEC	ECEC			CS	FS	Silt	Clay
A1	0.00–0.15	5.6	4.9	0.08		2.7				7.4	1.4	0.9	< 0.1					4	32	38	21	
A2	0.15–0.30	5.7	4.8	< 0.05						3.6	0.8	0.8	< 0.1					3	33	41	27	
B21	0.30–0.50	6.0	5.1	< 0.05						4.2	1.2	0.8	< 0.1					3	29	37	35	
B22	0.50–0.70	6.0	5.3	0.09						4.5	1.6	1.0	0.1					2	27	36	39	
B23	0.70–0.85	6.1	5.5	0.06						4.1	1.7	0.9	< 0.1									
B31	0.85–1.50	6.4	5.7	< 0.05						3.7	1.8	0.8	< 0.1									

Key profile properties



General qualities of the soil

Infiltration:	Rapid unless compacted by stock or excessive cultivation.
Available water store:	Moderate to moderate-large.
Permeability:	High to moderate due to well-developed structure.
Physical root limitations:	None obvious – pasture roots extend to approximately 1.0 m.
Erosion hazard:	Susceptible to surface slaking upon rapid wetting, resulting in hardsetting if organic matter is low.
Nutrient availability:	Highly variable. Organic matter declines with cultivation.
Toxicities:	Aluminium toxicity may become a problem if pH levels decline to below 5.5.



Alluvial terraces of the Mitta Mitta River near Tallangatta, north-east Victoria

Acknowledgements: Soil image, soil description and laboratory data: Department of Primary Industries, Victoria. Site NE 25. Landscape image: David Eastburn, Murray Darling Basin Commission.