KA7: Haplic, Eutrophic, **Red Kandosol**

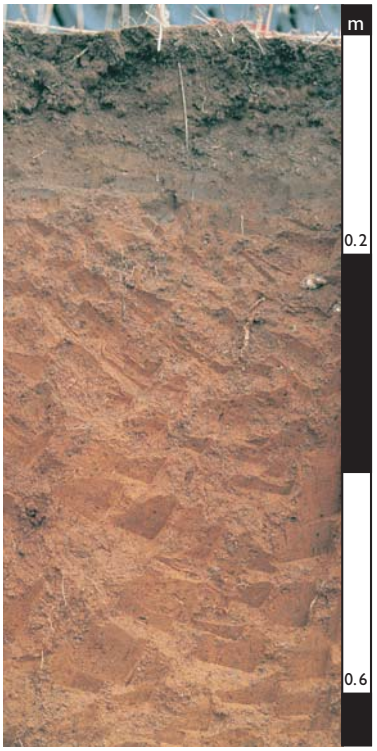
General description of the soil

A loamy-surfaced Red Kandosol with a moderately high base status (i.e. Eutrophic) in the B2 horizon.

Distribution:	The major known area is from the slopes west of the Divide in New South Wales and parts of central southern Queensland.
Typical land use:	Widely used for cereal and oilseed cropping.
Common variants:	Slight differences in texture and colour may occur.
World Reference Base:	Profondic Lixisol.
Other names:	Commonly known as Red Earths.

Environment and location of the example profile

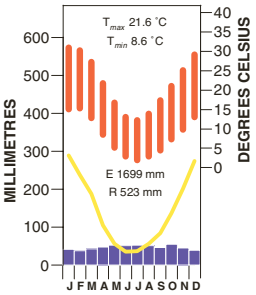
Landform:	Rolling low hills.
Parent material or substrate:	Granite and aeolian dust (parna).
Drainage class:	Well-drained.
Surface condition:	Firm.
Site disturbance:	Cultivation.
Native vegetation:	Eucalypt woodland and open forest.



Wagga Wagga district, New South Wales

Site location

Site climate



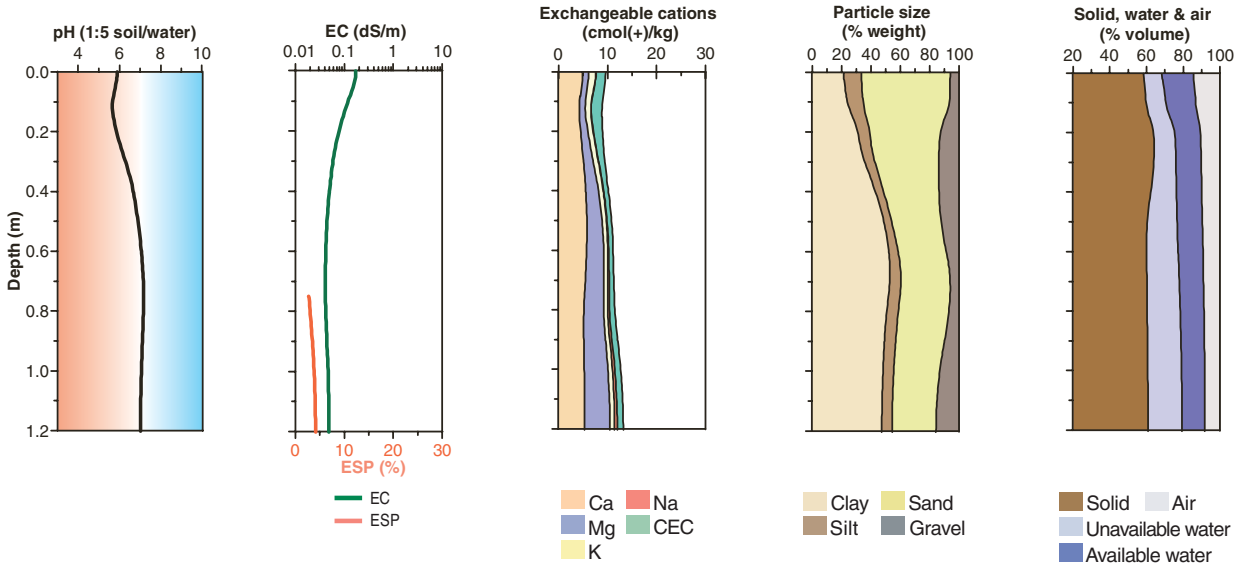
Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A11	0.00–0.08	dark reddish brown (5YR 3/2)	–	loam	weak	subangular blocky	10–20 mm		2–10% angular quartz gravels (6–20 mm)	–	abrupt smooth
A12	0.08–0.15	dark reddish brown (5YR 3/3)	–	sandy clay loam	massive	–	–		2–10% angular quartz gravels (6–20 mm)	–	abrupt smooth
B21	0.15–0.40	dark red (2.5YR 3/6)	–	light clay	massive	–	–		10–20% angular quartz gravels (6–20 mm)	–	gradual smooth
B22	0.40–0.60	red (2.5YR 4/6)	–	light medium clay	weak	polyhedral	10–20 mm		10–20% angular quartz gravels (6–20 mm)	–	gradual smooth
B31	0.60–0.75	yellowish red (5YR 4/6)	–	medium clay	weak	polyhedral	10–20 mm		2–10% angular quartz gravels (6–20 mm)	–	gradual smooth
B32	0.75–0.90	strong brown (7.5YR 5/6)	–	medium clay	weak	polyhedral	10–20 mm		2–10% angular quartz gravels (6–20 mm)	2–10% ferromanganiferous nodules and veins	clear smooth
2B2	0.90–1.20+	yellowish brown (10YR 5/4)	–	medium clay	weak	polyhedral	5–10 mm		2–10% angular quartz gravels (6–20 mm)	10–20% ferromanganiferous nodules and veins	

Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H_2O [A]	pH $CaCl_2$	Elect. Cond. dS/m [A]	$CaCO_3$ %	Org. C % [C]	Extr. P mg/kg	Tot. P % [D]	Tot. K %	Cation exchange properties [A] cmol(+)/kg							ESP % [A]	Bulk dens. Mg/m^3	Particle size % [C]			
										Ca	Mg	K	Na	H+Al	CEC	ECEC			CS	FS	Silt	Clay
A11	0.00–0.8	5.9		0.18		2.1				5.0	1.2	1.5	0.1		10		–		18	47	12	23
A12	0.8–0.15	5.1		0.08		1.1				3.0	0.9	1.0	<0.1		8		–	1.5	17	47	11	25
B21	0.15–0.30	5.8		0.05		0.6				4.5	1.4	1.0	<0.1		9		–	1.6	16	38	9	37
B21	0.30–0.40	6.7		0.05		0.4				5.6	2.3	1.1	0.1		10		–		15	31	7	46
B22	0.40–0.60	7.0		0.04		0.4				6.2	3.3	0.9	0.1		11		–	1.5	13	24	5	57
B31	0.60–0.75	7.3		0.04		0.3				5.7	3.8	0.7	0.3		11		–		12	23	8	57
B32	0.75–0.90	7.2		0.04		0.2				4.7	4.0	0.8	0.4		11		3		11	27	9	54
2B2	0.90–1.20+	7.0		0.05		0.2				5.4	5.3	1.0	0.6		14		4		9	27	8	56

Key profile properties



General qualities of the soil

Infiltration:	Rapid but may be reduced to moderate or less through excessive cultivation, crusting and hardsetting.
Available water store:	Moderate to large but less in shallow soils.
Permeability:	Moderate to high (1.0 m) but less at depth.
Physical root limitations:	Few restrictions to root growth unless compacted.
Erosion hazard:	Severe on slopes in high intensity rainfall areas.
Nutrient availability:	Usually low in nitrogen and phosphorus.
Toxicities:	Uncommon.

Rolling low hills of the southwest slopes of New South Wales mantled by aeolian dust (parna)

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