

## CH4: Bleached–Sodic, Calcic, Red Chromosol

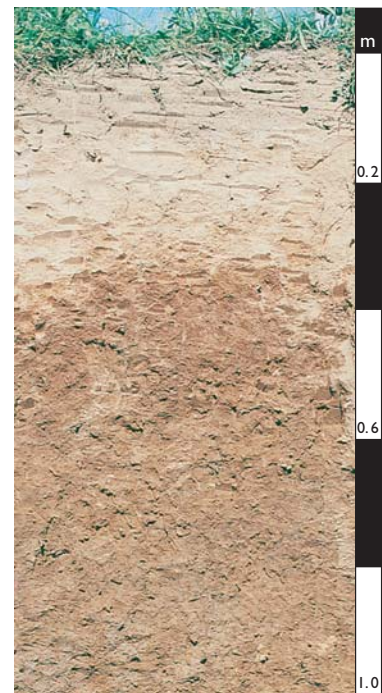
### General description of the soil

A texture-contrast soil with a red, weakly calcareous clayey B2 horizon which is slightly sodic in its lower part. A conspicuously bleached A2 horizon is present.

<b>Distribution:</b>	A very common soil in south-eastern and South Australia.
<b>Typical land use:</b>	Dryland and irrigated agriculture.
<b>Common variants:</b>	Amount and nature of carbonate may be variable.
<b>World Reference Base:</b>	Hypocalcic Luvisol.
<b>Other names:</b>	Red-Brown Earths and Red Duplex Soils.

### Environment and location of the example profile

<b>Landform:</b>	Level plain with prior stream patterns.
<b>Parent material or substrate:</b>	Alluvium.
<b>Drainage class:</b>	Imperfectly drained.
<b>Surface condition:</b>	Hardsetting.
<b>Site disturbance:</b>	Cultivation.
<b>Native vegetation:</b>	Eucalypt woodland.

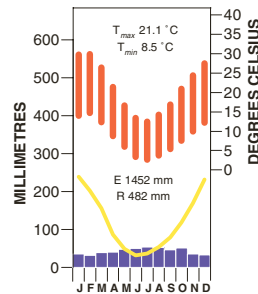


East Shepparton district, Goulburn Valley, Victoria

### Site location



### Site climate



### Soil morphology

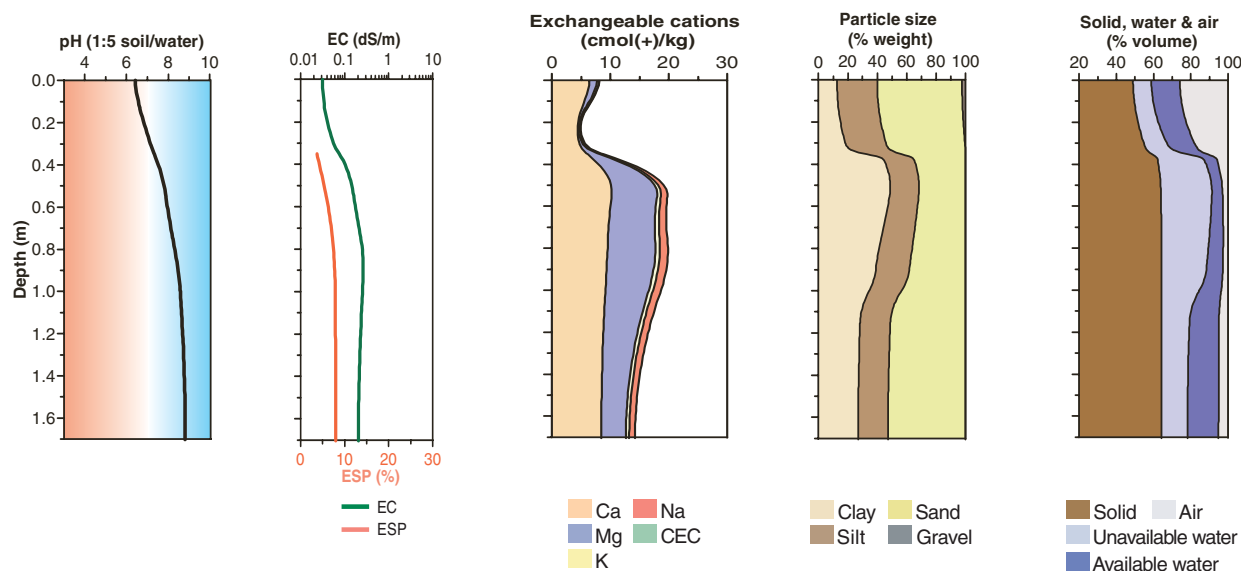
Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A1	0.00–0.13	brown (10YR 4/3)	–	fine sandy loam	weak			very firm (dry)	<2% quartz gravel (2–5 mm)	–	sharp
A2e	0.13–0.30	pink (5YR 7/4 d) strong brown (7.5YR 5/6)	–	fine sandy loam	massive	–	–	very firm to strong (dry)	<2% quartz gravel (2–5 mm)	–	clear wavy
A3	0.30–0.35	yellowish red (5YR 5/8)	–	fine sandy loam	massive	–	–	strong (dry)	–	–	clear wavy
B21	0.35–0.55	yellowish red (5YR 5/8)	pale brown (10YR 6/3)	medium heavy clay	moderate	angular blocky	20–50 mm	very strong (dry)	–	1–2% soft carbonate (<2 mm)	clear
B22	0.55–0.75	yellowish red (5YR 5/8)	pale brown (10YR 6/3)	medium heavy clay	moderate	angular blocky	20–50 mm	firm (moist)	–	2% soft carbonate (2 mm)	abrupt
B23	0.75–0.90	strong brown (7.5YR 5/6)	brown (10YR 5/3) and yellowish red (5YR 5/6)	medium clay	moderate	angular blocky parting to polyhedral	20–50 mm parting to 10–20 mm	firm (moist)	–	10% dark manganese stains	abrupt
B24	0.90–1.00	light brownish grey (10YR 6/2)	yellowish red (5YR 5/8) and strong brown (7.5YR 5/6)	light medium clay	strong	polyhedral	10–20 mm	firm (moist)	–	5–10% dark manganese stains	clear
B3	1.00–1.70	yellowish brown (10YR 5/4)	strong brown (7.5YR 5/6)	fine sandy clay loam	moderate	polyhedral	10–20 mm	weak (moist)	–	2% soft carbonate 5% dark manganese stains	

### Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H <sub>2</sub> O <sup>A</sup>	pH CaCl <sub>2</sub> <sup>B</sup>	Elect. Cond. dS/m <sup>A</sup>	CaCO <sub>3</sub> %	Org. C % <sup>A</sup>	Extr. P mg/kg	Tot. P %	Tot. K %	Cation exchange properties <sup>1</sup>						ESP %	Bulk dens. Mg/m <sup>3</sup>	Particle size % <sup>C</sup>				
										cmol(+)/kg								CS	FS	Silt	Clay	
										Ca	Mg	K	Na	H+Al	CEC							ECEC
A1	0.00–0.13	6.4	5.7	< 0.05		1.5				6.3	1.0	0.3	0.1				–		8	51	28	13
A2e	0.13–0.30	6.8	6.1	< 0.05						2.6	0.5	0.2	0.1				–					
A3	0.30–0.35	7.2	6.3	< 0.05						2.4	0.6	0.2	0.1				–		6	52	30	15
B21	0.35–0.55	7.9	7.3	0.15						13.0	6.3	0.6	1.0				5		2	28	19	53

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										Ca	Mg	K	Na	H+Al	CEC			ECEC	CS	FS	Silt	Clay
B22	0.55–0.75	8.0	7.4	0.18						9.6	7.8	0.7	1.2				7		2	32	21	47
B23	0.75–0.90	8.4	7.8	0.30						9.4	8.5	0.8	1.5				8		1	37	24	41
B24	0.90–1.00	8.6	7.7	0.27																		
B3	1.00–1.70	8.8	8.0	0.21						8.5	5.0	0.6	1.1				8		1	53	21	28

Key profile properties



General qualities of the soil

<b>Infiltration:</b>	Can be reduced to slow with excessive cultivation.
<b>Available water store:</b>	Moderate.
<b>Permeability:</b>	Impermeable B horizon causes water logging.
<b>Physical root limitations:</b>	Poor aeration (when wet) and high strength (when dry) are likely limitations in both the hardsetting A horizon (after excessive cultivation) and the dense B horizon.
<b>Erosion hazard:</b>	Possible wind erosion on bare soil.
<b>Nutrient availability:</b>	Moderate.
<b>Toxicities:</b>	Unlikely to be any problems. Medium salinity can be present lower in the profile.



Irrigated horticulture on prior stream levees, Kyabram, Victoria

Acknowledgements: Soil image, soil description and laboratory data: Department of Primary Industries, Victoria. Site GN 25, Shepparton. Landscape image: Bill Bachman.