

Site code¹	MM5154
Location	Meredith (Meredith Shelford Road), Meredith district, south-west Victoria
Landform	Undulating basalt rises
Geology	Quaternary Newer Volcanics: <i>extrusive tholeiitic to alkaline basalts, minor scoria and ash</i>
Element	Flat

Profile morphology

Horizon	Depth (cm)	Description
A1	0–15	Black (10YR2/1); medium clay; strong fine blocky structure; very firm consistence (dry); gradual boundary to:
B21	15–60	Black (10YR2/1); medium clay; strong coarse blocky structure; firm consistence (moderately moist); clear boundary to:
B22	60+	Very dark grey (10YR3/1); medium clay; strong coarse blocky structure; firm consistence (moderately moist).

ASC: Endohypersodic, Epipedal, Black Vertosol

Analytical data²

Site MM5154 Horizon	Sample depth cm	pH		EC	NaCl	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	Ex
		H ₂ O	CaCl ₂	dS/m	%	cmol _c /kg	cmol _c /kg	cmol _c /kg	cmol _c /kg	mg/kg	acidity cmol _c /kg
A1	0–15	5.9	N/R	0.29	N/R	18.9	18.9	1.9	0.4	0	14.8
B21	15–60	6.8	N/R	0.13	N/R	20.3	20.3	0.9	1.3	0	9.6
B22	60+	7.3	N/R	0.08	N/R	22.5	22.5	0.7	1.1	N/R	7.1

Site MM5154 Horizon	Sample depth cm	FC (-10kPa) %	PWP (-1500kPa) %	KS %	FS %	Z %	C %	Org C %	Bulk density t m ⁻³
A1	0–15	42.2	28.5	3	25	17	43	4.7	0.98
B21	15–60	44.7	32.6	3	23	18	47	N/R	0.77
B22	60+	N/R	N/R	3	26	17	47	N/R	N/R

Management considerations

Cracking soils vary in their workability depending on their moisture status (highly permeable when dry and impermeable when saturated). These soils are also prone to structure decline particularly when worked wet. They are also generally alkaline with depth and can place stress on roots with their high shrink-swell capabilities. The main priority on these soils is to avoid working when wet (on or below plastic limit).

Alkaline subsoils are associated with a high nutrient capacity but result in an imbalance in nutrient availability (may be restrictive to certain plant species (eg. potatoes). These soils are often associated with sodic and calcic soil properties. Growing alkaline tolerant species is a practical option.

¹ Source: Maher JM, Martin JJ 1987 Soils and landforms of south-western Victoria. Department of Agriculture and Rural Affairs. Research Report No. 40.

² Source: Government of Victoria, State Chemistry Laboratory.