

<b>Site code<sup>1</sup></b>	<b>MM219</b>
<b>Location</b>	<b>Woodbourne (Coopers Road), Shelford district, south-west Victoria</b>
<b>Landform</b>	Undulating low hills
<b>Geology</b>	Ordovician Castlemaine Supergroup: <i>marine sandstone, siltstone, shale, chert; Lancefieldian</i>
<b>Element</b>	Mid slopes

### Profile morphology

Horizon	Depth (cm)	Description
A1	0–30	Very dark greyish brown (10YR3/2); sandy loam; apedal massive structure; very weak consistence (dry); sharp boundary to:
A2	30–50	Brown (10YR5/3), light grey (10YR7/2 dry) conspicuously bleached; loamy sand; very weak consistence (dry); common fine to coarse segregations; sharp boundary to:
B21	50–85	Yellowish brown (10YR5/6) with red (2.5YR4/6) mottles; heavy clay; strong coarse blocky structure; very firm consistence (dry); clear boundary to:
B22	85+	Brownish yellow (10YR6/6) with red (10Y3/6) mottles; medium clayey sand; weak coarse blocky structure; firm consistence (moderately moist).

**ASC:** Ferric, Bleached-mesonatric, Brown Sodosol

### Analytical data<sup>2</sup>

Site MM219 Horizon	Sample depth cm	pH		EC	NaCl	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	Ex acidity
		H <sub>2</sub> O	CaCl <sub>2</sub>	dS/m	%	cmol <sub>c</sub> /kg	cmol <sub>c</sub> /kg	cmol <sub>c</sub> /kg	cmol <sub>c</sub> /kg	mg/kg	cmol <sub>c</sub> /kg
A1	0–30	5.4	N/R	0.03	N/R	N/R	N/R	N/R	N/R	N/R	N/R
A2	30–50	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
B21	50–85	7	N/R	0.17	0.02	1.1	10	0.17	3.1	N/R	7.8
B22	85+	7.1	N/R	0.21	0.03	N/R	N/R	N/R	N/R	N/R	N/R

Site MM219 Horizon	Sample depth cm	FC (-10kPa) %	PWP (-1500kPa) %	KS %	FS %	Z %	C %	Org C %	Bulk density t m <sup>-3</sup>
A1	0–30	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
A2	30–50	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
B21	50–85	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
B22	85+	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

### Management considerations

This soil exhibits a strong texture contrast between the sandy surface soil and the medium to heavy clay subsoil and will have a significant impact upon the deep soil permeability. The surface soil is light and sandy with high permeability and a conspicuously bleached A2 horizon whereas the subsoil is medium to heavy clay and acts as a barrier to water movement. Mottles at depth indicate periods of waterlogging. Acidic topsoils and sodic subsoils are other key features of this soil type.

Management options include the application of lime to reduce acidity by increasing the pH, and the application of gypsum to allow greater development of ped structure in the subsoil and reduce dispersion.

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

<sup>2</sup> Source: Government of Victoria, State Chemistry Laboratory.

## Maher & Martin Reference Site

Other options include reduced tillage, maintaining a vegetative cover, improving organic matter content and altering the subsoil through artificial drainage.