

Site code¹	MM239
Location	Mingay (Hannahs Road), Lismore district, south-west Victoria
Landform	Gently undulating basalt plains
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	Dark brown (10YR3/3); clay loam; apedal massive structure; firm consistence (dry); common fine segregations; clear boundary to:
A2	15–50	Dark greyish brown (10YR4/2), sporadically bleached, light grey (10YR7/2 dry); clay loam; weak consistence (moist); sharp boundary to:
B21	50–100	Grey (10YR5/1) with brown (10YR4/6) mottles; medium clay; strong coarse blocky structure; very firm consistence (moist); gradual boundary to:
B22	100–120	Grey (10YR6/1) with brown (10YR5/6) mottles; medium clay; very firm consistence (moist); gradual boundary to:
B23	120+	Light olive brown (2.5Y5/4); medium clay.

ASC: Eutrophic, Mottled-Mesonatric, Grey Sodosol

Analytical data²

Site MM239	Sample depth	pH		EC	NaCl	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	Ex acidity
		H ₂ O	CaCl ₂	dS/m	%	cmol _c /kg	cmol _c /kg	cmol _c /kg	cmol _c /kg	mg/kg	cmol _c /kg
Horizon	cm										
A1	0–15	5.3	N/R	0.09	N/R	2	2	0.3	0.5	50	14.8
A2	15–50	6.2	N/R	0.05	N/R	1.4	1.4	0.1	0.5	0	4.6
B21	50–100	6.6	N/R	0.2	0.04	5	5	0.5	4.8	N/R	11.6
B22	100–120	7.6	N/R	0.14	N/R	N/R	N/R	N/R	N/R	N/R	7
B23	120+	8.2	N/R	0.43	0.08	7.5	7.5	0.7	7.8	N/R	N/R

Site MM239	Sample depth	FC (-10kPa)	PWP (-1500kPa)	KS	FS	Z	C	Org C	Bulk density
Horizon	cm	%	%	%	%	%	%	%	t m ⁻³
A1	0–15	22.4	13.4	9	40	22	21	3.9	1.28
A2	15–50	22.9	6.8	10	44	28	16	N/R	N/R
B21	50–100	50.1	30.2	2	18	13	66	N/R	1.47
B22	100–120	N/R	N/R	3	18	8	66	N/R	N/R
B23	120+	N/R	N/R	2	9	13	75	N/R	N/R

Management considerations

This soil exhibits hardsetting surface soils with a strong texture contrast between the surface soil and the subsoil which may impact upon subsoil permeability. Conspicuously bleached A2 horizons and sodic and mottled subsoils are other prominent features of this soil type.

The application of gypsum would be suitable for soil structure and improved permeability, while increasing organic matter and maintaining vegetative cover is important to help improve the soil structure. Penetration

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.

Maher & Martin Reference Site

by deep-rooted crops is also useful as is minimum tillage practices which avoids bringing the sodic material to the surface.