

Site code¹	MM97
Location	Birregurra (Matthews Creek and Deepdene Road), Colac district, south-west Victoria
Landform	Undulating low hills
Geology	Neogene Gellibrand Marl: <i>marine silty clay, clayey silt, calcareous, minor calcarenite</i>
Element	Upper hill slope

Profile morphology

Horizon	Depth (cm)	Description
A1	0–20	Dark brown (10YR3/3); fine sandy loam; apedal massive structure; weak consistence (dry); clear boundary to:
A2	20–60	Brown (10YR5/3), conspicuously bleached, very pale brown (10YR7/3 dry); fine sandy loam; common fine segregations; sharp boundary to:
B21	60+	Yellowish brown (10YR5/6) with red (2.5YR4/6) mottles; medium clay; strong coarse blocky structure; very firm consistence (dry).

ASC: Eutrophic, Mottled-Subnatric, Brown Sodosol

Analytical data²

Site MM97	Sample depth	pH		EC	NaCl	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	Ex acidity
Horizon	cm	H ₂ O	CaCl ₂	dS/m	%	cmol _c /kg	cmol _c /kg	cmol _c /kg	cmol _c /kg	mg/kg	cmol _c /kg
A1	0–20	5.6	N/R	0.09	N/R	1.4	1.4	0.5	0.3	N/R	14.8
A2	20–60	6.1	N/R	0.03	N/R	0.6	0.6	0.1	0.1	N/R	2.9
B21	60+	6.9	N/R	0.17	N/R	1.9	1.9	0.2	2.2	N/R	6.2

Site MM97	Sample depth	FC	PWP	KS	FS	Z	C	Org C	Bulk density
Horizon	cm	(-10kPa) %	(-1500kPa) %	%	%	%	%	%	t m ⁻³
A1	0–20	26.9	12.7	16	54	12	11	4.7	1.15
A2	20–60	N/R	N/R	23	58	12	7	0.6	N/R
B21	60+	37.4	27.9	3	28	6	62	N/R	1.46

Management considerations

Strong texture contrast between the sandy topsoil and the medium clay subsoil is a very important soil feature and may impact upon subsoil permeability. The conspicuously bleached A2 horizon is a key feature of this profile while 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 and hold the sandy topsoil in place. Penetration by deep-rooted crops is also a recommended management practice.

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.