

Site code¹	MM112
Location	Colac (Larport Road), Colac district, south-west Victoria
Landform	Alluvial plain
Geology	Quaternary alluvium: paludal lagoon and swamp deposits; <i>silt, clay</i>
Element	Lower slope

Profile morphology

Horizon	Depth (cm)	Description
A1	0–30	Very dark brown (10YR2/2); fine sandy loam; apedal massive structure; weak consistence (dry); clear boundary to:
A2	30–60	Sporadically bleached, light grey (10YR7/2 dry); fine sandy loam; weak consistence (dry); sharp boundary to:
B21	60+	Black (10YR2/1) with grey (10YR4/6) mottles; heavy clay; strong coarse blocky structure; strong consistence (dry).

ASC: Eutrophic; Mottled-Subnatric; Black Sodosol

Analytical data²

Site MM112	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	0–30	5.6	N/R	0.05	N/R	3.2	3.2	0.3	0.3	N/R	10.6
A2	30–60	5.8	N/R	0.04	N/R	1	1	0	0.2	N/R	4.4
B21	60+	6.4	N/R	0.17	0.04	4.8	4.8	0.3	2.8	N/R	13.9

Site MM112	Sample depth	FC	PWP	KS	FS	Z	C	Org C	Bulk density
Horizon	cm	(-10kPa) %	(-1500kPa) %	%	%	%	%	%	t m ⁻³
A1	0–30	25.7	14.1	21	47	17	13	2.4	1.14
A2	30–60	N/R	N/R	26	51	15	8	0.6	N/R
B21	60+	44.8	31.7	10	23	7	58	N/R	0.94

Management considerations

These soils have sandy topsoils and exhibit a strong texture contrast between the surface soil and the subsoil with a bleached A2 horizon. The sandy topsoils have poor plant water holding capacity and poor nutrient holding capacity and due to the low level of bonding between soil particles are prone to wind, sheet and rill erosion (depending on organic matter content and vegetative cover). The bleached A2 horizons are an indication of restricted drainage, poor soil structure (often massive) and low organic matter and nutrients.

These soils are associated with sodic subsoils having poor structure. The poor structure results in dispersion and subsequent clogging of pores restricting water and gas movement through the subsoil. Mottled subsoils are common and are a further indication of periodic waterlogging and restricted water movement.

Maintenance of a vegetative cover is important to improve topsoil stability. Options include reduced tillage, improving organic matter content and altering the subsoil through artificial drainage (ripping, mole drainage) and/or chemical amelioration (gypsum) to improve structure.

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.