Site code[1] **MM115**

Location **Wingeel (Winchelsea Cressy Road), Cressy district, south-west Victoria**

Landform Lava plain

Geology Quaternary Newer Volcanics: *extrusive tholeiitic to alkaline basalts, minor scoria and ash*

Element Upper slope

Profile morphology

Horizon	Depth (cm)	Description
A1	0–15	Dark brown (10YR3/3); fine sandy clay loam; apedal massive structure; firm consistence (dry); clear boundary to:
A2	15–20	Sporadically bleached, light grey (10YR7/2 dry); light sandy clay loam; apedal massive structure; firm consistence (dry); common fine to coarse segregations; sharp boundary to:
B21	20–60	Very dark greyish brown (10YR3/2 moist) with grey (10YR4/6) mottles; heavy clay; strong coarse blocky structure; strong consistence (dry); gradual boundary to:
B22	60–80	Dark greyish brown (10YR4/2); heavy clay; strong coarse blocky structure; firm consistence (moderately moist); gradual boundary to:
B23	80+	Light yellowish brown (2.5Y6/4); medium clay; moderate fine blocky structure; firm consistence (moderately moist); common calcareous soft segregations.

ASC: Hypercalcic; Mottled-Hypernatric; Black Sodosol

Analytical data[2]

Site MM115	Sample depth	pH		EC	NaCl	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	Ex acidity
Horizon	cm	H_2O	$CaCl_2$	dS/m	%	$cmol_c/kg$	$cmol_c/kg$	$cmol_c/kg$	$cmol_c/kg$	mg/kg	$cmol_c/kg$
A1	0–15	6.1	N/R	0.09	N/R	2.5	2.5	0.2	0.6	0	7.6
A2	15–20	6.6	N/R	0.1	N/R	2.2	2.2	0.2	0.8	0	7
B21	20–60	8	N/R	0.35	0.06	4.2	4.2	1.2	7.5	N/R	0
B22	60–80	8.8	N/R	0.52	0.09	3.9	3.9	1.1	9.2	N/R	0
B23	80+	9.4	N/R	0.74	0.09	4.6	4.6	1	9.2	N/R	0

Site MM115	Sample depth	FC (-10kPa)	PWP (-1500kPa)	KS	FS	Z	C	Org C	Bulk density
Horizon	cm	%	%	%	%	%	%	%	$t\ m^{-3}$
A1	0–15	20.5	11.9	28	40	11	16	2.3	1.4
A2	15–20	N/R	N/R	27	42	13	16	1.6	N/R
B21	20–60	48.4	37.7	12	21	7	57	N/R	1.36
B22	60–80	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
B23	80+	N/R	N/R	15	23	9	45	N/R	N/R

Management considerations

This soil exhibits a strong texture contrast between the surface soil and the subsoil, hardsetting surfaces, bleached A2 horizons and Ferruginous and Ferromanganiferous nodules. The subsoil also features sodic, mottled and alkaline subsoils with calcium carbonate nodules.

[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.

These features are an indication of periodic waterlogging, restricted drainage, poor soil structure (often massive) and low organic matter, nutrient and water holding capacity and may be improved with the application of gypsum, increasing organic matter and improved drainage.