

Site Code¹ **SFS20**



General view from SFS20

Location East of Lake Weering, south of Barpinba-Poorneet Road.
Landform Level plain
Geology Quaternary Volcanics: Basalt
Element Plain – potentially a paleo lake bed or high level swamp
Slope 0-1%
Aspect 0



Vertic (&Calcic), Mottled-Mesonatric, Black SODOSOL

Horizon	Depth (cm)	Description
A1	0-5	Dark greyish brown (10YR4/2); fine sandy clay loam; fine crumb structure; clear boundary to intermittent A2 or to B21t:
A2	5-30	Intermittent horizon ranging from <0.5 cm to 25 cm thickness; Light grey (10YR7/1dry); clay loam, fine sandy; minor very fine to fine (2-5 mm) buckshot and well rounded quartz of same size range; hard set massive structure but reflecting cracking pattern of B21 prisms below; rusty root channels; abrupt boundary to:
B21t	5/30-40	Very dark grey (10YR3/1) with common (10%) fine yellowish brown (10YR5/8) mottles; heavy clay; extremely coarse (250-300 mm diameter) prismatic structure; very strong consistence; extremely dispersive (totally dispersed in 5 minutes); clear boundary to:
B22	40-70	Brown (10YR5/3) with many (>30%) medium sized yellowish brown (10YR5/8) mottles; heavy clay; less definite structure than B21 above or B23 below, sticky consistence at time of sampling; gradual boundary to:
B23ss	70-100	Light yellowish brown (2.5Y6/4); heavy clay; many thick lenticular peds. Slightly calcareous (audible fizz with dilute acid); gradual boundary to:
B24k	100-200	Light olive brown (2.5Y5/4); heavy clay; thick coarse lenticular and prismatic structure; fine (1-3 mm diameter) buckshot throughout the matrix; very highly calcareous (large masses of soft carbonate and many calcareous soft segregations); gradual boundary to:
B25ss	200+	Greyish brown (2.5Y5/2) with 10% fine to medium brownish yellow (10YR6/8) mottles and fine black lustrous manganiferous coatings on some ped faces; strongly pedal structure, frequent and very large (up to 1 m) slickensides.

¹ Source: MacEwan R, Imhof M (in press) Soils at Raised Bed Cropping Sites in South West Victoria. DPI

Analytical data²

Site SFS20	Sample depth Horizon cm	pH		EC dS/m	NaCl %	Ex Ca cmolc/kg	Ex Mg cmolc/kg	Ex K cmolc/kg	Ex Na cmolc/kg	Ex Al mg/kg	Ex Acidity cmolc/kg	FC -10kPa %	PWP -1500kPa %	KS %	FS %	Z %	C %	
		H ₂ O	CaCl ₂															
	A1	0-5	5.4	4.7	0.27	0.03	3.3	2.8	1.2	0.6	14.0	15	37.9	15.9	11.3	35.3	18.5	22.5
	A2	5-15	5.4	4.5	0.12	N/R	1.6	1.8	0.27	0.88	37.0	7.6	23.2	7.3	17.7	39.6	18.5	19.0
	B21t	20-30	7.3	6.5	0.33	0.03	4.4	13.0	1.6	6.1	N/R	N/R	44.7	26.4	6.2	17.2	10.0	61.5
	B22	40-50	8.6	8.0	0.56	0.05	4.3	17.0	1.8	9.5	N/R	N/R	47.5	28.7	5.5	18.9	12.5	58.5
	B23ss	80-110	9.4	8.5	0.37	0.06	3.3	16.0	1.7	12.0	N/R	N/R	47.3	26.3	7.6	20.7	19.0	47.5
	B24k	140-160	9.4	8.5	0.51	0.20	3.4	17.0	1.4	12.0	N/R	N/R	46.8	26.1	N/R	N/R	N/R	N/R
	B25ss	280+	8.7	7.9	0.46	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Management considerations

Acid topsoil (A1 and A2) and high exchangeable aluminium will limit plant growth in this soil but this can be readily remedied with lime. The subsoil is extremely sodic (ESP = 24-35%) and highly dispersive. This soil is extremely prone to waterlogging. Subsoil conditions are unfavourable for root growth because of the sodic swelling nature of the clay and the extremely coarse structure. Gypsum application will improve subsoil permeability but the coarse structure will remain a limitation. Cropping this soil would not have good prospects without major soil improvement (e.g. use of raised beds, lime and gypsum application, controlled traffic).

² Source: Government of Victoria State Chemistry Laboratory.