

Site Code ¹ SFS2



Farming systems trial (raised beds) at Gnarwarre

Location Gnarwarre, South Roxby (Southern Farming Systems trial site)

Landform Plain

Geology Quaternary volcanic, basalt.

Element low rise

Slope <1%

Aspect West

Horizon	Depth (cm)	Description
Ap	0-20	Black (10YR2/1 moist, dry); light medium clay; strongly pedal; self-mulching; pH 6.0; clear boundary to:
B21g	20-50/70	Black (10YR2/1 moist, dry); abundant (>25%), coarse, dark greyish brown (2.5Y4/2 moist); (10%), fine to medium dark red(2.5YR 4/8 moist) and strong brown(7.5 YR5/8 moist) mottles; heavy clay; strongly pedal; angular blocky and lenticular parting to fine to coarse (5-50 mm) polyhedral peds; common, medium macropores; roots common; pH 7.4; clear boundary to:
B22gss	50/70 -90	Black (10YR2/1 moist, dry); many (50%), coarse, dark greyish brown (2.5Y4/2 moist) mottles, increasing with size and abundance with depth; heavy clay; prominent slickensides; common, medium macropores; roots common; pH 8.2; clear boundary to:
B23k	90+	Abundant CaCO ₃ , effervescence bubbles >2 mm; rounded dense basalt floaters; pH 9.5/10.

Management considerations:

The self mulching properties and high chemical fertility of this soil make it very favourable for crop growth. The major limitation is waterlogging but this is being effectively managed in crops by the use of raised beds. This soil is extremely sticky when wet and prone to damage by hooves and by wheeled traffic. The self mulching behaviour lends a resilience to the soil which can readily recover from structural damage in the surface.



Endocalcareous, Self-mulching, Black VERTOSOL

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

Analytical data²

Site	SFS2	Sample depth 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														
	Ap	0-20	6.0	5.2	0.15	N/R	14.0	10.0	1.10	0.50	<10	11.0	40.6	22.9	11.1	26.5	13.0	38.5
	B21g	30-45	7.4	6.4	0.12	N/R	14.0	13.0	0.93	0.85	N/R	N/R	42.6	22.5	11.4	27.6	12.5	45.5
	B22gss	65-85	8.2	7.2	0.17	N/R	15.0	15.0	0.86	1.40	N/R	N/R	44.9	24.1	10.6	26.8	13.0	46.5

² Source: Government of Victoria State Chemistry Laboratory.