

Site code<sup>1</sup> SW23



Grazing paddock (dairy)

**Location** Simpson  
**Landform** Undulating hills  
**Geology** Neogene - Moorabool Viaduct Formation.  
**Element** Lower slope

Horizon	Depth (cm)	Description
A1	0–10	Dark brown (10YR3/3); fine sandy clay loam; weak consistency (moist); pH 5.6; abrupt boundary to:
A2	10–25	Light brownish grey (10YR6/2); rusty root channel mottling present; silty clay loam; weak coarse blocky structure; pH 5.4; clear boundary to:
B1	25–40	Light yellowish brown (2.5Y6/4) with reddish yellow (7.5YR6/6) mottles; heavy silty clay loam; weak to moderate coarse blocky structure; pH 5.2; clear boundary to:
B21	40–70	Brown (10YR5/3) with reddish yellow (7.5YR6/6) mottles; silty clay; moderate coarse blocky, parting to strong medium polyhedral structure; pH 5.0; clear boundary to:
B22	70+	Light brownish grey (10YR6/2) with brownish yellow (10YR6/6) mottles; light medium clay; weak very coarse prismatic, parting to strong coarse blocky and strong fine to medium polyhedral structure; pH 5.0.



Acidic, Mesotrophic, Brown Dermosol

<sup>1</sup> Source: Imhof M, Brown A, Ward G (unpublished) Soils associated with dairy irrigation and winter wet soils in Southwest Victoria

## Analytical data<sup>2</sup>

Site SW23	Sample depth Horizon cm	pH		EC dS/m	NaCl %	Ex Ca cmol <sub>c</sub> /kg	Ex Mg cmol <sub>c</sub> /kg	Ex K cmol <sub>c</sub> /kg	Ex Na cmol <sub>c</sub> /kg	Ex Al mg/kg	Ex acidity cmol <sub>c</sub> /kg	FC (-10kPa) %	PWP (-1500kPa) %	KS %	FS %	Z %	C %	
		H <sub>2</sub> O	CaCl <sub>2</sub>															
	A1	0–10	5.6	4.9	0.15	N/R	5.4	1.1	0.2	0.1	N/R	N/R	36.4	13	5	43	25	16
	A2	10–25	5.4	4.6	0.1	N/R	1.9	0.8	0.3	0.05	N/R	N/R	25.6	8	2	50	30	16
	B1	25–40	5.2	4.3	0.11	N/R	1.7	1.3	0.3	0.1	N/R	N/R	26.9	10.6	2	47	26	25
	B21	40–70	5.0	4.2	0.13	N/R	1.8	1.8	0.3	0.2	N/R	N/R	28.5	13.1	2	42	26	30
	B22	70+	5.0	4.2	0.15	N/R	2.2	3.9	0.3	0.3	N/R	N/R	30.5	16.5	1	35	21	42

## Management considerations

The following comments are made on the basis of examination of a single profile and are therefore indicative only. Fertiliser and lime requirements would need to be verified and quantified through analysis of bulk samples of standard depth taken from across a whole paddock.

Most of the soil profile is strongly acid. This indicates that aluminium and manganese toxicity may occur. Lime can be used to increase soil pH. Other factors need to be considered before lime is recommended (e.g. pasture species grown, method of application, local trial responses, soil surface structure and likely cost/benefit). Manganese toxicity is more likely to occur in poorer drained situations (as waterlogging may bring manganese into solution). If lime is required, and pH increased, then the availability of major nutrients (e.g. phosphorus and some trace elements such as molybdenum) may improve.

The soil profile has low inherent levels of exchangeable basic cations.

The presence of bleaching and rusty root channel mottling in the subsurface (A2) horizon indicates that periodic waterlogging occurs. The presence of strong mottling in the subsoil also often indicates imperfect subsoil drainage. Hydraulic conductivity appears to be reasonably high for this soil profile – but waterlogging can occur in wet periods due to the low-lying landscape position.

The soil is non-plastic and treading damage is not likely to be a major problem on this soil – although over-stocking should still be avoided when the soil is very wet.

<sup>2</sup> Source: Government of Victoria State Chemistry Laboratory.