

Site code¹ SW31



Grazing paddock (dairy).

Location Gerangamete
Landform Undulating to rolling plain
Geology Neogene - Moorabool Viaduct Formation.
Element Crest, upper slope



Bleached-Mottled, Mesotrophic, Brown Kurosol

Horizon	Depth (cm)	Description
A11	0–15	Greyish brown (10YR3/2); light fine sandy clay loam; weak coarse blocky structure; very firm consistence (moist); pH 4.8:
A12	15–30	Dark brown (7.5YR3/2); very fine sandy clay loam; weak coarse blocky structure; firm to very firm consistence (moist); pH 4.8:
A21	30–40	Greyish brown (10YR5/2), conspicuously bleached; very fine sandy clay loam; very firm consistence (moist); pH 4.7:
A22	40–50	Greyish brown (10YR5/2) with brownish yellow (10YR6/6) mottles, conspicuously bleached; heavy very fine sandy clay loam; very firm consistence (moist); pH 4.7; abrupt and wavy boundary to:
B21	50–70	Brown (10YR5/3) with yellowish brown (10YR5/6) mottles; light medium clay; moderate medium prismatic, parting to strong coarse blocky structure; strong consistence (moist); pH 4.7:
B22	70+	Greyish brown (10YR5/2) with yellowish brown (10YR5/6) mottles; medium clay; moderate coarse prismatic, parting to moderate coarse blocky structure (with strong fine blocky structure in patches); strong consistence (moist); pH 4.8.

¹ Source: Imhof M, Brown A, Ward G (unpublished) Soils associated with dairy irrigation and winter wet soils in Southwest Victoria

Analytical data²

Site SW31	Sample depth Horizon cm	pH		EC	NaCl	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	Ex acidity	FC	PWP	KS	FS	Z	C
		H ₂ O	CaCl ₂	dS/m	%	cmol _c /kg	cmol _c /kg	cmol _c /kg	cmol _c /kg	mg/kg	cmol _c /kg	(-10kPa) %	(-1500kPa) %	%	%	%	%
A11	0–15	4.8	4.3	0.26	0.02	5.1	0.4	0.6	0.05	N/R	N/R	36	11.6	5	37	30	15
A12	15–30	4.8	4.4	0.38	0.04	5.9	0.6	0.3	0.05	N/R	N/R	35.9	11.2	4	38	30	15
A21	30–40	4.7	4.2	0.24	N/R	1.2	0.2	0.3	0.05	N/R	N/R	31.1	7.7	3	42	35	18
A22	40–50	4.7	4.1	0.14	N/R	0.8	0.7	0.3	0.05	N/R	N/R	25.3	9.2	3	40	33	24
B21	50–70	4.7	4.1	0.19	N/R	1.5	2.7	0.3	0.05	N/R	N/R	34.7	19.3	1	28	24	47
B22	70+	4.8	4.1	0.18	N/R	0.8	3.1	0.1	0.3	N/R	N/R	43.3	24.8	1	19	20	59

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

The soil profile is very strongly acid throughout. 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.

Bleached A2 horizons (or subsurface soils) are a major feature of many of soils within the Corangamite region. These layers are usually an indication of restricted drainage, and they are poorly structured (often massive) and have low organic matter levels, nutrient and water holding capacities. They are often associated with a restrictive soil below - such as a dense clayey subsoil. These bleached horizons may act as conduit for subsurface flow, particularly on sloping ground.

These soils have a moderate to high plasticity and should form moles when soil moisture contents are between 100-300kPa (i.e. moderately moist) or wetter. The deeper surface soil here, however, may reduce the benefits gained from mole drainage.

The surface soil has a relatively low aeration porosity and low permeability. The surfaces are therefore likely to stay reasonably wet for longer after rain.

² Source: Government of Victoria State Chemistry Laboratory.