**Site code**[1] **SW40**

Grazing paddocks with shelterbelts

**Location** Barongarook West

**Landform** Gently undulating rise

**Geology** Palaeogene - Dilwyn Formation

**Element**

**Slope**

**Aspect**

| Horizon | Depth (cm) | Description |
|---|---|---|
| A11 | 0–25 | Black (10YR2/1); light fine sandy clay loam; weak to moderate coarse blocky structure; weak consistence (moist); pH 5.4; change to: |
| A12 | 25–40 | Very dark brown (10YR2/2); fine sandy clay loam; weak coarse blocky structure; weak consistence (moist); pH 5.5; change to: |
| A21 | 40–60 | Brown (10YR5/3); fine sandy clay loam; weakly structured; weak consistence (moist); pH 5.3; change to: |
| A22 | 60–75 | Pale brown (10YR6/3); fine sandy loam; weakly structured; firm consistence (moist); pH 5.1; change to: |
| B21 | 75–90 | Pale brown (10YR6/3) with brownish yellow (10YR6/6) mottles; fine sandy clay; weak to moderate medium blocky structure; firm consistence (moist); pH 5.1; change to: |
| B22 | 90+ | Grey (10YR5/1) with yellowish brown (10YR5/8) mottles; fine sandy clay; strong coarse blocky, parting to moderate to strong medium blocky structure; shiny faced peds; firm consistence (moist); contains very few (2%) quartz fragments (2–5 mm in size); pH 5.0. |

Humose-Acidic, Mesotrophic, Grey Dermosol (very thick loamy surface)

[1] Source: Imhof M, Brown A, Ward G (unpublished) Soils associated with dairy irrigation and winter wet soils in Southwest Victoria

## Analytical data[2]

| **Site SW40** | Sample depth | pH | | EC | NaCl | Ex Ca | Ex Mg | Ex K | Ex Na | Ex Al | Ex acidity | FC (-10kPa) | PWP (-1500kPa) | KS | FS | Z | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horizon | cm | $H_2O$ | $CaCl_2$ | dS/m | % | $cmol_c/kg$ | $cmol_c/kg$ | $cmol_c/kg$ | $cmol_c/kg$ | mg/kg | $cmol_c/kg$ | % | % | % | % | % | % |
| A11 | 0–25 | 5.4 | 4.7 | 0.23 | 0.03 | 3.8 | 1.2 | 0.2 | 0.3 | N/R | N/R | 26.4 | 10.7 | 26 | 38 | 17 | 12 |
| A12 | 25–40 | 5.5 | 4.8 | 0.23 | 0.04 | 1.4 | 0.9 | 0.1 | 0.1 | N/R | N/R | 17.4 | 5.3 | 28 | 40 | 18 | 13 |
| A21 | 40–60 | 5.3 | 4.7 | 0.35 | 0.07 | 0.6 | 0.6 | 0.05 | 0.05 | N/R | N/R | 16 | 3.1 | 29 | 43 | 20 | 10 |
| A22 | 60–75 | 5.1 | 4.6 | 0.26 | 0.06 | 0.5 | 1.9 | <0.1 | 0.2 | N/R | N/R | 20.5 | 7.3 | 25 | 38 | 15 | 21 |
| B21 | 75–90 | 5.1 | 4.5 | 0.27 | 0.07 | 0.9 | 0.6 | <0.1 | 0.05 | N/R | 6.5 | 25.2 | 11.2 | 22 | 33 | 15 | 31 |
| B22 | 90+ | 5 | 4.4 | 0.26 | 0.06 | 0.3 | 2.9 | <0.1 | 0.4 | N/R | 6.7 | 25.7 | 11 | 21 | 34 | 12 | 31 |

## 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 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.

The presence of mottling in the subsoil and a conspicuously bleached lower subsurface (A2) horizon indicates that some waterlogging occurs above the more impermeable clay subsoil. However, the surface horizons are deep and waterlogging may not be as much of a problem as for shallower surface soils in the region. The practicality of mole drainage is reduced by the deep surface horizons.

The level of exchangeable cations is quite low for much of the soil profile – suggesting a low nutrient holding capacity.

[2] Source: Government of Victoria State Chemistry Laboratory.