Site code[1] **OTR736**

Remnant forest of the Otway Ranges

Location	Mount Cowley
Landform	Hill
Geology	Cretaceous Otway Group
Element	Upper slope
Slope	33%
Aspect	South westerly

Horizon	Depth (cm)	Description
A1	0–25	Very dark greyish brown (10YR3/2); clay loam; moderate subangular blocky structure; diffuse smooth boundary to:
B21	25–30	Dark yellowish brown (10YR3/4); medium clay; friable strong medium (11 mm) subangular blocky structure; gradual boundary to:
B22	30–110	Brown (7.5YR4/4); light clay; friable moderate angular blocky structure (1 mm); angular weathering sandstone fragments common; clear irregular boundary to:
C	110+	Yellowish brown (10YR5/6); light clay; weak subangular blocky structure; weathering sandstone fragments common.

Melacic, Dystrophic, Brown Dermosol

[1] Source: Pitt AJ (1981) A study of the land in the catchments of the Otway Range and adjacent plains. TC-14. Soil Conservation Authority. Kew, Victoria

Analytical data[2]

Site OTR736 Horizon	Sample depth cm	pH H_2O	pH $CaCl_2$	EC dS/m	NaCl %	Ex Ca $cmol_c/kg$	Ex Mg $cmol_c/kg$	Ex K $cmol_c/kg$	Ex Na $cmol_c/kg$	Ex Al mg/kg	Ex Acidity $cmol_c/kg$	FC –10kPa %	PWP –1500kPa %	KS %	FS %	Z %	C %
A1	0-10	5.5	N/R	0.084	0.008	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
A1	10-20	5.3	N/R	0.045	0.005	0.2	0.2	0.5	0.05	N/R	N/R	N/R	N/R	4	41	27	23
A1	20-25	5.2	N/R	0.039	0.003	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
B21	25-30	5.1	N/R	0.038	0.004	0.03	0.06	0.4	0.03	N/R	N/R	N/R	N/R	2	29	23	38
B22	60-90	4.8	N/R	0.039	0.005	<0.01	<0.01	0.4	<0.01	N/R	N/R	N/R	N/R	5	26	19	44
C	120-150	4.9	N/R	0.032	0.004	<0.01	<0.01	0.2	<0.01	N/R	N/R	N/R	N/R	21	42	18	16

Management considerations

The gradational soil profile has few physical limitations for agricultural production. This allows water and gas (air) to move without physical limitations, but remains dependent on any chemical or depth restrictions. Friable surface soils (and subsoils) occur where there is a build up of organic matter, (and to some extent iron rich clay complexes) generally in cooler wetter areas (less extreme wetting and drying cycling). The acidic subsoil most likely reflects the acidic nature of the parent material or where there has been sufficient leaching of the soil (possibly due to the high rainfall of the Otways). These subsoils affect nutrient availability, creating a nutrient imbalance and the potential for aluminium and manganese toxicity. Deficiencies of calcium, potassium and molybdenum are likely. Charcoal was also observed in the profile at 15cm, possibly an indicator of historic fires.

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