

RED LOAM ON LIMESTONE

General Description: *Well structured red clay loam grading to light clay over calcrete at variable depths to 100 cm. Small ironstone gravels common in lower profile.*

Landform: Gently undulating plains and low rises

Substrate: Calcarenite and marl or calcareous clay

Vegetation: -

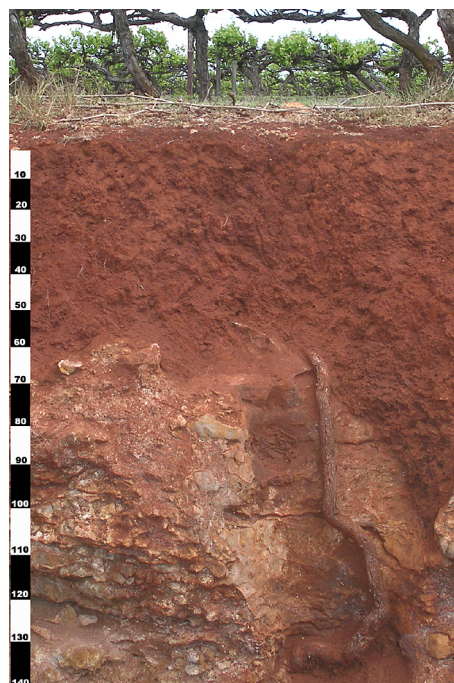


Type Site:	Site No.:	SE095	1:50,000 mapsheet:	7023-2 (Penola)
	Hundred:	Comaum	Easting:	485270
	Section:	149	Northing:	5872600
	Sampling date:	15/10/2004	Annual rainfall:	645 mm average

Plain. Firm surface soil.

Soil Description:

Depth (cm)	Description
0-20	Hard dark reddish brown clay loam with medium to fine polyhedral structure.
20-45	Friable dark reddish brown light clay with strong medium size polyhedral structure.
45-70	Dark reddish brown clay loam with strong medium size polyhedral structure and 10% small ironstone gravel.
70-120	Hard calcrete with chert cobbles.
120-200	Moderately cemented calcrete with hard chert or flinty cobbles.



Classification: Haplic, Petrocalcic, Red Dermosol; medium, non-gravelly, clay loamy / clayey, moderate



Summary of Properties

Drainage: Well drained. The soil rarely remains wet for more than a day or so following heavy or prolonged rainfall.

Fertility: Inherent fertility is high as indicated by the sum of cations. These soils are characterized by high calcium saturation (80% at the surface). Of tested nutrient elements, phosphorus, sulphur and zinc concentrations are marginal.

pH: Moderately alkaline.

Rooting depth: 70 cm (top of calcrete) except where solution holes or fractures occur.

Barriers to root growth:

Physical: Hard calcrete from 70 cm restricts root growth. Calcrete generally contains fractures and/or solution holes allowing root penetration into the softer material underneath. The calcrete is usually ripped pre-establishment. This further improves root penetration.

Chemical: There are no chemical barriers, and the calcareous material below the calcrete cap is generally satisfactory for root growth (i.e. not strongly alkaline, not saline, sodic or high in boron).

Waterholding capacity: Approximately 100 mm (total available) and 55 mm (readily available) above the calcrete cap.

Seedling emergence: Satisfactory, although loss of organic matter may cause hard setting and surface sealing.

Workability: Firm surface is easily worked

Erosion Potential:

Water: Low

Wind: Low

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-20	8.1	7.3	0.6	0.09	0.35	1.7	38	773	9	3.0	1.3	9.3	63	1.6	392	23.0	18.2	2.6	0.6	1.6	2.6
20-45	8.3	7.4	0.4	0.08	0.32	1.0	17	452	11	3.9	1.2	3.0	46	0.8	266	20.8	16.0	2.6	1.0	1.2	4.6
45-70	8.5	7.4	0.5	0.14	0.56	0.9	26	391	42	13	1.1	1.7	99	2.4	711	18.2	12.9	2.2	2.1	1.0	11.4

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC, in this case estimated from the sum of cations.

Further information: [DEWNR Soil and Land Program](#)

