SHALLOW RED CLAY ON CALCRETE

General Description: Dark reddish brown well structured clay over calcrete shallower than

50 cm

Landform: Very low rises (islands in

ancient back lagoons) on flat

plains

Substrate: Calcreted limestone of the

Padthaway Formation.

Vegetation:



Type Site: Site No.: SE161C 1:50,000 mapsheet: 7023-2 (Penola)

Hundred:ComaumEasting:485840Section:471Northing:5869310

Sampling date: 27/02/2008 Annual rainfall: 655 mm average

Slight rise. Firm (inter-row) to hard (row) surface with no stones. Non irrigated grape vines.

Soil Description:

Depth (cm) Description

0-10 Dark reddish brown friable light clay with

moderate fine polyhedral structure. Clear to:

Dark reddish brown firm light medium clay with

moderate fine polyhedral structure and 10-20%

calcrete fragments to 20 mm. Sharp to:

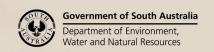
20-40 Mainly hard calcrete, with some softer pockets

and minor clay infill. Gradual to:

40-60 Mainly soft carbonate with some hard fragments.



Classification: Haplic, Petrocalcic, Red Dermosol; medium, non-gravelly, clayey / clayey, very shallow





Summary of Properties

Drainage: Rapidly drained. The profile is rarely saturated for more than a couple of hours at a time.

Fertility: Inherent fertility is moderately high, as indicated by the exchangeable cation data. This is

due to the high clay and organic matter contents of the surface layers. Laboratory data

indicate satisfactory levels of all tested nutrients.

pH: The soil is slightly alkaline, the carbonate layers are alkaline.

Rooting depth: 20 cm in sampling pit (calcrete).

Barriers to root growth:

Physical: The calcrete is a significant barrier to root growth, although there is generally some

fracturing, allowing limited exploration of deeper layers below the calcrete cap. These soils are usually ripped pre-establishment. Variations in depth to the calcrete are more

significant in dry vineyards than where irrigation is used.

Chemical: There are no chemical limitations.

Waterholding capacity: Approximately 40 mm in the potential rootzone.

Seedling emergence: Satisfactory.

Workability: Satisfactory.

Erosion Potential:

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaC1 ₂		EC1:5 dS/m		Cl mg/kg	%	NH_4	P	K	mg/kg	Fe	Boron mg/kg	Trace Elements mg/kg (DTPA)			Sum cations			ngeable mol(+)/kg		Est. ESP	
								mg/kg	mg/kg	mg/kg		mg/kg		Cu	Fe	Mn	Zn	cmol (+)/kg	Ca	Mg	Na	K	
0-10	7.9	7.2	0	0.18	0.54	5	4.22	21	147	643	10.7	1	1.5	3.87	143	19.2	4.15	29.1	25.6	1.79	0.11	1.63	0.4
10-20	7.8	7.0	0	0.07	0.47	11	2.23	-	44	251	7.1	1060	-		-	-	1	21.5	19.7	1.00	0.17	0.64	0.8
20-40	8.9	7.9	-	0.07	0.35	26	-	-	-	-	-	-	-		-	-	1	-	-	1	-	-	-
40-60	8.6	7.6	-	0.07	0.27	7	-	-	-	-	-	-	-		-	-	1	-	-	1	-	-	-

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 by the sum of cations.

Further information: DEWNR Soil and Land Program

