

SHALLOW CALCAREOUS LOAM OVER CALCRETE

General Description: *Calcareous loam becoming more clayey and with calcrete fragments at depth, over calcrete within 50 cm*

Landform: Flat plains (relict lagoon beds) in an ancient coastal dune - corridor system.

Substrate: Calcreted marl and limestone of the Padthaway Formation.

Vegetation: Blue gum woodland.



Type Site: Site No.: SE046

1:50,000 sheet: 6925-1 (Keith)

Hundred: Stirling

Annual rainfall: 475 mm

Sampling date: 08/11/95

Landform: Plain

Surface: Hard setting with 2-10% calcrete stone

Soil Description:

Depth (cm)	Description
0-10	Dark brown moderately calcareous hard fine sandy clay loam with moderate granular structure. Abrupt to:
10-25	Brown moderately calcareous weakly structured fine sandy light clay. Abrupt to:
25-35	Brown very highly calcareous hard massive fine sandy clay loam with more than 50% calcrete fragments. Abrupt to:
35-70	Calcrete pan. Clear to:
70-90	Light brownish grey very highly calcareous brittle fine sandy clay loam. Clear to:
90-300	Calcrete pan.



Classification: Ceteric, Petrocalcic, Calcic Calcarosol; medium, slightly gravelly, clay loamy / clayey, shallow

Summary of Properties

Drainage	Well drained. The soil is unlikely to remain wet for more than a few days.
Fertility	Natural fertility is moderate to high as indicated by the CEC values. However, high pH and carbonate content tend to reduce availability of phosphorus, zinc and manganese, which should be monitored in the plant. Data indicates that all nutrients are in adequate supply at this site.
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	35 cm at inspection point, but this varies depending on the depth to the sheet calcrete.
Barriers to root growth	
Physical:	Sheet rock at shallow depth.
Chemical:	High pH and carbonate content below the calcrete.
Water holding capacity	Approximately 50 mm above calcrete (moderately low). Some root growth occurs in the calcrete where there are cracks and fissures, so this figure may be misleading.
Seedling emergence	Good.
Workability	Good.
Erosion Potential	
Water:	Low.
Wind:	Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.1	7.5	0.7	0.14	0.60	1.9	46	292	11	0.9	0.58	21	6.1	0.68	15.6	13.04	2.38	0.12	0.69	0.8
0-10	8.3	7.8	3.4	0.14	0.60	1.6	34	269	9	0.7	-	-	-	-	14.7	12.36	3.13	0.13	0.61	0.9
10-25	8.3	7.7	0.3	0.10	0.41	0.6	11	172	7	0.5	-	-	-	-	14.2	10.72	2.93	0.13	0.36	0.9
25-35	8.5	7.9	16.8	0.15	0.48	0.8	23	175	9	0.5	-	-	-	-	19.4	15.90	4.72	0.29	0.48	1.5
35-70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70-90	9.0	8.2	59.5	0.15	0.62	1.1	5	115	14	0.4	-	-	-	-	9.3	7.17	3.37	0.19	0.23	2.0
90-300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.

CEC (cation exchange capacity) is 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.