SHALLOW SAND OVER SANDY CLAY ON CALCRETE

General Description: Loamy sand to sand over a brown sandy clay on calcrete at shallow depth

Landform: Flat to very gently undulating

plain with frequent low sandhills, isolated stony rises and swamps in depressions

Substrate: Calcreted calcarenite

(Bridgewater Formation).

Vegetation: Mallee.



Type Site: Site No.: MM105 1:50,000 mapsheet: 6826-2 (Culburra)

Hundred:RichardsEasting:408100Section:134Northing:6016350

Sampling date: 15/03/1993 Annual rainfall: 500 mm average

Low rise on plain, with a soft surface and 2-10% calcrete (60-200 mm).

Soil Description:

Depth (cm) Description

0-8 Dark greyish brown loose loamy sand. Clear to:

8-16 Brown soft sand. Sharp to:

Dark brown hard massive sandy clay. Sharp to:

26-45 Calcrete comprising cemented nodules and

pockets of dark yellowish brown hard sandy clay.

Abrupt to:

45-60 Laminar calcrete. Clear to:

60-105 Olive yellow and yellowish brown firm massive

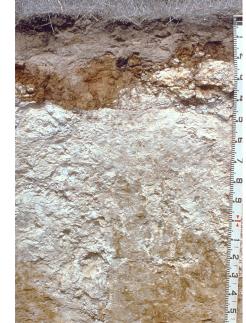
very highly calcareous sandy clay with 20-50% carbonate nodules (60-200 mm). Diffuse to:

105-160 Yellowish brown and olive yellow soft massive

very highly calcareous sandy loam with 10-20%

carbonate nodules (6-20 mm).

Classification: Haplic, Petrocalcic, Brown Chromosol; medium, slightly gravelly, sandy / clayey, shallow







Soil Characterisation Site data sheet

Summary of Properties

Drainage: Well drained. Soil rarely remains saturated for more than a few days.

Fertility: Inherent fertility is low, as indicated by the exchangeable cation data. Regular

phosphorus applications are essential. Nitrogen content depends on pasture condition. Zinc and copper deficiencies are likely, although levels at the sampling site are adequate. Manganese may be required by cereals and lupins. Organic carbon

concentrations are good.

pH: Neutral at the surface, strongly alkaline at depth.

Rooting depth: 26 cm in pit.

Barriers to root growth:

Physical: The calcrete severely retards root growth.

Chemical: There are no chemical barriers above the calcrete, other then the low nutrient retention

capacity of the surface soil. High pH, salinity and sodicity limit further root growth

should any penetrate the calcrete.

Waterholding capacity: 25 mm in rootzone.

Seedling emergence: Satisfactory, but can be reduced by stones.

Workability: Loose to soft surface is easily worked, but stones may interfere with equipment.

Erosion Potential:

Water: Low.

Wind: Moderately low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaC1 ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	mg/kg	8 8				CEC cmol	Exchangeable Cations cmol(+)/kg				ESP
										Cu	Fe	Mn	Zn	(+)/kg	Ca	Mg	Na	K	
Paddock	7.0	6.6	\	0.08	0.67	1.3	16	150	060	0.28	-	3.0	1.1	6.1	6.84	0.79	0.06	0.50	1.0
0-8	7.3	6.8	<1	0.09	0.73	1.2	25	260	0.80	0.19	-	2.7	0.76	7.0	5.70	0.67	0.08	0.74	1.1
8-16	7.2	6.5	<1	0.04	0.38	0.3	5	160	0.48	<0.05	-	0.70	0.07	2.8	2.49	0.21	0.06	0.42	na
16-26	7.9	7.4	<1	0.14	0.80	0.5	3	200	1.4	0.06	-	0.45	< 0.06	18.5	13.38	1.99	0.79	0.80	4.3
26-45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45-60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
60-105	9.2	8.2	21	0.91	9.30	<0.1	<2	280	2.5	<0.05	-	0.47	0.27	11.2	5.96	2.63	3.44	0.80	30.7
105-160	9.4	8.3	22	0.50	4.85	<0.1	<2	72	0.30	<0.05	-	1.4	0.70	1.7	1.73	0.86	0.54	0.22	na

Note: Paddock sample bulked from 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.

Further information: DEWNR Soil and Land Program



