

CALCAREOUS CLAY LOAM ON MARL

General Description: *Black calcareous organic loam over grey highly calcareous clay*

Landform: Sub coastal swamps in swales between dunes.

Substrate: Marl

Vegetation: Sedges



Type Site:	Site No.:	SE093	1:50,000 mapsheet:	6823-1 (Robe)
	Hundred:	Waterhouse	Easting:	395750
	Section:	439	Northing:	5888080
	Sampling date:	15/10/2004	Annual rainfall:	675 mm average

Swamp in narrow swale.

Soil Description:

Depth (cm)	Description
0-20	Black highly calcareous organic-rich loam with moderate medium size polyhedral structure. Clear boundary to:
20-35	Dark grey very highly calcareous light clay with strong medium sized polyhedral structure. Clear boundary to:
35-55	Grey very highly calcareous sandy clay loam. Gradual boundary to:
55-100	Light yellowish brown very highly calcareous sand.

Watertable at 95 cm.



Classification: Melanic, Calcarosolic, Oxyaquic, Hydrosol; medium, non-gravelly, loamy/clayey, moderate



Summary of Properties

Drainage: Poorly drained and frequently inundated. The soil is wet for several months or more in most seasons.

Fertility: Inherent fertility is high, but tests indicate that trace element concentrations are low. High carbonate levels suppress availability of trace elements, as well as phosphorus.

pH: Alkaline throughout.

Rooting depth: 75 cm or more in pit.

Barriers to root growth:

Physical: There are no physical barriers, other than the shallow watertable.

Chemical: High carbonate concentrations prevent good root growth unless fertilizers are applied as foliar sprays or in liquid form.

Waterholding capacity: Approximately 110 mm.

Seedling emergence: Satisfactory, provided watertable is below surface.

Workability: Easily workable, but wetness means poor access for machinery till late in the season.

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	8.6	8.0	67.2	0.27	0.84	7.5	30	128	42	14.0	3.8	0.7	30	1.5	6.9	48.2	27.9	19.4	0.6	0.3	1.2
20-35	9.1	8.1	85.1	0.27	0.89	2.5	12	97	47	12.5	4.2	0.3	19	0.6	1.4	30.0	16.1	12.7	1.0	0.2	3.2
35-55	9.2	8.1	80.6	0.71	3.65	1.2	4	44	643	132	2.8	0.4	54	0.3	1.9	22.4	12.6	7.34	2.32	0.12	10.4
55-100	9.2	8.3	60.5	0.21	1.82	1.2	2	20	132	23	0.4	0.2	47	0.2	3.3	9.4	7.77	1.14	0.41	0.05	4.4

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 the sum of cations.

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

