DEEP BLACK CLAY

General Description: Black well structured seasonally cracking clay with increasing carbonate segregations at depth

Landform: Flat plains

Substrate: Lagoon-deposited calcareous

clay of the Padthaway

Formation.

Vegetation:



Type Site: Site No.: SE160A 1:50,000 mapsheet: 7023-4 (Bool Lagoon)

Hundred:KillanoolaEasting:475040Section:403Northing:5882840

Sampling date: 21/08/2007 Annual rainfall: 625 mm average

Flat plain. Seasonally cracking, crusting surface with no stones. Non irrigated pasture.

Soil Description:

Depth (cm) Description

0-10 Black friable light clay with strong fine granular

structure. Gradual to:

10-20 Black friable moderately calcareous light medium

clay with strong fine polyhedral structure.

Gradual to:

20-35 Black friable slightly calcareous light medium

clay with strong fine to medium polyhedral

structure. Gradual to:

35-65 Black friable highly calcareous light medium clay

with strong fine to medium polyhedral structure

and 20-50% fine carbonate segregations.

Diffuse to:

Very dark grey friable very highly calcareous

light medium clay with strong fine to medium polyhedral structure and about 50% soft to hard

carbonate segregations. Diffuse to:

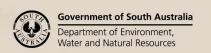
100-150 Very dark grey friable very highly calcareous

light medium clay with strong medium polyhedral structure and about 50% soft to hard carbonate

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segregations.

Classification: Melanic-Sodic, Hypercalcic, Black Dermosol; medium, non-gravelly, clayey/clayey, very deep





Summary of Properties

Drainage: Moderately well drained due to favourable soil permeability, but rising seasonal

watertables and inundation are likely to cause saturation for several weeks at a time in

average to wetter seasons.

Fertility: Inherent fertility is very 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 with the possible exception of zinc.

pH: Neutral at the surface, alkaline with depth, and strongly alkaline below 100 cm

Rooting depth: 150 cm in sampling pit, but few roots below 100 cm.

Barriers to root growth:

Physical: There are no significant physical barriers to root growth.

Chemical: High carbonate content reduces availability of zinc at depth.

Waterholding capacity: Approximately 180 mm in the potential rootzone.

Seedling emergence: Satisfactory.

Workability: Fair. Clayey surface becomes sticky when wet.

Erosion Potential:

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaC1 ₂	CO ₃	EC1:5 dS/m		Cl mg/kg	%	NH ₄	P	K	mg/kg	Fe	Boron mg/kg	Trace Elements mg/kg (EDTA)			Sum cations	Exchangeable Cations cmol(+)/kg			Est. ESP		
								mg/kg	mg/kg	mg/kg		mg/kg		Cu	Fe	Mn	Zn	cmol (+)/kg	Ca	Mg	Na	K	
0-10	6.7	5.9	0	0.12	0.46	21	4.42	44	49	1520	5.2	560	2.0	2.11	110	21.0	1.74	36.5	24.2	9.55	0.35	2.41	1.0
10-20	7.1	6.1	2.2	0.08	0.27	6	2.22	-	8	840	3.4	561	-	1	1	1	1	37.4	24.1	10.9	0.45	1.94	1.2
20-35	7.7	6.8	0.4	0.12	0.41	3	1.82	-	6	680	6.7	544	ı	1	ı	1	1	41.1	28.0	10.9	0.45	1.68	1.1
35-65	8.5	7.8	7.8	0.20	0.79	28	1.54	-	6	550	6.2	461	ı	1	ı	1	1	38.7	26.8	9.98	0.52	1.38	1.3
65-100	8.8	8.1	30.9	0.26	1.06	43	1.10	-	4	355	5.9	385	-		-	-	-	36.8	21.2	13.3	1.27	1.08	3.5
100-150	9.6	8.4	25.0	0.43	2.01	234	0.77	-	6	426	19.6	387	-	-	1	-	-	32.4	10.9	14.1	6.33	1.12	19.5

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



