

DEEP GRADATIONAL CLAY LOAM

General Description: *Dark well structured clay loam grading to a well structured brown or dark clay*

Landform: Undulating rises.

Substrate: Calcrete.

Vegetation:



Type Site:	Site No.:	SE064	1:50,000 mapsheet:	7022-3 (Schank)
	Hundred:	Young	Easting:	468100
	Section:	7	Northing:	5821350
	Sampling date:	20/08/1997	Annual rainfall:	765 mm average

Upper slope of undulating rise, 2.5%. Firm surface with no stones.

Soil Description:

Depth (cm)	Description
0-25	Very dark grey friable fine sandy clay loam with moderate polyhedral structure. Gradual to:
25-54	Brown firm light medium clay with strong medium subangular blocky structure. Diffuse to:
54-77	Strong brown, brown and red firm medium clay with strong medium polyhedral structure. Diffuse to:
77-117	Yellowish brown, dark yellowish brown and red firm medium heavy clay with strong polyhedral structure. Gradual to:
117-140	Yellowish brown and yellowish red firm medium heavy clay with strong polyhedral structure. Sharp to:
140-145	Strongly cemented massive calcrete pan.



Classification: Melanic-Mottled, Petrocalcic, Brown Dermosol; medium, non-gravelly, clay loamy/clayey, deep



Summary of Properties

Drainage: Moderately well drained. The soil may remain wet for a week following heavy or prolonged rainfall.

Fertility: Inherent fertility is high, as indicated by the exchangeable cation data. Nutrient retention capacity is high, due to the favourable clay and organic matter contents.

pH: Slightly acidic at the surface, alkaline with depth.

Rooting depth: 140 cm in pit, but few roots below 77 cm.

Barriers to root growth:

Physical: The clayey subsoil restricts root growth to some extent, but the calcrete is the major barrier. However at 140 cm, it is unlikely to affect crops and pastures, except lucerne.

Chemical: There are no chemical barriers, but low subsurface copper and zinc levels may retard root growth.

Waterholding capacity: Approximately 150 mm above the calcrete.

Seedling emergence: Satisfactory to fair. Loss of surface condition and development of hard setting will affect establishment.

Workability: The firm surface is easily worked, but if structure deteriorates, so will workability.

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 mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	Ext Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
Paddock	6.1	5.5	0	0.24	-	3.65	24	380	18.9	1.3	1.0	214	15	2.1	-	11.0	1.07	0.33	1.02	-	1.2
0-25	5.5	4.6	0	0.04	-	2.13	6	115	5.2	0.8	0.69	237	85	0.90	-	7.90	1.12	0.20	0.28	-	1.4
25-54	6.1	5.2	0	0.03	-	1.22	1	215	5.3	1.2	0.50	79	9.1	0.67	19	11.1	3.73	0.30	0.61	1.6	0.9
54-77	6.6	5.8	0	0.04	-	0.93	2	300	7.8	1.1	0.33	43	1.4	0.63	-	15.1	5.97	0.42	0.85	-	0.9
77-117	6.6	5.9	0	0.04	-	0.68	1	240	12.9	0.9	0.28	37	2.5	0.66	-	17.8	4.98	0.53	0.76	-	1.0
117-140	7.2	6.5	0.8	0.08	-	0.68	1	253	15.3	1.0	0.41	64	17.4	0.64	31	21.3	1.68	0.49	0.66	1.6	1.0
140-145	8.9	7.6	89	0.10	-	0.20	1	83	4.9	0.4	0.31	7	7.6	0.66	6	4.95	0.38	0.13	0.14	na	0.9

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.

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

