

GRADATIONAL CALCAREOUS LOAM

General Description: *Calcareous loam becoming more clayey and calcareous with depth over a clay substrate*

Landform: Gently undulating plain.

Substrate: Tertiary Hindmarsh Clay, capped by highly calcareous Woorinen Formation deposits.

Vegetation:



Type Site:	Site No.:	CY035	1:50,000 mapsheet:	6430-2 (Alford)
	Hundred:	Wiltunga	Easting:	768400
	Section:	236	Northing:	6260130
	Sampling date:	12/3/1996	Annual rainfall:	365 mm average

Low rise. Soft surface with 10-20% calcrete stone (20-60 mm).

Soil Description:

Depth (cm)	Description
0-6	Dark brown friable highly calcareous cloddy loam. Abrupt to:
6-12	Dark brown hard massive highly calcareous light clay loam (plough pan). Abrupt to:
12-30	Reddish brown friable massive highly calcareous light clay. Clear to:
30-48	Reddish brown friable massive highly calcareous light clay. Clear to:
48-92	Yellowish red friable massive very highly calcareous light medium clay. Gradual to:
92-150	Yellowish red friable massive very highly calcareous medium clay.



Classification: Endohypersodic, Regolithic, Hypercalcic Calcarosol; medium, gravelly, loamy / clayey, deep



Summary of Properties

Drainage:	Moderately well drained. The soil may remain wet for up to a week following heavy or prolonged rainfall.
Fertility:	Inherent fertility is moderate, as indicated by the exchangeable cation data. Favourable surface clay and organic matter levels provide nutrient retention, but fine carbonate throughout the profile tends to reduce availability of some elements, particularly trace elements. Phosphorus levels are marginal - regular applications are needed. Concentrations of other tested elements are satisfactory.
pH:	Alkaline at the surface, strongly alkaline with depth.
Rooting depth:	50 cm in pit.
Barriers to root growth:	
Physical:	There are no significant physical barriers. The plough pan at this site can be removed by deep working.
Chemical:	High pH, sodicity and boron concentrations from 48 cm prevent deeper root growth.
Waterholding capacity:	Approximately 80 mm (moderate) in rootzone.
Seedling emergence:	Good to fair. Organic matter levels need to be maintained to preserve surface structure.
Workability:	Good.
Erosion Potential:	
Water:	Low.
Wind:	Low to moderately 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 (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.3	7.9	5.2	0.14	0.82	1.5	23	476	7	3.0	0.70	6	6.0	0.97	15.2	14.04	1.50	0.15	1.23	1.0
0-6	8.3	7.9	6.1	0.15	1.25	1.4	30	603	9	2.6	-	-	-	-	13.9	12.99	1.30	0.12	1.55	0.9
6-12	8.3	7.9	5.0	0.15	1.15	1.4	17	519	7	2.8	-	-	-	-	16.4	15.43	1.57	0.14	1.41	0.9
12-30	8.5	7.9	13.9	0.14	0.49	1.2	<4	282	6	3.4	-	-	-	-	23.8	20.22	4.49	0.44	0.91	1.8
30-48	8.7	8.0	20.5	0.16	0.53	0.7	<4	195	5	3.9	-	-	-	-	22.0	16.53	6.06	0.99	0.65	4.5
48-92	9.7	8.4	41.4	0.65	2.34	0.3	<4	185	85	27.1	-	-	-	-	16.5	3.55	8.33	6.66	0.52	40.4
92-150	9.8	8.4	44.4	0.52	1.52	0.2	<4	197	40	23.6	-	-	-	-	11.8	2.12	5.96	5.16	0.55	43.6

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](#)

