

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 sheet: 6430-2 (Alford)

Hundred:

Wiltunga

Annual rainfall: 350 mm

Sampling date:

12/03/96

Landform: Low rise, 1% slope

Surface: Soft 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.
Water holding 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 -S 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