

SANDY LOAM OVER RED SANDY CLAY

General Description: *Thin to medium thickness sandy loam over a red weakly structured sandy clay, calcareous with depth*

Landform: Gently undulating plains.

Substrate: Red and grey mottled coarsely structured clay (Tertiary Hindmarsh Clay).

Vegetation:



Type Site: Site No.: CY033

1:50,000 sheet: 6430-2 (Alford)

Hundred: Ninnes

Annual rainfall: 375 mm

Sampling date: 11/03/96

Landform: Very gentle slope of 1.5%

Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-10	Dark brown friable coarsely cloddy sandy loam. Sharp to:
10-26	Dark reddish brown very hard sandy light clay with weak coarse subangular blocky structure. Abrupt to:
26-54	Brown firm massive very highly calcareous fine sandy light clay. Clear to:
54-110	Reddish yellow firm massive very highly calcareous light clay with 20-50% platy calcrete fragments in upper 15 cm. Clear to:
110-145	Yellowish red and light yellowish brown hard medium clay with weak coarse prismatic, breaking to moderate coarse subangular blocky structure.



Classification: Sodic, Supracalcic, Red Chromosol; medium, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage Well to 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 organic matter levels and 15-20% clay content at the surface provide reasonable nutrient retention capacity. Regular phosphorus applications are nevertheless necessary - levels are very high at the sampling site. Concentrations of other tested elements are satisfactory.

pH Alkaline throughout, more strongly so with depth.

Rooting depth Not recorded. Potential root zone depth is 110 cm, but densities are likely to be low from 54 cm.

Barriers to root growth

Physical The hard clayey subsoil causes reduced root density.

Chemical High pH, sodicity and boron concentrations from 110 cm prevent deeper growth, but high carbonate content from 54 cm causes nutrient imbalances and reduces availability, so root densities are likely to be low from this depth.

Water holding capacity Approximately 80 mm in the potential root zone.

Seedling emergence Good to fair. Surface structure is cloddy, organic matter levels need to be maintained, and possibly workings reduced, to preserve & improve surface structure.

Workability Good.

Erosion Potential

Water Low.

Wind Moderately low to 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	7.9	7.2	2	0.26	1.17	1.51	77	506	14	1.4	0.86	18	11.2	5.97	-	15.5	1.46	0.28	1.43	1.5
0-10	8.0	7.3	1	0.14	0.99	1.57	59	569	8.1	1.6	-	-	-	-	-	14.1	1.28	0.22	1.53	1.3
10-26	8.5	7.6	2	0.12	0.45	0.47	7	311	4.1	1.2	-	-	-	-	-	18.5	1.69	0.12	0.94	0.6
26-54	8.7	7.9	14	0.14	0.42	0.44	3	123	8.9	0.5	-	-	-	-	-	17.8	1.96	0.23	0.45	1.1
54-110	9.2	8.1	53	0.39	2.42	0.20	2	164	67	4.3	-	-	-	-	-	9.52	5.45	2.58	0.51	14.3
110-145	9.4	8.6	2	0.71	1.27	0.09	2	405	33	21	-	-	-	-	-	4.29	9.47	9.51	1.40	38.5

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 estimated by dividing the exchangeable sodium value by the sum of the exchangeable cations (an approximation in the absence of CEC data).