LOAM OVER WELL STRUCTURED RED CLAY

General Description: *Loamy to clay loamy stony surface soil overlying a dark reddish brown stony clay subsoil with abundant carbonate at depth, grading to very stony medium to fine grained alluvium*

Landform: Upper slopes of quartz stony pediments

Substrate: Very stony (quartzite) sandy clay loam to sandy clay sediments (Telford Gravel)

Vegetation:

Type Site:

Site No.:	CU030	1:50,000 mapsheet:	6632-3 (Pekina)
Hundred:	Pekina	Easting:	268800
Section:	22	Northing:	6363900
Sampling date:	03/11/1993	Annual rainfall:	410 mm average

Upper slope of pediment, 4% slope. Hard setting surface with 10-20% quartzite stone.

Soil Description:

Depth (cm)	*Description*
0-10	Dark reddish brown fine sandy clay loam with weak granular structure and 2-10% quartz gravel. Abrupt to:
10-25	Dark reddish brown medium heavy clay with strong coarse blocky structure and 2-10% quartzite stones. Clear to:
25-45	Dark reddish brown medium heavy clay with strong coarse blocky structure and 2-10% quartzite stones. Clear to:
45-80	Red very highly calcareous massive light medium clay with 10-20% calcrete and quartzite stones and more than 20% soft carbonate segregations. Diffuse to:
80-140	Red highly calcareous massive sandy medium clay with more than 50% quartzite and calcrete stones (Telford Gravel Formation). Clear to:
140-150	Weathering shale.

Classification: Sodic, Hypercalcic, Red Chromosol; medium, gravelly, clay loamy / clayey, deep

Summary of Properties

Drainage: Moderately well drained. The slope of the land and the structure of the soil are such that waterlogging is unlikely to be a problem.

Chemical fertility: The surface soil has a high nutrient retention capacity (due the clay and organic matter content), and a very high capacity in the subsoil due to the calcium saturated clay. The soil is well supplied with nutrients, although phosphorus is low.

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

Root depth: 80 cm in pit.

Barriers to root growth:

Physical: Heavy stone and rock at base of the soil limit root growth.

Chemical: There are no apparent chemical barriers.

Waterholding capacity: Approximately 100 mm in rootzone (very high).

Seedling emergence: Good, provided surface condition is maintained.

Workability: Fair to good, depending on stone coverage (tyne wear) and surface condition.

Erosion potential:

Water: Water erosion potential is moderate, due to the slope. The soil itself is relatively resistant to erosion.

Low: Wind erosion potential is low.

Laboratory Data

Depth cm	pH H_2O	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	6.3	6.1	0	0.11	0.64	1.9	16	704	-	1.9	1.0	15	37	0.7	14.9	10.75	2.15	0.30	2.38	2.0
0-10	6.4	6.2	0	0.12	0.76	2.0	20	753	-	2.1	1.1	18	38	0.7	15.1	11.38	2.30	0.27	2.58	1.8
10-25	6.5	6.0	0	0.04	0.19	1.1	7	475	-	2.2	1.4	8	18	0.3	19.0	13.99	3.13	0.34	1.86	1.8
25-45	7.2	6.9	0.1	0.06	0.19	1.0	<4	356	-	2.7	1.2	6	6.5	0.2	33.9	27.75	6.32	0.63	1.81	1.9
45-80	8.4	7.9	26.7	0.12	0.31	0.5	<4	239	-	2.0	0.9	4	2.7	0.3	22.5	18.53	4.85	0.60	0.98	2.7
80-140	8.7	8.1	33.9	0.16	0.37	0.1	<4	326	-	2.3	0.6	4	1.8	0.3	20.8	12.21	8.98	1.32	1.26	6.3

Note: Paddock sample bulked from 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