IRONSTONE GRAVELLY LOAM OVER RED CLAY

(Ironstone gravelly red brown earth)

General Description: *Loam over red structured clay with minor to moderate ironstone gravel throughout and calcareous with depth*

Landform: Undulating rises.

Substrate: Heavy clay.

Vegetation:

Type Site:

Site No.:	EL007	1:50,000 mapsheet:	6029-1 (Cockaleechie)
Hundred:	Shannon	Easting:	570800
Section:	3	Northing:	6222350
Sampling date:	26/03/1992	Annual rainfall:	425 mm average

Gentle slope of 2-3%. Hard setting surface with 2-10% calcrete (20-60 mm).

Soil Description:

Depth (cm)	*Description*
0-5	Orange firm clay loam with weak subangular blocky structure and 2-10% ironstone concretions. Sharp to:
5-23	Red hard medium clay with strong coarse prismatic breaking to fine angular blocky structure and 2-10% ironstone concretions. Clear to:
23-33	Yellowish red hard very highly calcareous medium clay with moderate subangular blocky structure and 2-10% ironstone concretions. Clear to:
33-110	Reddish yellow hard massive very highly calcareous medium clay with 2-10% ironstone concretions. Clear to:
110-180	Red very hard heavy clay with strong angular blocky structure, 2-10% ironstone concretions and 20-50% fine carbonate segregations.

Classification: Sodic, Hypercalcic, Red Chromosol; thin, slightly gravelly, clay loamy / clayey, very deep

Summary of Properties

Drainage: Moderately well drained. Soil rarely remains wet for more than a few days.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. Nutrient retention capacity is favourable due to high clay and organic matter contents of surface soil. All tested nutrient elements are well supplied.

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

Rooting depth: 33 cm in pit.

Barriers to root growth:

Physical: The hard clayey subsoil restricts root growth to some extent.

Chemical: High pH and sodicity from 33 cm limit deeper root growth.

Waterholding capacity: Approximately 45 mm in the rootzone.

Seedling emergence: Fair. Hard setting surface seals over and may reduce emergence percentages.

Workability: Fair. Limited moisture range over which soil can be effectively cultivated.

Erosion Potential:

Water: Moderately low.

Wind: 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	
0-5	7.7	7.4	9	0.2	0.7	1.57	72	-	8	3.5	1.04	12.1	4.22	0.82	23.8	19.1	3.2	0.49	2.06	2.1
5-23	7.7	7.5	4	0.4	1.8	0.56	8	-	9	3.9	0.33	16.7	0.57	0.45	38.3	29.1	6.8	1.07	1.43	2.8
23-33	8.2	7.9	30	0.4	1.7	-	-	-	8	4.7	0.35	7.8	0.53	0.38	29.7	19.9	7.3	1.83	1.19	6.2
33-110	9.5	8.4	41	0.6	1.8	-	-	-	100	6.7	0.35	7.8	0.53	0.33	18.1	4.6	6.9	6.91	1.20	38.2
110-180	9.5	8.3	27	0.7	2.7	-	-	-	106	9.8	0.48	12.9	1.09	0.43	19.4	3.6	6.5	9.06	1.74	46.7

Note: 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