

SALINE SANDY LOAM OVER RED CLAY (Saline red brown earth)

General Description: *Sandy loam over a coarsely structured sodic red clay, calcareous and marginally to highly saline throughout*

Landform: Plains with saline depressions.

Substrate: Clay.

Vegetation:



Type Site: Site No.: EL101

1:50,000 sheet: 6129-1 (Neill)

Hundred: Dixon

Annual rainfall: 325 mm

Sampling date: 11/03/94

Landform: Marginally saline flat

Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-5	Reddish brown soft slightly calcareous sandy loam with weak fine subangular blocky structure. Clear to:
5-30	Reddish brown soft moderately calcareous medium clay with strong coarse prismatic structure. Clear to:
30-80	Yellowish red soft moderately calcareous medium clay with weak subangular blocky structure and more than 50% fine calcrete fragments. Clear to:
80-110	Reddish brown and grey mottled friable moderately calcareous medium clay with moderate angular blocky structure and more than 50% calcrete fragments (20-60 mm). Gradual to:
110-150	Reddish yellow, grey and red mottled soft moderately calcareous medium clay with weak subangular blocky structure and more than 50% calcrete fragments (60-200 mm). Gradual to:
150-200	Red and brown friable slightly calcareous medium clay with moderate angular blocky structure.



Classification: Calcic, Hypernatric, Red Sodosol; thin, non-gravelly, loamy / clayey, moderate

Summary of Properties

Drainage	Imperfectly drained. The soil may remain wet for several weeks at a time.
Fertility	Inherent fertility is high, as indicated by the exchangeable cation data. Concentrations of all measured nutrient elements are high at the sampling site.
pH	Alkaline throughout.
Rooting depth	150 cm in pit.
Barriers to root growth	
Physical:	The sodic clay subsoil is a potential barrier, but as it is generally moist, it will stay friable.
Chemical:	The soil is moderately to highly saline throughout, restricting the growth of most agricultural plants. In addition, sodicity is very high from 5 cm, and boron concentrations are toxic for most crop species from 30 cm.
Water holding capacity	For non salt tolerant plants, potential root zone depth is zero. For plants which can tolerate high salinity, sodicity and boron, water holding capacity is over 200 mm.
Seedling emergence:	High surface salinity prevents emergence of most species.
Workability:	The soil is easily worked in summer when soil is at its driest. At other times of the year, the land is likely to be boggy.

Erosion Potential

Water:	Low.
Wind:	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	
0-5	8.2	8.0	3	2.34	17.87	1.2	49	960	-	4.3	0.59	6.4	11	0.64	29.9	14.4	8.12	3.55	3.90	11.9
5-30	9.3	8.5	12	1.73	13.63	0.35	8.8	720	-	1.2	1.1	5.9	3.0	0.33	26.9	8.73	7.62	7.60	3.00	28.2
30-80	9.1	8.5	20	2.49	19.16	0.23	<2.0	770	-	31	1.2	4.2	1.3	0.45	28.0	7.44	10.0	7.53	3.05	26.9
80-110	8.9	8.5	22	3.82	28.6	0.21	<2.0	940	-	35	1.0	4.7	1.6	1.7	29.9	5.04	12.4	8.80	3.70	29.4
110-150	8.8	8.4	20	4.60	27.4	0.18	<2.0	890	-	36	0.68	5.0	1.4	0.48	31.7	5.09	13.0	9.07	4.54	28.6
150-200	7.9	7.5	1	3.10	25.5	<0.1	<2.0	630	-	36	0.43	6.2	3.8	0.34	22.6	2.67	9.2	7.99	2.69	35.4

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.