

HIGHLY CALCAREOUS SALINE SANDY LOAM (Magnesia soil)

General Description: *Highly calcareous loam becoming more clayey and calcareous with depth, grading to more than 50% fine or rubbly carbonate in a sandy clay loam matrix - saline throughout*

Landform: Flat plains.

Substrate: Very highly calcareous coarse to medium grained Woorinen Formation deposits.

Vegetation:



Type Site: Site No.: EF017
 1:50,000 sheet: 5533-1 (Charra) Hundred: Horn
 Annual rainfall: 310 mm Sampling date: 1992
 Landform: Flat, 0-1% slope
 Surface: Scalded with no stones

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown firm massive very highly calcareous fine sandy loam. Clear to:
10-30	Brown friable massive very highly calcareous light sandy clay loam. Clear to:
30-65	Yellowish red friable massive very highly calcareous light sandy clay loam with 2-10% carbonate nodules. Gradual to:
65-95	Yellowish red soft massive very highly calcareous sandy clay loam with 2-10% carbonate nodules. Gradual to:
95-125	Strong brown soft massive very highly calcareous light sandy clay loam with 2-10% carbonate nodules. Gradual to:
125-165	As for 95-125 cm. Diffuse to:
165-220	Reddish yellow soft very highly calcareous light sandy clay loam with 20-50% carbonate nodules.



Classification: Hypervescent, Regolithic, Hypercalcic Calcarosol; thick, non-gravelly, loamy/clay loamy, deep

Summary of Properties

Drainage	Well drained. Soil never remains wet for more than a few days.
Fertility	Inherent fertility is moderately low, as indicated by the exchangeable cation data. Clay and organic matter levels are moderate, but very high carbonate levels tie up nutrients, although none appears to be deficient at the sampling site (possibly due to low removal from a low productivity site).
pH	Alkaline throughout.
Rooting depth	Little root growth.
Barriers to root growth	
Physical:	There are no physical barriers.
Chemical:	High salinity and extreme sodicity from the surface severely restrict plant growth.
Water holding capacity	Not applicable.
Seedling emergence:	Poor due to high salinity / sodicity.
Workability:	Easily worked.
Erosion Potential	
Water:	Low.
Wind:	Moderate.

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 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	
0-10	8.9	8.3	31.5	3.09	36.7	1.4	34	914	-	14.2	0.3	2	16.7	0.6	13.1	7.4	2.2	6.53	3.13	50
10-30	9.1	8.3	39.8	1.59	15.4	1.1	6	550	-	17.7	0.3	1	3.5	0.3	12.4	7.3	2.6	5.70	2.03	46
30-65	8.9	8.4	53.4	3.12	31.0	0.7	<4	388	-	33.7	0.2	1	1.1	0.2	8.5	4.6	4.0	4.57	1.48	54
65-95	9.1	8.5	55.3	2.72	30.8	0.7	8	413	-	34.3	0.1	1	0.6	0.2	8.4	3.0	4.6	4.80	1.53	57
95-125	9.2	8.5	61.0	2.28	26.3	0.5	<4	426	-	24.2	0.2	1	0.5	0.3	7.5	2.1	4.1	4.50	1.39	60
125-165	9.3	8.5	66.7	1.71	19.3	0.4	<4	373	-	17.3	0.2	2	0.7	0.2	6.9	2.3	3.0	4.03	1.20	58
165-220	9.2	8.4	73.6	1.79	19.6	0.1	<4	344	-	12.2	0.2	1	0.7	0.2	6.3	2.5	2.8	3.86	1.11	61

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