

SHALLOW HIGHLY CALCAREOUS SANDY LOAM (Chintumba soil)

General Description: *Very highly calcareous loamy sand to sandy loam with variable rubble over calcrete at shallow depth*

Landform: Flat plains.

Substrate: Hard sheet calcrete (Ripon).

Vegetation: Stipa spp.

No landscape image available

Type Site: Site No.: EF021

1:50,000 sheet: 5533-1 (Charra)

Hundred: Horn

Annual rainfall: 310 mm

Sampling date: 22/01/91

Landform: Flat plain

Surface: Firm with no stone

Soil Description:

Depth (cm)	Description
0-15	Brown friable very highly calcareous fine sandy loam with weak granular structure. Clear to:
15-25	Strong brown friable massive very highly calcareous light sandy clay loam with 10-20% carbonate nodules. Abrupt to:
25-	Hard sheet calcrete.



Classification: Hypervescent, Petrocalcic, Hypercalcic Calcarosol; medium, non-gravelly, sandy / loamy, shallow

Summary of Properties

Drainage	Well drained. Soil never remains saturated for more than a day or so.
Fertility	Exchangeable cation data indicate moderate inherent fertility, but very high carbonate concentrations cause significant nutrient fixation. Consequently, although nutrient retention capacity is favourable, release capacity is poor. Phosphorus levels are very low at sampling site and organic carbon levels are high for the rainfall. Levels of other tested nutrient elements are satisfactory.
pH	Alkaline throughout.
Rooting depth	25 cm in pit.
Barriers to root growth	
Physical:	The calcrete layer at shallow depth is the prime determinant of root depth.
Chemical:	The high carbonate concentration is the main chemical limitation.
Water holding capacity	30 mm in the root zone.
Seedling emergence:	Satisfactory.
Workability:	Soft to firm surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Moderately 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	
0-15	8.3	7.6	32	0.1	1.0	1.4	6	720	-	2.6	0.64	2.8	5.5	0.52	20.5	16.5	2.9	1.45	2.90	7
15-25	8.8	7.8	50	0.3	1.2	1.2	2	310	-	4.9	0.72	3.5	1.4	0.14	14.6	11.0	4.1	2.53	1.19	17
25+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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