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.

Type Site:

Site No.:	EF021	1:50,000 mapsheet:	5533-1 (Charra)
Hundred:	Horn	Easting:	342300
Section:	218	Northing:	6449450
Sampling date:	22/01/1991	Annual rainfall:	310 mm average

Flat plain. Firm surface 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.

Waterholding capacity: 30 mm in the rootzone.

Seedling emergence: Satisfactory.

Workability: Soft to firm surface is easily worked.

Erosion Potential:

Water: Low.

Wind: Moderately 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	
0-15	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

Further information: DEWNR Soil and Land Program