CALCAREOUS SANDY LOAM

(Penong soil)

General Description: *Calcareous sandy loam to loam grading to a very highly calcareous sandy clay loam with variable rubble, continuing below 120 cm*

Landform: Very gently undulating plain.

Substrate: Very highly calcareous sandy clay loam (Woorinen Formation).

Vegetation:

Type Site:

Site No.:	EF026	1:50,000 mapsheet:	5534-3 (Penong)
Hundred:	Bagster	Easting:	328350
Section:	22	Northing:	6465500
Sampling date:	28/10/1988	Annual rainfall:	310 mm average

Flat with firm surface and no stones.

Soil Description:

Depth (cm)	*Description*
0-4	Orange soft massive highly calcareous loam. Abrupt to:
4-9	Orange hard massive highly calcareous sandy clay loam. Abrupt to:
9-30	Orange firm massive highly calcareous clay loam. Gradual to:
30-60	As above with 20-50% carbonate nodules (Class III B carbonate). Gradual to:
60-80	Orange friable massive highly calcareous sandy clay loam.

Classification: Hypervescent, Regolithic, Supracalcic Calcarosol; medium, non-gravelly, loamy / clay loamy, deep

Summary of Properties

Drainage: Well drained. The soil is never wet for more than a few days.

Fertility: Inherent fertility is moderately low, as indicated by the exchangeable cation data. High carbonate content to the surface reduces the availability of phosphorus, zinc, manganese and copper.

pH: Strongly alkaline throughout.

Rooting depth: 60 cm in pit.

Barriers to root growth:

Physical: There are no physical barriers.

Chemical: High pH from the surface, high sodicity from 30 cm and high boron concentrations from 10 cm combine to limit root growth.

Waterholding capacity: Approximately 60 mm in the rootzone.

Seedling emergence: Satisfactory.

Workability: Surface soil is firm to soft and 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	
0-4	8.7	7.8	19	0.28	2.94	-	-	-	-	10.50	0.54	2.69	18.9	0.37	16.0	-	3.30	0.74	3.70	5
4-9	9.0	8.0	18	0.60	7.06	-	-	-	-	16.90	0.53	1.77	9.29	0.29	16.0	-	3.40	1.90	4.60	12
9-30	9.2	8.2	32	0.60	6.76	-	-	-	-	21.50	0.52	1.74	6.58	0.16	13.0	-	3.70	2.10	3.70	16
30-60	9.9	8.7	59	0.90	8.23	-	-	-	-	34.60	0.40	1.61	0.97	0.07	8.0	-	4.70	2.60	1.70	33
60-80	9.6	8.7	52	0.88	8.53	-	-	-	-	24.70	0.62	1.30	1.50	0.06	9.5	-	5.20	2.30	1.60	24

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

* Exchangeable calcium (Ca) values not included due to inappropriate laboratory procedure on very highly calcareous samples.

Further information: DEWNR Soil and Land Program