

SHALLOW CALCAREOUS SANDY LOAM OVER CALCRETE

General Description: *Calcareous sandy loam to sandy clay loam with variable rubble, over calcrete at shallow depth*

Landform: Rises on gently undulating plain.

Substrate: Calcrete capped Tertiary light clay.

Vegetation: Mallee



Type Site: Site No.: MM018

1:50,000 sheet: 6827-2 (Buccleuch) Hundred: Marmon Jabuk
 Annual rainfall: 375 mm Sampling date: 08/10/91
 Landform: Stony rise on a gently undulating plain, 2% slope
 Surface: Firm with 20-50% calcrete stones, 60-200 mm

Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown sandy loam with 10-20% calcrete stones (60-200 mm). Abrupt to:
10-18	Red light sandy clay loam. Clear to:
18-32	Reddish brown very highly calcareous sandy clay loam with more than 50% calcrete stones (60-200 mm). Clear to:
32-45	Yellowish red sandy clay loam as above. Sharp to:
45-64	Platy calcrete pan. Clear to:
64-105	Reddish yellow and brown very highly calcareous sandy clay loam with 20-50% carbonate nodules. Diffuse to:
105-190	Orange and brown very highly calcareous light clay with 20-50% fine carbonate. Diffuse to:
190-200	Orange and brown light clay with minor fine carbonate segregations.



Classification: Epibasic, Petrocalcic, Supracalcic Calcarosol; medium, moderately gravelly, loamy / clay loamy, shallow

Summary of Properties

- Drainage** Well drained. Soil never remains wet for more than a few days.
- Fertility** Inherent fertility is moderate, according to the exchangeable cation data. High organic carbon levels and 20% clay provide reasonable nutrient retention capacity. However, phosphorus, zinc and copper concentrations are low at sampling site.
- pH** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth** 45 cm in pit.
- Barriers to root growth**
- Physical:** The calcrete prevents significant root growth.
 - Chemical:** High pH from 45 cm also inhibits root growth.
- Water holding capacity** 30 mm in root zone.
- Seedling emergence:** Slight limitation due to stoniness.
- Workability:** Firm surface easily worked, but stones abrade implements. Stones continually brought to the surface by cultivation.
- 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	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.2	7.5	2	0.12	0.71	1.3	17	310	0.53	0.10	6.1	8.4	0.26	8.3	7.02	1.00	0.20	0.67	2.4
0-10	8.0	7.1	<1	0.07	0.50	1.2	18	240	0.73	0.09	6.2	16	0.34	10.1	9.12	1.13	0.20	0.58	2.0
10-18	8.1	7.2	7	0.05	0.30	0.5	4	130	0.70	0.08	5.4	2.7	<0.06	8.8	7.65	0.90	0.21	0.29	2.4
18-32	8.8	7.9	50	0.12	0.60	0.6	7	84	1.1	0.13	8.6	2.6	<0.06	12.5	11.39	1.82	0.44	0.23	3.5
32-45	8.9	8.2	15	0.14	0.57	0.6	10	81	1.6	0.16	6.6	2.7	<0.06	11.9	10.12	2.61	0.63	0.20	5.3
45-64	9.3	8.3	42	0.23	1.21	0.3	5	96	1.6	0.13	4.1	2.1	<0.06	11.6	6.95	4.84	1.24	0.20	10.7
64-105	9.7	8.4	37	0.34	0.94	0.1	4	130	1.8	14	5.1	4.9	0.19	11.1	4.79	4.88	2.92	0.30	26.3
105-190	9.8	8.4	21	0.45	1.56	0.1	3	190	2.2	0.08	5.0	1.1	<0.06	11.0	4.05	4.55	4.82	0.43	43.8
190-200	9.8	8.3	7	0.48	1.39	<0.1	2	210	2.2	0.13	4.3	0.83	<0.06	11.3	2.92	4.39	5.31	0.46	47.0

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

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.