

GRADATIONAL RED SANDY LOAM

General Description: *Sandy loam grading to a red sandy clay loam over well structured red clay, very highly calcareous from shallow depth, over medium textured sediments*

Landform: Very gently inclined to flat plains.

Substrate: Tertiary clayey sand mantled by fine carbonate.

Vegetation:



Type Site: Site No.: MO028
 1:50,000 sheet: 6727-4 (Monarto) Hundred: Monarto
 Annual rainfall: 360 mm Sampling date: 1976
 Landform: Very gently inclined (1%) plain
 Surface: Hard setting with no stones

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark reddish brown massive hard sandy loam. Sharp to:
10-15	Dark reddish brown hard sandy loam with moderate angular blocky structure. Clear to:
15-22	Dark reddish brown hard sandy clay loam with moderate angular blocky structure. Abrupt to:
22-35	Dark reddish brown hard sandy medium clay with moderate angular blocky structure. Sharp to:
35-39	As above, very highly calcareous with 10-20% carbonate segregations. Sharp to:
39-49	Brown and reddish yellow massive hard very highly calcareous sandy loam. Clear to:
49-95	Pale yellow, brown and olive very highly calcareous platy sandy clay loam. Diffuse to:
95-120	Strong brown and olive massive hard calcareous sandy loam. Clear to:
120-200	Strong brown, olive, brownish yellow and red calcareous clayey sand to sandy loam with 2-10% fine carbonate.



Classification: Sodic, Hypercalcic, Red Dermosol; medium, non-gravelly, loamy / clayey, moderate

Summary of Properties

Drainage: Moderately well drained. The soil rarely remains wet for more than a week following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately high, as indicated by the clay content and exchangeable cation data. Nitrogen and phosphorus deficiencies are usual, and the high pH may induce deficiencies of zinc, copper and manganese.

pH: Alkaline at the surface, strongly alkaline with depth.

Rooting depth: Not recorded. Estimate 50 cm in pit, with a few roots penetrating to 95 cm.

Barriers to root growth:

Physical: The hard clayey subsoil layers restrict root growth to some extent.

Chemical: High pH and clayey carbonate content in the deep subsoil restrict root growth.

Water holding capacity: Approximately 80 mm in the root zone.

Seedling emergence: Fair to satisfactory. Where organic matter levels are low and surfaces are likely to seal and set hard, establishment will be impaired.

Workability: Generally satisfactory, although poorly structured surfaces have limited periods of optimum moisture content for effective working

Erosion Potential

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	Coarse sand %	Fine sand %	Silt %	Clay %	pH H ₂ O	CO ₃ %	EC 1:5 dS/m	Cl mg/kg	CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Ca	Mg	Na	K	
0-10	35	40	8	16	8.4	0.2	0.07	<50	13	9.7	1.6	0.51	0.83	3.9
10-15	41	36	7	16	8.5	0.2	0.07	<50	12	9.8	1.2	0.32	0.54	2.7
15-22	43	26	1	26	8.5	0.2	0.07	<50	18	16.0	1.9	0.49	0.52	2.7
39-49	39	15	2	12	9.1	29	0.11	<50	13	12.7	2.1	0.71	0.38	5.5
95-120	55	33	2	8	9.7	2.4	0.17	150	8	5.0	3.6	1.2	0.33	15.0
180-200	14	62	4	10	9.8	6.8	0.44	490	7	2.9	4.0	2.2	0.30	31.4

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.