

GRADATIONAL RED LOAMY SAND

General Description: *Red brown loamy sand over a weakly structured red sandy clay, calcareous with depth grading to coarse or medium grained basement rock outwash*

Landform: Lower slopes of gently undulating rises.

Substrate: Coarse to medium grained and gravelly sediments derived from localized reworking of granitic basement rocks

Vegetation:



Type Site: Site No.: MO004

1:50,000 sheet:	6727-4 (Monarto)	Hundred:	Mobilong
Annual rainfall:	350 mm	Sampling date:	1976
Landform:	Lower slope of gentle rise, 3% slope		
Surface:	Soft with no stones		

Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown massive soft loamy sand with 2-10% gravel (2-6mm). Sharp to:
10-12	As above, reddish brown. Sharp to:
12-20	Dark red massive firm sandy light clay with quartz gravel (2-6 mm). Gradual to:
20-30	Dark red massive firm sandy light clay with quartz gravel (2-6 mm), and 10-20% fine carbonate. Gradual to:
30-40	Dark red and reddish yellow hard calcareous weakly structured light clay with 10-20% fine carbonate. Clear to:
40-50	Reddish yellow and dark red hard very highly calcareous light clay with moderate platy structure. Clear to:
50-110	Red, yellowish red and yellowish brown hard massive clayey sand with fine carbonate and 2-10% quartz gravel.
110-220	Brown, yellow and red massive firm calcareous sandy clay loam with variable quartz and schist gravel and fine carbonate segregations. Clear to:
220-260	Highly weathered schist with clay development in cleavages.



Classification: Sodic, Calcic, Red Chromosol; medium, slightly gravelly, sandy / 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 low as indicated by the exchangeable cation data. Nutrient retention capacity of the surface is poor due to low clay content, but subsoil clay provides adequate reserves of macro elements (calcium, magnesium and potassium). Nitrogen and phosphorus are invariably deficient.

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

Rooting depth: Not recorded. Estimate 50 cm in pit.

Barriers to root growth:

Physical: The clayey subsoil impedes root growth to some extent, and the massive to platy clayey sand substrate probably imposes a more pronounced restriction.

Chemical: High pH in the clayey sand substrate limits deeper root growth.

Water holding capacity: Approximately 70 mm in the root zone.

Seedling emergence: Satisfactory.

Workability: Soft sandy surface is easily worked

Erosion Potential

Water: Moderately low to moderate, depending on slope.

Wind: Moderately 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	39	47	1	11	8.0	nd	<0.06	<50	7	5.0	0.90	0.24	0.75	3.5
12-20	34	36	1	26	7.7	nd	<0.06	<50	13	8.4	3.0	0.34	0.85	2.6
30-40	24	18	2	50	8.7	nd	0.13	58	23	11.4	8.4	0.70	2.0	3.1
70-90	41	34	3	16	9.6	nd	0.17	<50	12	4.9	4.8	1.4	1.0	11.6
160-180	42	30	4	20	9.7	nd	0.34	54	13	3.3	4.8	4.0	0.99	30.6

Note: CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements. CEC is estimated at this site from the exchangeable cation data.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.