

SANDY LOAM OVER RED CLAY ON ROCK

General Description: *Medium thickness hard massive sandy loam overlying a well structured red clay, calcareous with depth, forming in weathering basement rock*

Landform: Gently undulating rises.

Substrate: Mica schists of the Kanmantoo Group.

Vegetation:



Type Site:	Site No.:	MO057	1:50,000 mapsheet:	6727-4 (Monarto)
	Hundred:	Monarto	Easting:	329790
	Section:	259	Northing:	6112180
	Sampling date:	09/03/2006	Annual rainfall:	400 mm average

Midslope of gentle rise, 2% slope. Hard setting surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-12	Dark reddish brown hard massive sandy loam. Abrupt to:
12-30	Dark red hard medium clay with strong medium angular blocky structure. Gradual to:
30-65	Reddish yellow firm massive very highly calcareous silty light clay with more than 50% fine carbonate segregations. Gradual to:
65-110	Olive brown, strong brown and pale yellow firm massive very highly calcareous silty clay loam with more than 50% fine carbonate segregations. Diffuse to:
110-130	Weathering micaceous schist.



Classification: Hypercalcic, Mesonatric, Red Sodosol; medium, non-gravelly, loamy / clayey, deep



Summary of Properties

- Drainage:** Well drained. The soil is unlikely to remain saturated for more than a day or so following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderate, as indicated by the exchangeable cation data. Levels of all tested elements (with the possible exception of copper) are adequate.
- pH:** Slightly acidic at the surface, strongly alkaline with depth.
- Rooting depth:** 65 cm in sampling pit, but few roots below 30 cm.
- Barriers to root growth:**
- Physical:** The hardness of the topsoil may impede optimal root development.
 - Chemical:** High pH and sodicity, and moderate salinity below 30 cm restrict deeper root growth.
- Waterholding capacity:** Approximately 60 mm in potential rootzone of annual plants.
- Seedling emergence:** The poorly structured surface soil is likely to seal, causing uneven emergence if soil dries after germination.
- Workability:** Hard massive surface soil is prone to puddling if worked too wet, and shattering if worked too dry.
- Erosion Potential:**
- Water:** Moderately low.
 - Wind:** Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-12	6.3	5.4	0	0.14	1.60	1.08	52	333	8.0	0.9	1.08	92	62.2	5.91	8.0	4.70	1.90	0.51	0.85	6.4
12-30	8.8	8.0	0	0.52	3.27	0.68	9	385	13	6.7	2.81	55	71.7	1.14	33.0	11.8	13.5	6.63	1.03	20.1
30-65	9.5	8.4	32	0.98	9.84	0.41	2	264	155	6.0	1.1	20	5.17	0.82	33.5	11.7	10.7	10.4	0.68	31.0
65-110	9.5	8.5	10	1.18	10.63	0.22	1	215	190	2.6	0.64	21	2.03	0.66	31.2	8.79	11.4	10.4	0.58	33.5
110-130	9.5	8.7	1	1.02	10.22	0.11	0	235	135	2.2	0.63	51	18.4	2.22	24.7	4.86	10.2	9.03	0.62	36.5

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), a measure of the soil's capacity to store and release major nutrient elements.
ESP (exchangeable sodium percentage) is derived by dividing the estimated exchangeable sodium value by the sum of cations.

Further information: [DEWNR Soil and Land Program](#)

