

CALCAREOUS SANDY CLAY LOAM

General Description: *Calcareous sandy loam to sandy clay loam becoming more clayey and calcareous with depth*

Landform: Alluvial flat.

Substrate: Clayey alluvium of the Coonambidgal Formation.

Vegetation: River box.



Type Site: Site No.: MR009
 Location: Renmark Irrigation District (Out of Hundreds)
 Sampling date: 22/10/1991
 1:50,000 mapsheet: 7029-4 (Renmark)
 Easting: 473800
 Northing: 6221500
 Annual rainfall: 260 mm average
 River flat, firm surface, no stones. Pistachio orchard.

Soil Description:

Depth (cm)	Description
0-7	Orange highly calcareous light sandy clay loam. Clear to:
7-22	Yellowish red very highly calcareous sandy clay loam. Clear to:
22-30	Yellowish red very highly calcareous sandy clay loam with minor fine carbonate. Clear to:
30-65	Yellowish red very highly calcareous light sandy clay with 10-20% fine carbonate. Gradual to:
65-98	Orange, grey and white mottled very highly calcareous light medium clay. Clear to:
98-127	Yellowish red and pale brown moderately calcareous medium clay. Clear to:
127-150	Yellowish red and pale brown medium clay with soft gypsum. Gradual to:
150-185	Grey and orange medium heavy clay with soft gypsum.



Classification: Epihypersodic, Regolithic, Hypercalcic Calcarosol; medium, non-gravelly, loamy/clayey, deep



Summary of Properties

Drainage: Moderately well drained. Soil is unlikely to remain saturated for more than week at a time following heavy or prolonged rainfall / irrigation.

Fertility: Inherent fertility is moderately high, as indicated by the exchangeable cation data. Phosphorus and nitrogen deficiencies are likely. Trace element deficiencies are unlikely in horticultural situations. Organic carbon is marginally low at sampling site.

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

Rooting depth: Not recorded.

Barriers to root growth:

Physical: There are no apparent physical barriers.

Chemical: High pH and sodicity from 30 cm restrict root growth. Moderate salinity in surface soil is caused by irrigation.

Waterholding capacity: Approximately 50 mm total, and 25 mm readily available water in main part of rootzone.

Seedling emergence: Good.

Workability: Firm surface is easily worked.

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	
0-7	8.9	8.4	5.0	0.69	5.5	0.79	20	674	4.3	3.8	4.0	12.4	1.4	13.5	7.8	4.7	2.18	1.70	16.2
7-22	9.0	8.4	6.3	0.75	6.5	0.48	9	299	5.1	3.6	3.5	9.1	0.8	13.5	6.2	4.4	3.02	0.70	22.4
22-30	9.2	8.4	13.4	0.66	6.1	0.08	<4	237	8.3	2.0	2.8	5.8	0.2	11.3	5.0	4.8	2.78	0.57	24.6
30-65	9.7	8.6	21.7	0.38	1.2	0.03	<4	313	10.8	1.2	1.7	3.1	0.1	9.8	4.1	4.9	3.56	0.76	36.3
65-98	9.7	8.7	11.6	0.39	0.6	<0.02	<4	455	14.8	0.9	3.0	3.0	0.1	13.3	4.1	6.2	4.47	1.07	33.6
98-127	9.8	8.8	3.1	0.45	0.8	<0.02	<4	484	15.0	0.8	3.3	3.0	0.1	14.9	3.7	6.7	5.80	1.16	38.9
127-150	8.8	8.0	<0.1	0.29	0.9	0.02	<4	503	22.0	0.7	3.3	4.3	0.2	15.5	2.9	6.3	6.76	1.16	43.6
150-185	8.3	7.6	<0.1	0.46	1.9	0.03	<4	458	24.1	0.4	3.7	0.2	0.1	18.5	3.2	6.2	8.02	1.02	43.4

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.

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

