

## SANDY CLAY LOAM OVER DISPERSIVE BROWN CLAY

**General Description:** *Sandy loam to sandy clay loam over a coarsely structured dispersive brown clay, calcareous with depth*

**Landform:** Flats in a very gently undulating landscape.

**Substrate:** Pleistocene age heavy clay (Blanchetown equivalent)

**Vegetation:** Mallee



**Type Site:** Site No.: MM033

1:50,000 sheet: 7027-4 (Karte)

Hundred: Bews

Annual rainfall: 345 mm

Sampling date: 26/11/91

Landform: Flat

Surface: Firm to hard setting with no stones

### Soil Description:

Depth (cm)	Description
0-9	Dark brown firm highly calcareous fine sandy clay loam with weak coarse granular structure. Sharp to:
9-20	Brown and light grey hard highly calcareous medium heavy clay with very coarse prismatic structure. Gradual to:
20-45	Yellowish red and light grey hard moderately calcareous medium heavy clay with coarse prismatic structure. Diffuse to:
45-75	Yellowish red and light grey hard moderately calcareous heavy clay with coarse prismatic structure. Diffuse to:
75-110	Yellowish red heavy clay with coarse angular blocky structure. Diffuse to:
110-150	Heavy clay (as above). Diffuse to:
150-190	Heavy clay (as above).



**Classification:** Calcic, Effervescent, Brown Sodosol; thin, non-gravelly, clay loamy / clayey, moderate

## Summary of Properties

**Drainage** Moderately well to imperfectly drained. Heavy or prolonged rain may result in water perching on the clay for several weeks.

**Fertility** Inherent fertility is high, as indicated by the exchangeable cation data. None of the measured nutrient elements was deficient at the sampling site, but regular phosphorus, nitrogen, zinc and copper applications are needed. Organic matter levels are marginal.

**pH** Alkaline at the surface, strongly alkaline with depth, grading to acidic in the substrate.

**Rooting depth** 45 cm in pit.

### Barriers to root growth

**Physical:** Hard, sodic subsoil prevents even root distribution patterns.

**Chemical:** High boron from 9 cm, and high pH, sodicity and salinity from 20 cm impede root growth.

**Water holding capacity** 70 mm in root zone.

**Seedling emergence:** Impaired by hard, sometimes dispersive surface soil.

**Workability:** Fair to poor due to hard setting surface - prone to puddling when worked too wet, and shattering when worked too dry.

### Erosion Potential

**Water:** Low.

**Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	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	8.3	7.8	6.1	0.25	0.9	1.2	36	570	4.3	0.5	4.3	3.4	0.74	14.0	14.0	4.0	0.27	1.5	1.9
0-9	8.6	7.9	3.6	0.27	1.7	1.3	59	590	7.3	0.62	6.4	7.0	0.82	14.1	12.2	4.0	1.2	1.4	8.5
9-20	9.2	8.5	8.1	0.93	5.3	0.32	5.6	510	36	1.4	14	1.0	0.12	27.5	8.3	10.6	6.1	1.5	22.2
20-45	9.3	8.7	1.6	1.7	8.6	0.19	3.7	650	66	1.2	14	0.66	0.10	28.2	3.6	12.5	10.1	1.9	35.8
45-75	8.7	8.1	1.1	1.6	10.0	0.14	1.0	680	69	1.1	10	0.13	0.09	29.5	1.7	11.6	12.4	1.8	42.0
75-110	5.7	5.8	0.6	2.1	11.5	0.21	2.3	590	21	1.3	31	0.11	0.15	29.8	0.97	11.9	12.9	1.7	43.3
110-150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150-190	4.9	4.8	0.05	2.3	13.3	0.20	1.0	650	21	1.5	52	0.10	0.22	28.6	0.43	12.7	15.6	1.9	54.5

**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.