

SANDY CLAY LOAM OVER SODIC BROWN CLAY

General Description: *Massive grey sandy clay loam to sandy loam, over a brown to yellow mottled coarsely structured clay, calcareous with depth*

Landform: Very gently undulating to level plains

Substrate: Tertiary age clay

Vegetation:



Type Site:	Site No.:	SE162B	1:50,000 mapsheet:	7124-4 (Goroke)
	Hundred:	State of Victoria	Easting:	500160
	Section:	-	Northing:	5940270
	Sampling date:	30/08/2007	Annual rainfall:	530 mm average

Flat plain. Hard setting surface (when dry and undisturbed) with no stones. Irrigated pasture.

Soil Description:

Depth (cm)	Description
0-9	Very dark brown soft sandy clay loam with weak coarse subangular structure. Clear to:
9-15	Light brownish grey and dark greyish brown soft massive light sandy clay loam. Abrupt to:
15-40	Yellowish brown, dark greyish brown and strong brown mottled firm light medium clay with moderate medium prismatic structure breaking to medium subangular blocky. Diffuse to:
40-70	Light yellowish brown firm light medium clay with weak very coarse prismatic structure, breaking to strong medium angular blocky, and 2-10% calcareous nodules. Gradual to:
70-110	Light yellowish brown and reddish yellow firm calcareous medium heavy clay with weak coarse prismatic structure, more than 50% soft carbonate segregations and minor ironstone nodules. Gradual to:
110-150	Pale brown, light grey and strong brown firm calcareous medium clay with 10-20% soft and nodular carbonate segregations and minor ironstone nodules.



Classification: Calcic, Mottled-Subnatric, Brown Sodosol; medium, non gravelly, clay loamy/clayey, very deep



Summary of Properties

Drainage:	Moderately well drained. Water can perch on top of the subsoil clay for a week or so following heavy or prolonged rainfall.
Fertility:	Inherent fertility is moderate, as indicated by the exchangeable cation data. Laboratory data indicate adequate levels of all tested nutrient elements with the possible exception of copper.
pH:	Neutral at the surface, alkaline in the subsoil, and strongly alkaline in deep subsoil.
Rooting depth:	70 cm in sampling pit, but few roots below 40 cm.
Barriers to root growth:	
Physical:	The subsoil clay layer imposes a moderate restriction on root growth, mainly by confining many roots to the faces of coarse aggregates.
Chemical:	High pH and moderately high salinity / chloride from 70 cm severely restrict root growth.
Waterholding capacity:	(Estimates for potential rootzone of irrigated crops) Total available: 65 mm Readily available: 30 mm
Seedling emergence:	Fair to satisfactory. Tendency to seal over can reduce establishment percentage.
Workability:	Fair. Surface tends to shatter if worked too dry, and puddle if worked too wet.
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	Cl mg/kg	Org.C %	NO ₃ + NH ₄ mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	React Fe mg/kg	Ext Al 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	
0-9	7.1	6.3	0	0.14	1.32	42	3.39	18	85	348	22.4	1401	0	1.4	0.73	418	19.5	4.04	15.2	9.75	4.27	0.36	0.78	2.4
9-15	7.1	6.3	0	0.06	1.08	17	0.87	-	16	95	6.6	825	-	-	-	-	-	-	3.3	2.44	0.70	0.12	0.09	3.6
15-40	8.0	6.9	0	0.16	1.49	78	0.59	-	4	187	27.4	877	-	-	-	-	-	-	17.2	7.17	8.09	1.50	0.45	8.7
40-70	9.2	8.1	0	0.46	3.07	322	0.23	-	2	205	67.2	475	-	-	-	-	-	-	17.9	5.30	9.21	2.95	0.47	16.5
70-110	9.5	8.8	0	0.86	4.41	772	0.1	-	2	315	126	410	-	-	-	-	-	-	-	-	-	-	-	-
110-150	9.7	8.8	1	0.75	3.57	493	0.08	-	1	211	78.5	343	-	-	-	-	-	-	-	-	-	-	-	-

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 exchangeable sodium value by the CEC, in this case estimated by the sum of cations.

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

