

SANDY CLAY LOAM OVER RED CLAY (Buckleboo soil)

General Description: *Firm to hard sandy loam to sandy clay loam over a red clay, calcareous with depth*

Landform: Gently undulating plain with moderate to low sandhills.

Substrate: Tertiary sandy clay to clay.

Vegetation: Mallee.



Type Site: Site No.: EC099

1:50,000 sheet:	6031-1 (Koongawa)	Hundred:	Cootra
Annual rainfall:	315 mm	Sampling date:	25/11/93
Landform:	Lower slope of gently undulating plain, 1% slope		
Surface:	Soft with no stones		

Soil Description:

Depth (cm)	Description
0-12	Dark reddish brown friable sandy clay loam with weak fine subangular blocky structure. Abrupt to:
12-40	Reddish brown firm medium clay with strong very coarse prismatic structure, breaking to fine subangular blocky. Abrupt to:
40-90	Rubbly Class III C carbonate. Gradual to:
90-140	Yellowish red friable very highly calcareous sandy clay loam with moderate fine subangular blocky structure. Gradual to:
140-170	Yellowish red friable very highly calcareous sandy clay with moderate fine subangular blocky structure.



Classification: Sodic, Lithocalcic, Red Chromosol; medium, non-gravelly, clay loamy / clayey, moderate

Summary of Properties

Drainage	Moderately well drained. Water perches on the clayey subsoil for up to a week following heavy or prolonged rainfall.
Fertility	Inherent fertility is moderate, as indicated by the exchangeable cation data. Surface clay content is sufficient to provide sufficient nutrient retention capacity. This could be enhanced by organic matter - organic carbon levels are marginally low. Phosphorus levels are low, but other elements appear to be well supplied. Nitrogen concentrations depend on legume content of pastures, and cropping history.
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	90 cm in pit.
Barriers to root growth	
Physical:	The clayey subsoil reduces root densities, but does not prevent root growth.
Chemical:	High pH and high sodicity from 90 cm limit deeper root growth.
Water holding capacity	Approximately 80 mm in the root zone.
Seedling emergence:	Satisfactory, except where surface soil is compacted.
Workability:	Soft to firm surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Moderately 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	SO ₄ -S 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	
0-12	7.8	7.4	1	0.09	0.53	0.92	16	590	-	1.8	0.39	4.7	6.7	0.66	11.4	8.12	1.35	0.05	1.21	0.4
12-40	8.5	7.8	2	0.11	0.31	0.36	3.8	340	-	1.7	0.72	5.6	2.9	0.24	13.9	11.01	2.47	0.12	0.88	0.9
40-90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90-140	9.8	8.3	30	0.28	0.88	0.08	3.8	460	-	6.5	0.64	2.5	0.79	0.35	7.7	2.02	4.13	1.93	0.98	25.1
140-170	10.0	8.4	9	0.33	0.72	0.07	4.0	490	-	11	0.54	1.8	0.72	0.37	7.8	1.62	3.14	2.50	1.05	32.1

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.