CALCAREOUS RUBBLY SANDY CLAY LOAM

General Description: Calcareous sandy loam to sandy clay loam, becoming more clayey with

depth, over a very highly calcareous light clay with abundant carbonate

rubble, decreasing with depth

Landform: Gently undulating alluvial

fans.

Substrate: Alluvial clay (Pooraka

Formation) mantled by windblown calcareous

deposits.

Vegetation:



Type Site: Site No.: CM106 1:50,000 mapsheet: 6529-4 (Wakefield)

Hundred:KulparaEasting:229500Section:116Northing:6233230

Sampling date: 15/02/2013 Annual rainfall: 430 mm average

Midslope of alluvial fan with slope of 2%. Firm surface with no stones.

Soil Description:

Depth (cm) Description

0-10 Dark reddish brown highly calcareous fine sandy

clay loam with weak granular structure. Gradual

to:

10-25 Dark reddish brown very highly calcareous clay

loam with weak polyhedral structure and 10-20%

calcareous nodules to 20 mm. Clear to:

25-65 Reddish yellow massive very highly calcareous

light clay with 10-20% calcareous nodules to 20mm, and 10-20% soft calcareous segregations.

Gradual to:

65-100 Reddish yellow massive very highly calcareous

light clay with 20-50% carbonate nodules to 20 mm, and 10-20% soft calcareous segregations.

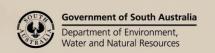
Gradual to:

100-130 Reddish yellow massive very highly calcareous

coarse sandy clay loam with 20-50% carbonate nodules to 20 mm, and 10-20% soft calcareous

segregations.

Classification: ?, Regolithic, Supracalcic, Calcarosol; medium, non-gravelly, clay loamy / clayey, deep





Summary of Properties

Drainage: Moderately well drained. No part of the profile is likely to remain wet for more than a

week following heavy or prolonged rainfall.

Fertility: Inherent fertility is high, as indicated by the exchangeable cation data (CEC exceeding

15 cmol(+)/kg means high nutrient retention capacity). There are no deficiencies at this site according to the laboratory data. Carbonate-induced fixation of phosphorus and trace

elements may be expected where surface carbonate levels exceed 8%.

pH: Alkaline throughout, strongly alkaline from 90 cm.

Rooting depth: Most root growth is in the upper 50 cm, with some roots persisting to 75 cm.

Barriers to root growth:

Physical: There are no apparent physical barriers.

Chemical: High sodicity, pH and boron concentrations restrict deeper root growth.

Waterholding capacity: Approximately 90 mm in potential rootzone.

Seedling emergence: Satisfactory – calcareous surface soils usually maintain friable consistence.

Workability: Calcareous surface soils can usually be worked over a range of moisture conditions.

Erosion Potential

Water: Slight due to slope, but surface soil is relatively stable.

Wind: Moderately low – calcareous soils can become powdery and susceptible to wind erosion

if over-grazed or worked too dry.

Laboratory Data

Depth cm	pH H ₂ O	pH CaC1 ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	mg/kg			mg/kg		Trace Elements mg/kg (DTPA)				Sum	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Mn	Zn	cmol (+)/kg	Ca	Mg	Na	K	
Paddock	8.6	7.6	13.5	0.190	1.8	2.00	18	29	699	5.5	1.8	0.98	5	12.7	1.89	28.4	23.8	2.41	0.26	1.89	0.9
0-10	8.3	7.6	12.7	0.193	1.8	2.44	16	73	1310	6.1	1.9	1.00	5	19.3	3.82	28.7	23.8	2.29	0.22	2.31	0.8
10-25	8.7	7.8	21.9	0.130	1.2	1.28	3	8	355	5.2	2.4	1.33	6	5.25	0.36	26.4	22.2	2.91	0.40	0.96	1.5
25-65	8.9	7.9	41.9	0.512	3.3	0.70	11	3	156	33.4	5.1	1.65	5	2.13	0.16	23.0	13.4	6.12	2.98	0.40	13.0
65-100	9.6	8.6	43.4	0.972	6.3	0.52	16	3	312	107	20.6	0.84	5	1.67	0.18	22.3	8.26	5.96	7.29	0.80	32.7
100-130	9.3	8.3	47.0	0.842	5.5	0.38	6	< 2	383	95.1	19.9	0.58	4	1.90	0.20	19.1	6.66	3.80	7.68	0.98	40.2

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

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: <u>DEWNR Soil and Land Program</u>

