RUBBLY CALCAREOUS SANDY LOAM
(Wiabuna soil – sandy loam)

General Description: *Calcareous sandy loam becoming more clayey and calcareous in the subsurface, with carbonate rubble at shallow depth*

Landform: Undulating rises.

Substrate: Clayey alluvium (Pooraka Formation), mantled by secondary carbonate

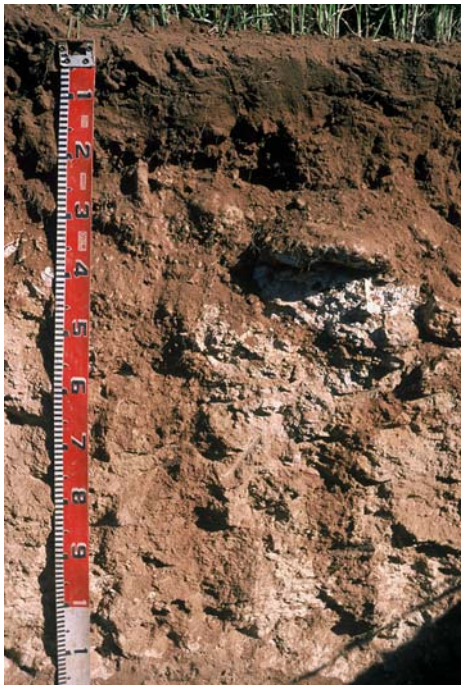
Vegetation:

Type Site: Site No.: EE209

1:50,000 sheet:	6130-1 (Rudall)	Hundred:	Yadnarie
Annual rainfall:	350 mm	Sampling date:	17/09/01
Landform:	Upper slope of undulating rise, 3% slope		
Surface:	Firm with minor quartz and calcrete stones (6-60 mm)		

Soil Description:

Depth (cm)	*Description*
0-10	Reddish brown friable massive slightly calcareous light sandy loam. Clear to:
10-23	Red friable moderately calcareous sandy clay loam with weak coarse subangular blocky structure. Abrupt to:
23-50	Moderately cemented nodular carbonate pan (20 - 200 mm nodules) with matrix of yellowish red friable massive very highly calcareous sandy clay loam. Gradual to:
50-75	More than 50% semi-hard carbonate in a matrix of reddish yellow firm massive very highly calcareous sandy loam. Diffuse to:
75-120	Pink friable massive very highly calcareous light clay.



Classification: Endohypersodic, Regolithic, Lithocalcic Calcarosol; medium, slightly gravelly, loamy / clay loamy, moderate

Summary of Properties

Drainage: Well drained. The soil is unlikely to remain wet for more than a couple days following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately high, as indicated by the exchangeable cation data. Concentrations of all tested elements are adequate, but high pH throughout indicates that deficiencies of zinc, manganese, copper and phosphorus can be induced. Organic carbon levels are in the expected range for this environment.

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

Rooting depth: 75 cm in pit, although there a few to 100 cm.

Barriers to root growth:

Physical: The semi-hard and rubbly carbonate layers present a slight limitation, but most roots will find a way through.

Chemical: High pH / sodicity from 75 cm restricts deeper root growth. Boron levels at this depth are also near toxic limits.

Water holding capacity: Approximately 65 mm in the potential root zone

Seedling emergence: Satisfactory.

Workability: Surface soil is readily worked over a range of moisture contents.

Erosion Potential

Water: Moderately low.

Wind: Moderately low. Surface breaks down to fine tilth (easily blown) if over-worked or over-grazed.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC 1:5 dS/m	Org.C %	NO_3 mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum of cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-10	8.6	8.0	nd	0.10	1.12	6	42	447	9.7	1.9	0.34	3.7	1.61	2.02	14.5	11.5	1.73	0.15	1.11	1.0
10-23	8.8	8.2	nd	0.11	0.57	3	7	358	15.3	1.6	0.41	6.0	0.18	0.77	19.3	13.9	4.10	0.29	0.90	1.5
23-50	9.0	8.4	nd	0.39	0.80	9	8	226	131	3.9	3.28	7.1	1.05	1.61	23.9	13.6	8.10	1.69	0.55	7.1
50-75	9.7	8.8	nd	0.51	0.41	16	4	302	45.8	8.4	1.06	4.1	0.09	0.59	20.2	7.17	7.90	4.37	0.78	21.6
75-120	10.1	9.2	nd	0.90	0.36	9	3	542	64.7	14.5	1.01	5.1	0.30	1.10	19.1	3.96	5.52	8.28	1.33	43.4

Note: Sum of cations in neutral to alkaline soils is an approximation of 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 sum of cations.