

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed005 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	G.M. Roberts	Locality:	Twynam Pastoral Co., Boolcarrol
Date Desc.:	09/10/85	Elevation:	198 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6677700 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	752800 Datum: AGD66	Drainage:	No Data

Geology

ExposureType:	Undisturbed soil core	Conf. Sub. is Parent. Mat.:	No Data
Geol. Ref.:	No Data	Substrate Material:	No Data

Land Form

Rel/Slope Class:	No Data	Pattern Type:	No Data
Morph. Type:	No Data	Relief:	No Data
Elem. Type:	Terrace plain	Slope Category:	Level
Slope:	0 %	Aspect:	No Data

Surface Soil Condition (dry): Surface crust, Recently cultivated

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Ug5.15
		Great Soil Group:	Brown clay

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11p	0 - 0.06 m	Dark greyish brown (10YR4/2-Moist); Dark greyish brown (10YR4/2-Dry); ; Medium clay; Moderate grade of structure, 2-5 mm, Subangular blocky; Weak grade of structure, <2 mm, Granular; Earthy fabric; Rough-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Sharp, Smooth change to -
A12	0.06 - 0.28 m	Brown (7.5YR4/2-Moist); ; Medium heavy clay; Moderate grade of structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Earthy fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
A13k	0.28 - 0.55 m	Brown (7.5YR4/2-Moist); , 10YR72, 0-2% , 5-15mm, Distinct; Medium heavy clay; Moderate grade of structure, 20-50 mm, Lenticular; Moderate grade of structure, 5-10 mm, Lenticular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
B21k	0.55 - 0.7 m	Brown (7.5YR4/2-Moist); , 10YR44, 10-20% , 5-15mm, Distinct; , 10YR72, 0-2% , 5-15mm, Distinct; Medium heavy clay; Moderate grade of structure, 20-50 mm, Angular blocky; Moderate grade of structure, 5-10 mm, Lenticular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Few (2 - 10 %), Ferruginous, Medium (2 -6 mm), Laminae; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 9 (pH meter); Common, fine (1-2mm) roots; Gradual, Smooth change to -
B22m	0.7 - 1.6 m	Reddish brown (5YR4/3-Moist); , 10YR31, 2-10% , 15-30mm, Distinct; , 10YR72, 0-2% , 5-15mm, Distinct; Medium clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 5-10 mm, Lenticular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Laminae; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 9 (pH meter);

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B23m 1.6 - 2.83 m Brown (7.5YR4/2-Moist); , 10YR31, 2-10% , 15-30mm, Distinct; , 10YR72, 2-10% , 15-30mm, Distinct; Light medium clay; Strong grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm²) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Common (10 - 20 %), Manganiferous, Coarse (6 - 20 mm), Laminae; Few (2 - 10 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.7 (pH meter);

Morphological Notes

A11p Very gradual changes down profile - most noticeable change at 28 - below plough layer. Then increase in manganese laminae at 160cm. (? B horizon starts at 6cm [sic]). Due to depth of self mulching.

Observation Notes

Parent Rock: alluvial sediment, mixed texture, with lime, parna on fourth fan

Site Notes

Surface cracks not visible, but according to the chart penetrometer measurements they should be there.

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na	Acidity		%
						Cmol	(+)/kg		
0 - 0.02	8.27A	0.08A	28.02B	15.02	2.07	2.34			
0 - 0.1	8.09A	0.122A	29.03B	15.88	1.3	2.59			
0.1 - 0.2	8.6A	0.114A	30.25B	15.5	0.93	3.64			
0.3 - 0.4	8.95A	0.184A	28.39B	15.18	0.75	5.66			
0.7 - 0.8	9.1A	0.401A	26.24B	15.59	0.63	10.45			
1.2 - 1.3	8.77A	0.8419999A	25.16B	15.36	0.77	12.31			
2.5 - 2.6	8.87A	0.928A	22.81B	15.34	0.78	10.19			

Depth m	CaCO ₃	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
	%	%	mg/kg	%	%	%	Mg/m³	GV	CS	FS %	Silt Clay
0 - 0.02	<0.1B	0.68C									16.4 62.5
0 - 0.1	<0.1B	0.62C	29.1J								16.4 59.1
0.1 - 0.2	<0.1B	0.51C	16.5J								15.9 60.3
0.3 - 0.4	<0.1B	0.49C	15.1J								16.1 61.6
0.7 - 0.8	0.7B	0.33C	24.4J								15.9 62.6
1.2 - 1.3	0.3B	0.22C	20.6J								16.8 64.6
2.5 - 2.6	0.9B	0.08C	11.2J								15.3 61.5

[illegible]

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Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_K	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_MG	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_NA	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
19B1	Carbonates - manometric
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A2	Chloride - 1:5 soil/water extract, automated colour
6B3	Total organic carbon - high frequency induction furnace, infrared
7B1	Water soluble nitrate - automated colour
9B1	Bicarbonate-extractable phosphorus - manual colour
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method