

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed036 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	G.M. Roberts	Locality:	Twynam Pastoral Co., Boolcarrol
Date Desc.:	08/10/85	Elevation:	189 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6673100 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	741700 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): Self-mulching, Recently cultivated

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Ug5.14
		Great Soil Group:	Grey clay

Site Disturbance:

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Dark grey (10YR4/1-Moist); Dark greyish brown (10YR4/2-Dry); ; Medium heavy clay; Moderate grade of structure, 10-20 mm, Angular blocky; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Field pH 6.5 (pH meter); Common, fine (1-2mm) roots;
A12	0.1 - 0.28 m	Dark grey (10YR4/1-Moist); , 10YR83, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 10-20 mm, Angular blocky; Earthy fabric; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 2-10%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 7.5 (pH meter); Few, fine (1-2mm) roots; Gradual, Smooth change to -
2A11	0.28 - 0.58 m	Dark grey (10YR4/1-Moist); , 10YR52, 2-10% , 5-15mm, Distinct; Medium clay; Moderate grade of structure, 50-100 mm, Prismatic; Moderate grade of structure, 20-50 mm, Angular blocky; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; 2-10%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
2A12	0.58 - 1 m	Dark grey (10YR4/1-Moist); , 10YR63, 10-20% , 15-30mm, Distinct; , 10YR83, 0-2% , 5-15mm, Faint; Medium clay; Weak grade of structure, 100-200 mm, Prismatic; Weak grade of structure, 5-10 mm, Angular blocky; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
2A13	1 - 1.45 m	Dark grey (10YR4/1-Moist); , 10YR63, 10-20% , 15-30mm, Distinct; , 10YR83, 0-2% , 5-15mm, Faint; Medium clay; Weak grade of structure, 100-200 mm, Prismatic; Weak grade of structure, 5-10 mm, Angular blocky; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;

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2B11k 1.45 - 2.84 m Brown (7.5YR5/2-Moist); , 10YR42, 2-10% , 5-15mm, Faint; , 10YR83, 0-2% , 5-15mm, Faint; Medium clay; Weak grade of structure, 100-200 mm, Angular blocky; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm²) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; Few (2 - 10 %), Manganiferous, Fine (0 - 2 mm), Soft segregations; Field pH 9 (pH meter); Gradual, Smooth change to -

Morphological Notes

A11 Tight degraded "Llano" type soil with fine ferruginous quartz gravels; increase of sand grains on ped faces below 30cm. An increase in size abundance of calcium carbonate below 130cm.

Observation Notes

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

Site Notes

Paddock not cultivated before 1982 (see aerial photo, run 1 no. 4133). The surface cracks are not visible due to recent cultivation, but a lot of little "surface" cracks are visible after the top 5cm has been removed (see photo).

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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	8.33A	0.24A	29.26B	9.969999	1.99	0.98			
0 - 0.1	7.8A	0.146A	20.8B	8.59	1.28	1.14			
0.1 - 0.2	8.36A	0.079A	20.42B	9.4	0.73	1.47			
0.3 - 0.4	9.09A	0.093A	17.42B	8.61	0.64	2.13			
0.7 - 0.8	9.73A	0.274A	9.74B	9.13	0.75	5			
1.2 - 1.3	9.77A	0.368A	7.96B	10.68	0.87	6.6			
2.5 - 2.6	9.16A	0.423A	11.09B	13.57	1.01	9.23			

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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