Project Name: Soil Studies in the Lower Namoi Valley

Project Code: EDGEROI Site ID: ed111 Observation ID: 1

Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: W.T. Ward Locality: B.M.(Bruce) Foster, Wengellabah

Date Desc.: Elevation: 202 metres 11/12/86 Map Ref.: Sheet No.: 8837 N 1:50000 Rainfall: No Data Northing/Long.: 6663200 AMG zone: 55 Runoff: No Data 755300 Datum: AGD66 Easting/Lat.: 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 DataPattern Type:No DataMorph. Type:No DataRelief:No Data

Elem. Type: Levee Slope Category: Very gently sloped Slope: 1 % Aspect: 360 degrees

Surface Soil Condition (dry): Self-mulching, Trampled

Erosion:

Soil Classification

Australian Soil Classification:Mapping Unit:N/AN/APrincipal Profile Form:Ug5.24ASC Confidence:Great Soil Group:Grey clay

Confidence level not specified

Site Disturbance: Complete clearing. Pasture, native or improved, cultivated at some stage

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11 0 - 0.1 m Dark greyish brown (10YR4/2-Moist); Dark greyish brown (10YR4/2-Dry); , 10YR63, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 2-5 mm, Platy; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH

7.5 (pH meter); Few, very fine (0-1mm) roots;

A12 0.1 - 0.25 m Brown (7.5YR4/2-Moist); , 10YR83, 0-2% , 0-5mm, Distinct; Medium heavy clay; Weak grade of

structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8 (pH meter); Few, very fine (0-

1mm) roots;

A13 0.25 - 0.5 m Brown (7.5YR4/2-Moist); , 10YR83, 0-2% , 0-5mm, Distinct; Medium clay; Moderate grade of

structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.5 (pH meter); Few, very

fine (0-1mm) roots; Diffuse, Smooth change to -

A14 0.5 - 1 m Brown (7.5YR4/2-Moist); , 10YR83, 0-2% , 0-5mm, Distinct; Heavy clay; Moderate grade of

structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-

1mm) roots;

A15 1 - 1.6 m Brown (7.5YR4/2-Moist); , 10YR83, 0-2% , 0-5mm, Distinct; , 7.5YR32, 2-10% , 5-15mm,

Distinct; Heavy clay; Weak grade of structure, 20-50 mm, Prismatic; Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm)

roots; Diffuse, Smooth change to -

B2 1.6 - 2.71 m Dark reddish grey (5YR4/2-Moist); , 7.5YR32, 2-10% , 15-30mm, Prominent; , 7.5YR64, 0-2% ,

5-15mm, Distinct; Medium clay; Moderate grade of structure, 20-50 mm, Lenticular; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 9 (pH

meter):

Morphological Notes

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A11 The platy structure in the top 5cm represents a recent flood episode. The soil beneath

appears to be reasonably developed; certainly below 50cm. 0-5 is recent flood; 5-50 is

possibly recent flood material. ? Alluvial soil on grey clay. Gend

A12 epth Hordesig D.,S.,O., not entered at time of description but taken from photo plus

accurate human memory recall. Classed as A1a by analogy with Noelurma.

Observation Notes

Parent Rock: alluvial sediment, clay, floodplain

Site Notes

Weak surface crust, heavily trampled. A dense hardpan at 5-8cm under a self mulching top. Profile development suggests middle terrace but reddish brown; this colour might be due to better drainage near donga.

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Project Name: Project Code: Agency Name:

Laboratory Test Results:

Depth	рН	1:5 EC		hangeable			Exchangeable	CEC		ECEC	ESP
m		dS/m	Ca Mg		K Na A Cmol (+)/kg		Acidity)/kg				%
0 - 0.02	7.11A	0.297A	24.88B	7.9	1.7	1.49					
0 - 0.1	7.94A	0.104A	22.86B	8.98	1.52	1.35					
0.1 - 0.2	8.64A	0.101A	24.5B	10.51	0.9	2.23					
0.3 - 0.4	9.04A	0.142A	23.41B	11.14	0.8	4.25					
0.7 - 0.8	8.8A	0.579A	22.58B	11.92	0.88	8.26					
1.2 - 1.3	8.54A	0.652A	22.99B	12.62	1.25	8.19000					
						1					
2.5 - 2.6	8.84A	0.697A	23.24B	12.67	1.13	8.19000					
						1					
Depth	CaCO3	Organic	Avail.	Total	Tota	ıl Total	Bulk	D.	rtiala	Ci-o	Analysis
Берш	Cacos	C	Avaii. P	P	N	ii iotai K	Density	GV	CS	FS	Silt Clay
m	%	%	mg/kg	%	%	%	Mg/m3	٥,	00	%	Ont Olay
0 - 0.02	<0.1B	0.92C									21.5 48.7
0 - 0.1	<0.1B	0.9C	24.2J								21.3 51.6
0.1 - 0.2	<0.1B	0.64C	10.9J								22.2 55
0.3 - 0.4	0.3B	0.58C	12.7J								23.5 53.8
0.7 - 0.8	0.5B	0.39C	17.7J								24 58.7
1.2 - 1.3	0.4B	0.21C	16.7J								21.3 62.6
2.5 - 2.6	2.3B	0.21C	15.5J								21.4 61.8
Depth	COLE		Gravimetric/Vol					_	Κs	at	K unsat
m		Sat.	0.05 Bar	0.1 Bar g/	0.5 Bar g - m3/ı		5 Bar 15	Bar	mm	/h	mm/h

0 - 0.02 0 - 0.1 0.1 - 0.2

0.1 - 0.2 0.3 - 0.4 0.7 - 0.8 1.2 - 1.3 2.5 - 2.6

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Laboratory Analyses Completed for this profile

15A2_CA Exchangeable bases (Ca2+,Mg2+,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 Silt (%) - Coventry and Fett pipette method