

structure, breaking to moderate 10–20mm angular blocky structure; moderately strong; moderate slickensides, smooth fracture; smooth–ped fabric; <2% distinct medium white (10YR8/1) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 2–6mm rounded tabular quartz fragments; pH 8.8; genetic boundary, very diffuse, smooth change to

B ₂	80–131	(5; 120–130) Brown (10YR4/3) medium heavy clay; 20–50% prominent coarse dark grey (10YR4/1) patches of soil, filling cracks; 2–10% prominent fine light yellowish brown (10YR6/4) patches of sediment, filling cracks; moderate 20–50mm prismatic structure, breaking to moderate 20–50mm angular blocky structure; moderately strong; moderate slickensides, smooth–ped and polished ped fabric; <2% fine calcareous nodules; <2% <5mm cracks; 2–5% 0.075–1mm pores; common very fine roots; <2% 2–6mm rounded quartz fragments; pH 8.5; genetic boundary, diffuse, tongued change to
B ₂	131+	(6; 250–260) Light brownish grey (10YR6/2) medium clay; 10–20% distinct coarse dark grey (10YR4/1) patches of soil, filling cracks; <2% distinct fine reddish yellow (7.5YR6/6) mottles; moderate 50–100mm prismatic structure, breaking to strong 5–10mm angular blocky structure; moderately weak; moderate slickensides, polished ped fabric; 2–10% coarse calcareous nodules; <2% medium manganese stains; 2–5% <5mm cracks; <2% 1–2mm pores; pH 8.7;

Comments

No phosphate value was reported for ed18306. The value shown was selected by MEP.
Field pH for sample 6 estimated from lab pH.

Soil classification

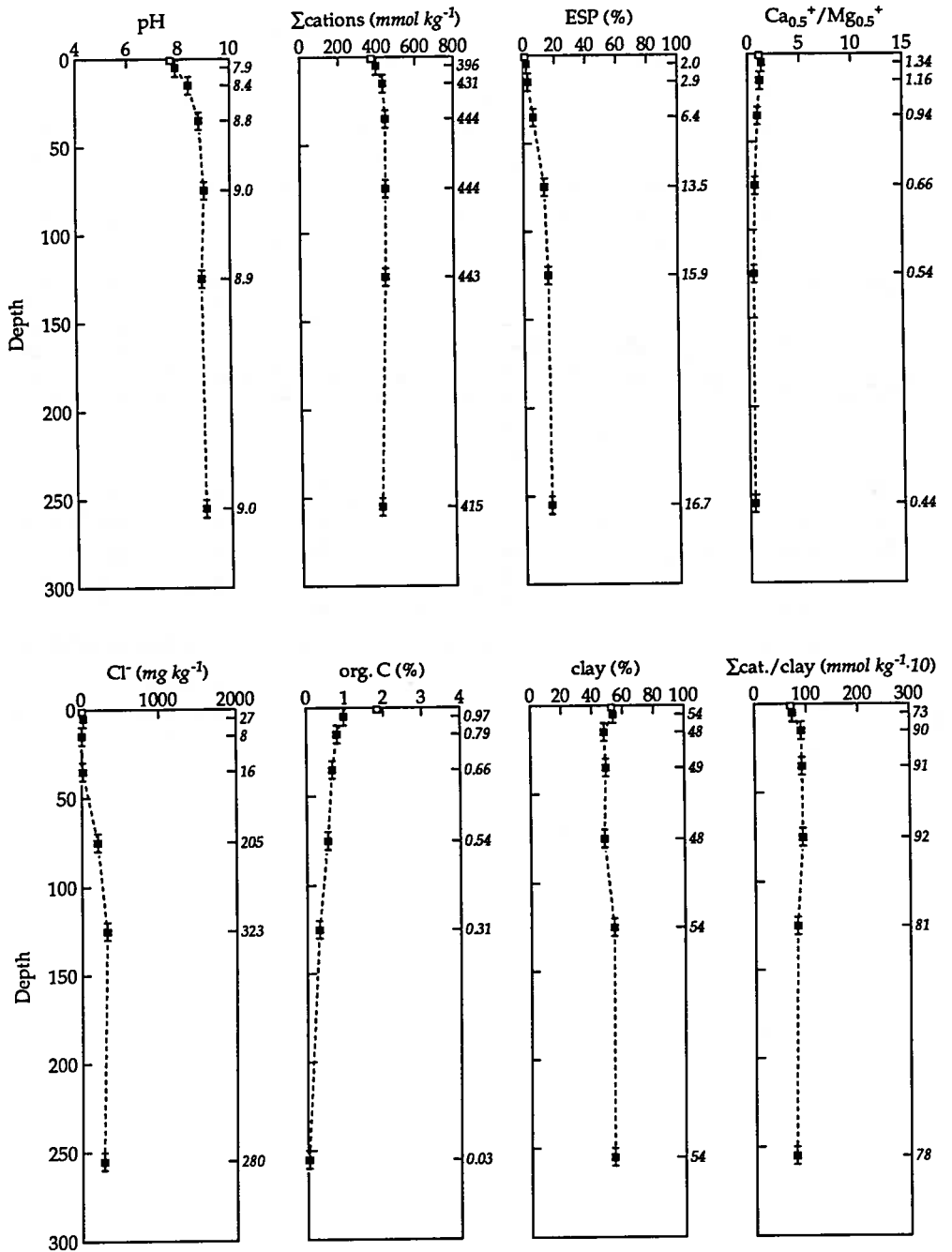
Principal profile form: Ug5.15
Great soil group: Grey clays

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. $mS\ m^{-1}$	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁	0-2	7.7	12.4	1.84	<0.1	29	15	53
1	A ₁	0-10	7.9	13.7	0.97	0.1	28	16	54
2	A ₁	10-20	8.4	8.4	0.79	<0.1	33	18	48
3	A ₁	30-40	8.8	14.2	0.66	0.2	32	18	49
4	A ₁	70-80	9.0	34.9	0.54	0.9	28	22	48
5	B ₂ 1	120-130	8.9	53.4	0.31	0.8	18	26	54
6	B ₂ 2	250-260	9.0	51.9	0.03	3.8	26	16	54

Cl ⁻ $mg\ kg^{-1}$	NO ₃ ⁻ -N $mg\ kg^{-1}$	P $mg\ kg^{-1}$	Ca _{0.5} ⁺ $mmol\ kg^{-1}$	Mg _{0.5} ⁺ $mmol\ kg^{-1}$	K ⁺ $mmol\ kg^{-1}$	Na ⁺ $mmol\ kg^{-1}$	Al _{0.33} ⁺ $mmol\ kg^{-1}$	Σcations $mmol\ kg^{-1}$	ESP %
13	-	-	178	161	28.2	3.6	<1	371	1.0
27	6.9	2	212	158	17.4	7.9	<1	396	2.0
8	3.0	<1	219	189	10.7	12.6	<1	431	2.9
16	1.1	2	198	210	8.1	28.4	<1	444	6.4
205	0.6	11	148	226	9.9	60.0	<1	444	13.5
323	0.6	2	127	234	12.0	70.2	<1	443	15.9
280	5.9	2	103	235	8.5	69.3	<1	415	16.7

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed184

Site location

Grid reference: 763400mE 6653600mN
 Farmer: Peter Miller
 Site described by D. McGarry on 28 May, 1985
 The site is located at a grid point

Elevation: 215m
 Farm name: Noelurma

Site description

Slope: 0°
 Landform: middle terrace
 Surface dry when sampled
 Coarse self-mulching surface, cultivated
 Use: wheat, fallow
 Visible cracks: width 1mm

Topography: gently undulating

Site comments

Rough cultivated surface, so no handpen or sheervane. Surface has a brown appearance. Wheat planted into cultivated stubble.

Site vegetation

The site was under wheat.

Profile description

Soil described by K. J. Smith on 23 June, 1986. Drilled depth 274cm

Horizon (cm)	(Sample; depth)
A _{1p} 0-8	(1; 0-8) Dark brown (7.5YR3/2, 7.5YR3/2 dry) light clay; <2% distinct fine light grey (10YR7/2) bleached surface crust; weak 5-10mm subangular blocky structure, with moderate 2-5mm granular structure; moderately weak; earthy fabric; 2-5% <5mm cracks; <2% 0.075-1mm pores; common very fine roots; pH 6.8; plough sole, abrupt, wavy change to
A ₁ 8-200	(2; 10-20) Dark brown (10YR3/3) medium clay; weak 20-50mm angular blocky structure; very firm; nodular fracture; earthy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 7.8;
A ₁	(3; 30-40) Dark brown (7.5YR3/2) medium heavy clay; weak 20-50mm angular blocky structure; moderately firm; granular fracture; earthy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 9.0;
A ₁	(4; 70-80) Dark brown (7.5YR3/2) medium heavy clay; 2-10% distinct fine brown

		(10YR4/3) rinds on soil aggregates; weak 20–50mm angular blocky structure; very firm; granular fracture; earthy fabric; <2% faint fine white (10YR8/1) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 9.0;
A ₁		(5; 120–130) Dark brown (7.5YR3/2) medium heavy clay; <2% faint fine brown (10YR5/3) flecks produced by faunal mixing; moderate 20–50mm angular blocky structure; very firm; earthy fabric; <2% distinct fine white (10YR8/1) calcareous nodules; <2% fine calcareous soft segregations; <2% <5mm cracks; <2% 1–2mm pores; pH 9.0; genetic boundary, very diffuse, smooth change to
B ₂	200+	(6; 250–260) Dark brown (10YR3/3) light medium clay; 2–10% distinct fine dark grey (10YR4/1) organic stains; moderate 20–50mm prismatic structure, breaking to moderate 20–50mm angular blocky structure; very strong; weak slickensides, smooth–ped and polished ped fabric; <2% distinct fine light brownish grey (10YR6/2) calcareous nodules; <2% <5mm cracks; <2% 1–2mm pores; pH 9.0;

Parent rock: alluvial sediment, mixed texture, with lime

Comments

One fragment of 0–8 shows sand skin ?surface crust. Lime nodules start at 60cm. 70–80 has brownish tint coating aggregates. Carbonate at 150 has coat of manganese. At 110 is inwashed sand in worm burrow. Note depth of A horizon over B. Topsoil is brownish to 50cm and then is grey, suggesting possibility of burial.

Soil classification

Principal profile form: Ug5.15

Great soil group: Grey clays

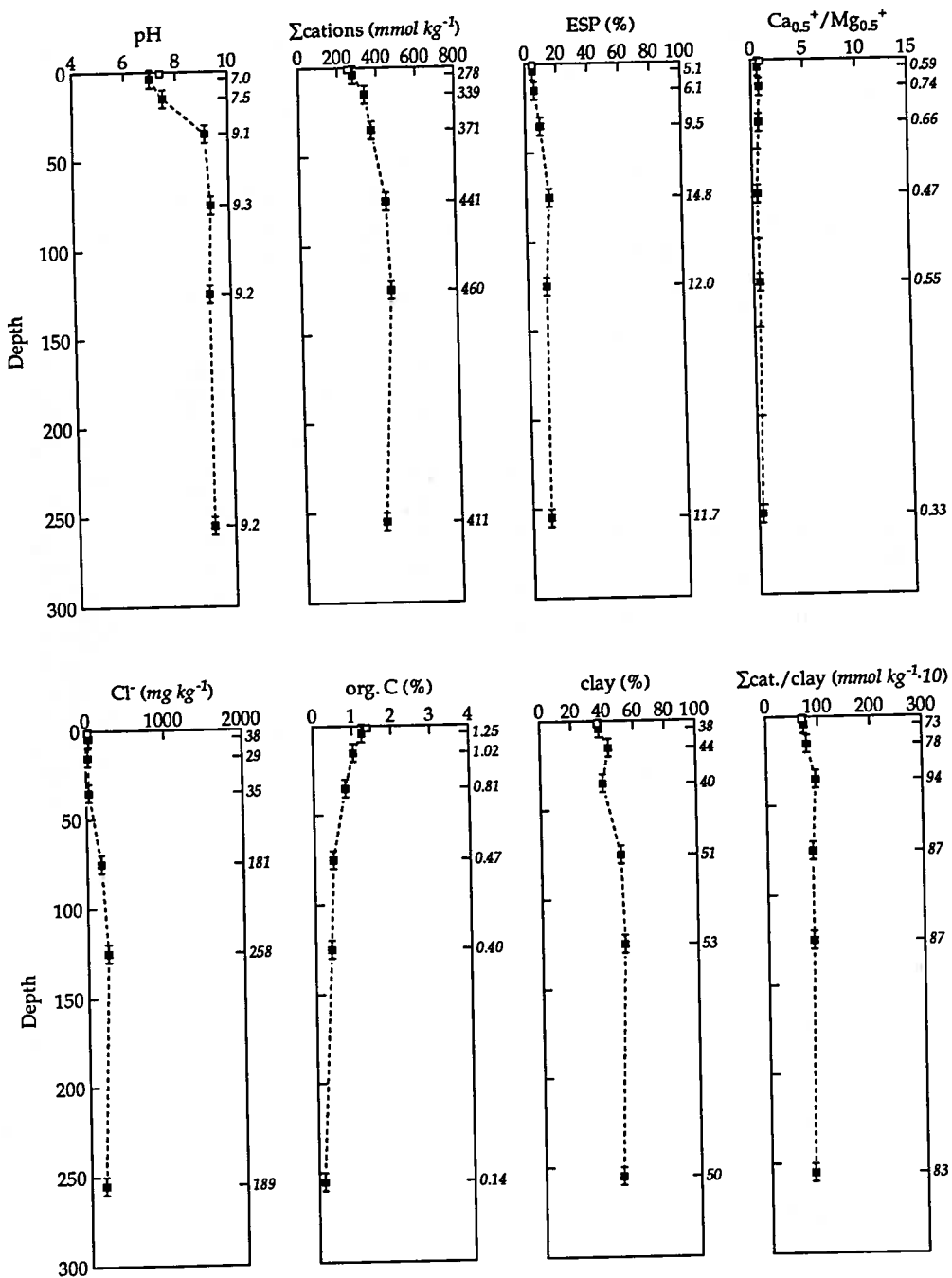
Soil taxonomy unit: Pellusterts

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. $mS m^{-1}$	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ p	0-2	7.4	8.7	1.39	<0.1	40	21	37
1	A ₁ p	0-8	7.0	12.9	1.25	<0.1	39	20	38
2	A ₁ 1	10-20	7.5	10.0	1.02	<0.1	36	18	44
3	A ₁ 2	30-40	9.1	23.5	0.81	0.7	39	20	40
4	A ₁ 3	70-80	9.3	34.9	0.47	2.4	26	20	51
5	A ₁ 4	120-130	9.2	38.7	0.40	3.5	23	20	53
6	B ₂	250-260	9.2	33.5	0.14	1.1	28	21	50

Cl ⁻ $mg kg^{-1}$	NO ₃ ⁻ -N $mg kg^{-1}$	P $mg kg^{-1}$	Ca _{0.5} ⁺ $mmol kg^{-1}$	Mg _{0.5} ⁺ $mmol kg^{-1}$	K ⁺ $mmol kg^{-1}$	Na ⁺ $mmol kg^{-1}$	Al _{0.33} ⁺ $mmol kg^{-1}$	Σcations $mmol kg^{-1}$	ESP %
28	-	-	105	124	12.9	12.4	<1	254	4.9
38	14.4	34	93	158	13.6	14.1	<1	278	5.1
29	2.9	11	132	179	8.4	20.7	<1	339	6.1
35	4.4	3	132	199	4.0	35.2	<1	371	9.5
181	0.9	18	118	251	6.0	65.0	<1	441	14.8
258	2.0	10	140	257	7.8	55.1	<1	460	12.0
189	3.9	5	89	266	7.7	48.2	<1	411	11.7

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed185

Site location

Grid reference: 766000mE 6653500mN
 Farmer: J.R. Armitage
 Site described by D. McGarry on 28 April, 1986
 The site is located at a grid point

Elevation: 226m
 Farm name: Gruie

Site description

Slope: 0°
 Landform: middle terrace
 Surface dry when sampled
 Hard-setting surface, virgin state
 Use: native pasture
 Visible cracks: width 1mm

Topography: gently sloping

Site comments

Red soil ridge 1km north, running east-west. Very wide discontinuous cracks. Crusting surface. Heavily grazed and dry site with Noogoora burr, thistles and dock.

Site vegetation

The following species were noted:

Xanthium occidentale.

Profile description

Soil described by W. T. Ward on 3 February, 1986. Drilled depth 275cm

Horizon (cm)	(Sample; depth)
A ₁ 0-65	(1; 0-10) Dark brown (7.5YR3/2, 7.5YR3/2 dry) light clay; <2% distinct fine brown (10YR5/3) bleached surface crust; moderate 10-20mm platy structure; moderately strong; earthy fabric; <2% <5mm cracks; few very fine roots; pH 8.0;
A ₁	(2; 10-20) Dark brown (7.5YR3/2) medium heavy clay; apedal massive; moderately strong; smooth fracture; earthy fabric; <2% faint fine very pale brown (10YR7/4) calcareous nodules; few very fine roots; pH 8.5;
A ₁	(3; 30-40) Dark brown (7.5YR3/2) medium heavy clay; <2% distinct fine dark brown (7.5YR4/4) patches of sediment, filling cracks; weak 50-100mm angular blocky structure; moderately strong; rough fracture; earthy fabric; <2% distinct fine very pale brown (10YR8/4) calcareous nodules; <2% <5mm cracks; pH 8.0; genetic boundary, gradual, smooth change to

B ₂	65-105	(4; 70-80) Dark brown (7.5YR3/2) medium clay; weak 20-50mm angular blocky structure; moderately strong; nodular fracture; earthy fabric; <2% faint fine very pale brown (10YR8/4) calcareous nodules; <2% <5mm cracks; few very fine roots; pH 9.0; stratigraphic boundary, abrupt, smooth change to
2B ₂	105-200	(5; 120-130) Light yellowish brown (10YR6/4) medium clay; 2-10% faint medium dark brown (7.5YR3/2) organic stains; moderate 20-50mm prismatic structure, with weak 20-50mm wedge structure; moderately strong; weak slickensides, nodular fracture; smooth-ped and earthy fabric; <2% distinct fine very pale brown (10YR8/4) calcareous soft segregations; <2% fine manganese stains; <2% <5mm cracks; <2% 2-5mm pores; few very fine roots; pH 8.8; genetic boundary, very diffuse, smooth change to
2B ₂	200+	(6; 250-260) Dark reddish brown (5YR3/3) medium clay; 2-10% faint medium dark brown (7.5YR3/2) organic stains; moderate 20-50mm wedge structure, with moderate 2-5mm cast granular structure; moderately strong; moderate slickensides, smooth-ped and earthy fabric; <2% distinct fine brown (10YR5/3) calcareous nodules; <2% fine manganese stains; <2% <5mm cracks; pH 8.8;

Comments

Lime occurs generally as sand size nodules (very small). Patches of sand in small pockets start at about 50cm. Weathered depositional banding at 105 indicate buried soil below. I think this is a relatively young sandy wash (to 105cm) over a prior soil like that seen in gravel pit near Spring Creek, Wee Waa road.

Soil classification

Principal profile form: Ug6.1

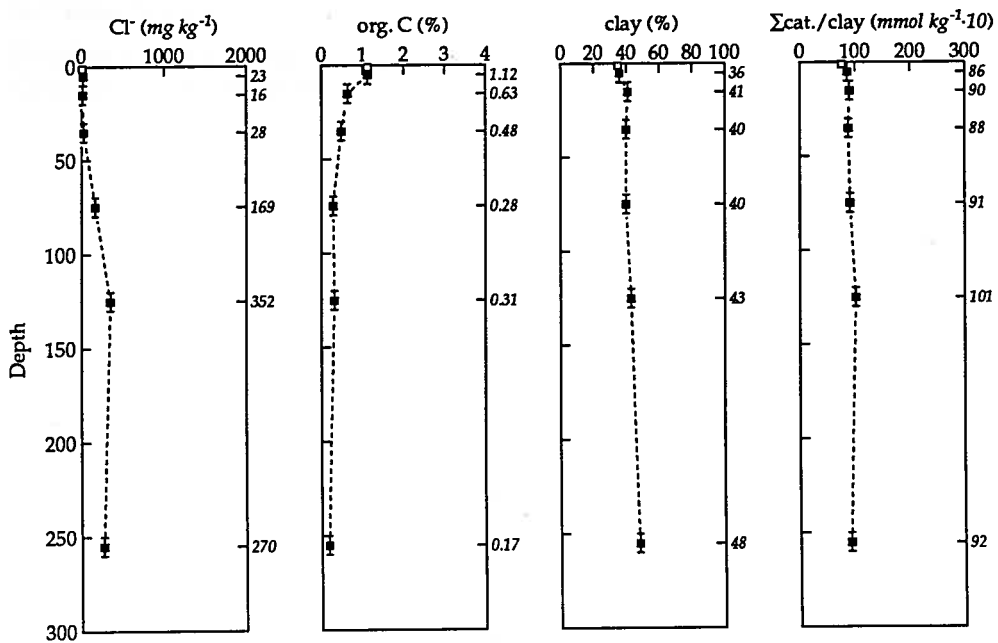
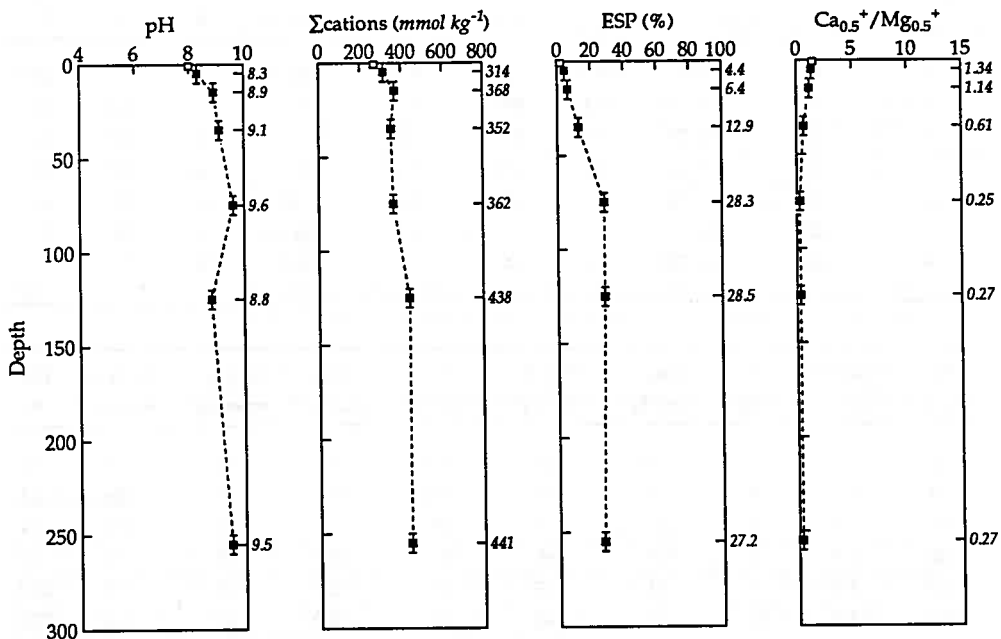
Great soil group: Grey clays

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. mS m ⁻¹	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ 1	0-2	8.0	7.4	1.12	0.1	47	16	35
1	A ₁ 1	0-10	8.3	10.5	1.12	<0.1	48	14	36
2	A ₁ 2	10-20	8.9	20.3	0.63	0.6	41	17	41
3	A ₁ 3	30-40	9.1	21.5	0.48	3.7	38	18	40
4	B ₂	70-80	9.6	70.6	0.28	0.7	44	15	40
5	2B ₂	120-130	8.8	96.0	0.31	<0.1	31	25	43
6	2B ₂	250-260	9.5	74.0	0.17	1.0	31	20	48

Cl ⁻ mg kg ⁻¹	NO ₃ ⁻ -N mg kg ⁻¹	P mg kg ⁻¹	Ca _{0.5} ⁺ mmol kg ⁻¹	Mg _{0.5} ⁺ mmol kg ⁻¹	K ⁺ mmol kg ⁻¹	Na ⁺ mmol kg ⁻¹	Al _{0.33} ⁺ mmol kg ⁻¹	Σcations mmol kg ⁻¹	ESP %
12	-	-	148	101	15.3	5.1	<1	270	1.9
23	3.7	9	164	123	12.8	13.8	<1	314	4.4
16	3.4	1	180	158	6.4	23.5	<1	368	6.4
28	1.7	1	115	186	5.4	45.3	<1	352	12.9
169	2.9	9	51	203	6.5	102.7	<1	362	28.3
352	16.2	12	66	240	7.6	124.9	<1	438	28.5
270	1.7	9	67	247	7.0	120.0	<1	441	27.2

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed186

Site location

Grid reference: 768800mE 6653400mN
 Farmer: W.F. Buchanan
 Site described by D. McGarry on 18 April, 1985
 The site is located at a grid point

Elevation: 229m
 Farm name: Killarney

Site description

Slope: 0°
 Landform: middle terrace
 Surface wet when sampled
 Coarse self-mulching surface, virgin state
 Use: native pasture, wheat
 Visible cracks: width 1mm

Topography: flat

Site comments

Spring Creek is 300m E in a 1m deep channel which shows 5cm brown alluvial clay over prior black cracking clay.

Site vegetation

The following species were noted:

Stipa ?setacea, *Brassica tournefortii*, *Bassia quinquecuspis*.

Profile description

Soil described by K. J. Smith on 2 June, 1986. Drilled depth 341cm

Horizon (cm)	(Sample; depth)
A ₁ 0-5	(1; 0-5) Very dark greyish brown (10YR3/2, 10YR3/1 dry) medium heavy clay; weak 20-50mm subangular blocky structure, with moderate 2-5mm granular structure; moderately firm; rough-ped fabric; 2-5% <5mm cracks; common very fine roots; pH 7.0; genetic boundary, abrupt, wavy change to
A ₁ 5-105	(2; 5-10) Very dark greyish brown (10YR3/2, 10YR3/2 dry) medium heavy clay; strong 10-20mm subangular blocky structure, with moderate 5-10mm platy structure; moderately strong; smooth-ped fabric; 5-10% <5mm cracks; <2% 0.075-1mm pores; common very fine roots; pH 7.5;
A ₁	(3; 10-20) Dark grey (10YR4/1, 10YR3/1 dry) light medium clay; <2% distinct fine dark brown (10YR3/3) patches of sediment, filling cracks; moderate 20-50mm angular blocky structure; moderately strong; smooth-ped fabric; 2-5% <5mm

cracks; common very fine roots; pH 8.3;

- A₁ (4; 30–40) Very dark grey (10YR3/1, 10YR3/1 dry) heavy clay; <2% distinct fine dark brown (10YR3/3) patches of sediment, filling cracks; moderate 20–50mm subangular blocky structure; very strong; smooth-ped fabric; 2–5% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.8;
- A₁ (5; 70–80) Very dark grey (10YR3/1) heavy clay; <2% distinct fine dark greyish brown (10YR4/2) patches of sediment, filling cracks; moderate 20–50mm lenticular structure, breaking to moderate 10–20mm angular blocky structure; very strong; weak slickensides, smooth-ped and polished ped fabric; <2% faint fine white (10YR8/2) calcareous soft segregations; <2% <5mm cracks; <2% 0.075–1mm pores; common very fine roots; pH 9.0; genetic boundary, diffuse, smooth change to
- B₂ 105+ (6; 120–130) Dark brown (7.5YR4/2) light medium clay; <2% distinct fine very dark grey (10YR3/1) patches of soil, filling cracks; weak 50–100mm subangular blocky structure; moderately strong; smooth fracture; smooth-ped fabric; 2–10% distinct fine white (10YR8/2) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 9.0;
- B₂ (7; 250–260) Greyish brown (10YR5/2) heavy clay; <2% distinct fine very dark grey (10YR3/1) patches of soil, filling cracks; moderate >100mm wedge structure, breaking to moderate 10–20mm cast granular structure; very firm; weak slickensides, smooth-ped and polished ped fabric; <2% distinct fine white (10YR8/2) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 9.0;

Parent rock: alluvial sediment, mixed texture, with lime

Comments

Ground surface seems trampled or weakly poached or slaked. 1cm polyhedral peds from 250 down. Subsoil is a dull yellowish brown.

Soil classification

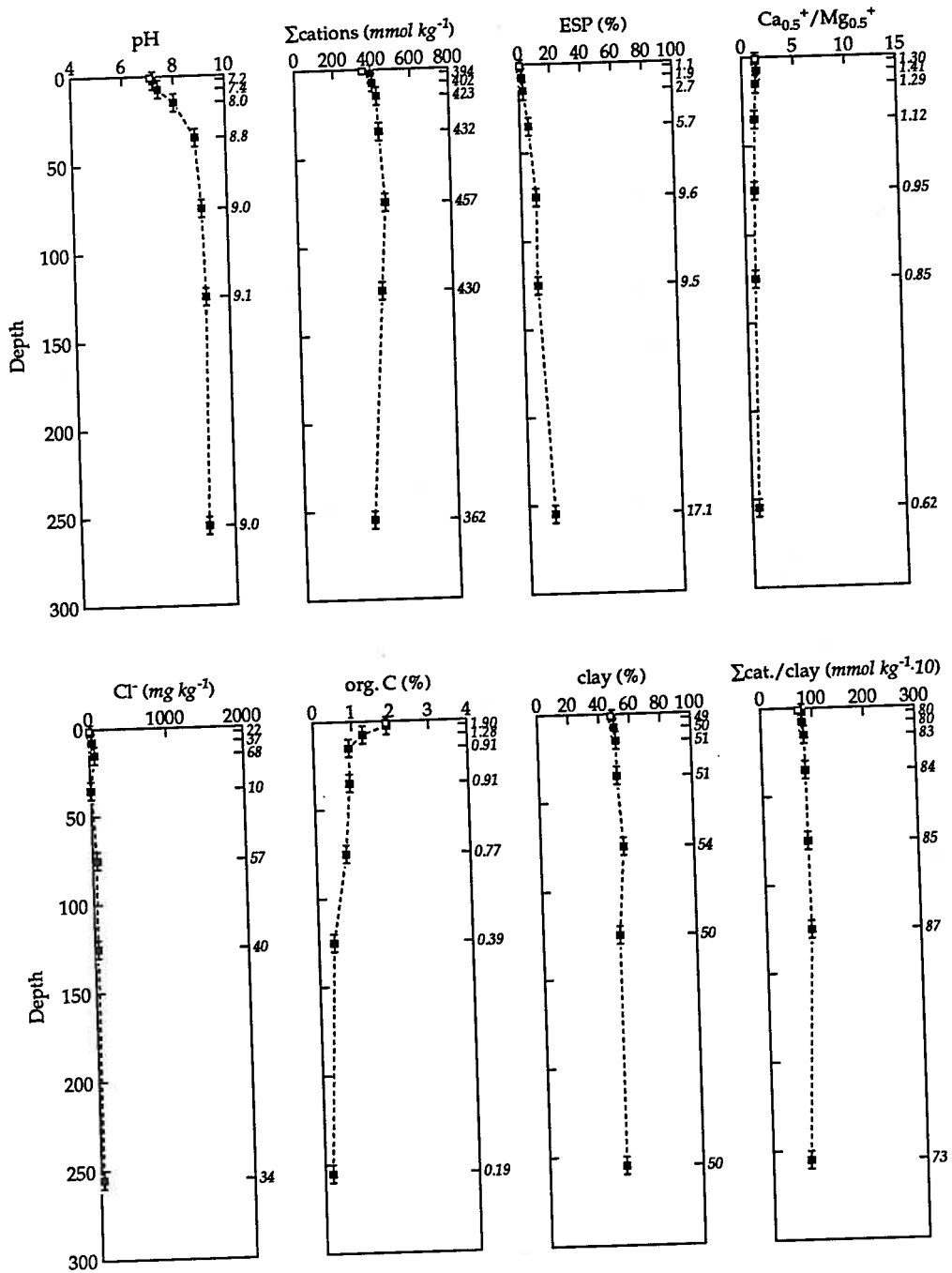
Principal profile form: Ug5.16
Great soil group: Grey clays
Soil taxonomy unit: Pellusterts

Soil chemical and particle-size analyses

Sample	Horizon	Depth <i>cm</i>	pH	E. C. <i>mS m⁻¹</i>	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ 1	0-2	7.1	11.0	1.89	<0.1	25	24	48
1	A ₁ 1	0-5	7.2	18.3	1.90	<0.1	25	23	49
2	A ₁ 2	5-10	7.4	12.9	1.28	<0.1	24	23	50
3	A ₁ 3	10-20	8.0	13.0	0.91	<0.1	25	22	51
4	A ₁ 4	30-40	8.8	13.5	0.91	0.2	24	23	51
5	A ₁ 5	70-80	9.0	26.0	0.77	0.3	20	24	54
6	B ₂ 1	120-130	9.1	23.6	0.39	0.5	27	22	50
7	B ₂ 2	250-260	9.0	20.5	0.19	0.3	31	19	50

Cl ⁻ <i>mg kg⁻¹</i>	NO ₃ ⁻ -N <i>mg kg⁻¹</i>	P <i>mg kg⁻¹</i>	Ca _{0.5} ⁺ <i>mmol kg⁻¹</i>	Mg _{0.5} ⁺ <i>mmol kg⁻¹</i>	K ⁺ <i>mmol kg⁻¹</i>	Na ⁺ <i>mmol kg⁻¹</i>	Al _{0.33} ⁺ <i>mmol kg⁻¹</i>	Σcations <i>mmol kg⁻¹</i>	ESP %
8	-	-	183	140	26.6	2.3	<1	352	0.7
22	5.3	35	204	157	29.5	4.2	<1	394	1.1
37	6.3	10	220	156	17.1	7.8	<1	402	1.9
68	6.4	5	227	176	9.1	11.5	<1	423	2.7
10	1.1	3	211	189	8.1	24.4	<1	432	5.7
57	<0.1	16	197	208	8.5	43.9	<1	457	9.6
40	<0.1	20	175	205	9.2	40.9	<1	430	9.5
34	<0.1	6	112	182	6.4	61.9	<1	362	17.1

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed187

Site location

Grid reference: 771400mE 6653500mN
stock route

Elevation: 241m
north of Buddah

Site described by D. McGarry on 23 April, 1985
The site is located at a grid point

Site description

Slope: 0°
Landform: middle terrace
Surface dry when sampled
Weak surface crust
Use: stock route, fallow
Visible cracks: width 1mm

Topography: flat

Site comments

Site on side of road is disturbed by recent road works.

Site vegetation

The following species were noted:

Geijera parviflora, *Atriplex spinibractea*, *Urochloa panicoides*, *Eragrostis*, *Cynodon dactylon*, *Digitaria ammophila*, *Chloris virgata*, *Asteraceae*, *Verbesina encelloides*, *Tribulus terrestris*, *Wahlenbergia fluminalis*, *Chenopodium pumilio*, *Oxalis pescaprae*, *Bassia quinquecuspis*, *Conyza bonariensis*, *Chenopodium pseudomicrophyllum*.

Profile description

Soil described by W. T. Ward on 4 February, 1986. Drilled depth 273cm

Horizon (cm)	(Sample; depth)
A ₁ 0-40	(1; 0-10) Dark reddish brown (5YR3/2, 10YR4/3 dry) loamy sand; weak 5-10mm subangular blocky structure; moderately firm; sandy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 6.5;
A ₁	(2; 10-20) Dark brown (7.5YR3/2, 10YR4/4 dry) loamy sand; weak 5-10mm platy structure, breaking to weak 5-10mm subangular blocky structure; moderately firm; granular fracture; sandy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 7.0;
A _{1v}	(3; 30-40) Dark brown (7.5YR3/4, 10YR5/4 dry) loamy sand; weak 5-10mm platy structure, breaking to weak 5-10mm subangular blocky structure; moderately firm;

		granular fracture; sandy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 6.5; genetic boundary, gradual, smooth change to
A ₂	40+	(4; 50-60) Dark brown (7.5YR4/2, 7.5YR6/2 dry) loamy sand; weak 5-10mm platy structure, breaking to weak 5-10mm subangular blocky structure; moderately firm; granular fracture; sandy fabric; <2% prominent medium yellowish red (5YR5/8) ferruginous nodules; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 7.0;
B ₂		(5; 70-80) Yellowish red (5YR4/6) medium clay; 10-20% distinct coarse yellowish brown (10YR5/6) mottles; 10-20% prominent very coarse brown (10YR4/3) organic stains; moderate 5-10mm platy structure; moderately strong; earthy fabric; <2% medium ferruginous nodules; <2% <5mm cracks; <2% 1-2mm pores; few very fine roots; pH 7.5;
B ₂		(6; 120-130) Dark yellowish brown (10YR4/6) heavy clay; moderate 10-20mm platy structure; moderately strong; earthy fabric; 2-10% distinct coarse dark reddish brown (5YR3/3) ferruginous nodules; 2-10% prominent coarse very pale brown (10YR7/3) calcareous soft segregations; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; <2% 2-6mm subrounded quartz fragments; pH 8.8;
B ₂ l		(7; 250-260) Yellowish red (5YR4/6) medium clay; 10-20% distinct coarse dark greyish brown (10YR4/2) mottles; weak 50-100mm angular blocky structure rough fracture; smooth-ped and sandy fabric; 2-10% prominent very coarse brown (10YR4/3) calcareous hollow nodules; <2% fine manganese stains; <2% <5mm cracks; few very fine roots; pH 8.8;

Parent rock: alluvial sediment, sandstone

Comments

A rounded concretion in B2 70-80 is 10R3/3. Possible stratigraphic change at 230 to clayier material. Amount of lime increased below 120-130 to 250-260. Fe concretions continue throughout 120-230, more common near top. The reddish colour at bottom is ?prior soil.

Soil classification

Principal profile form: Dr3.13

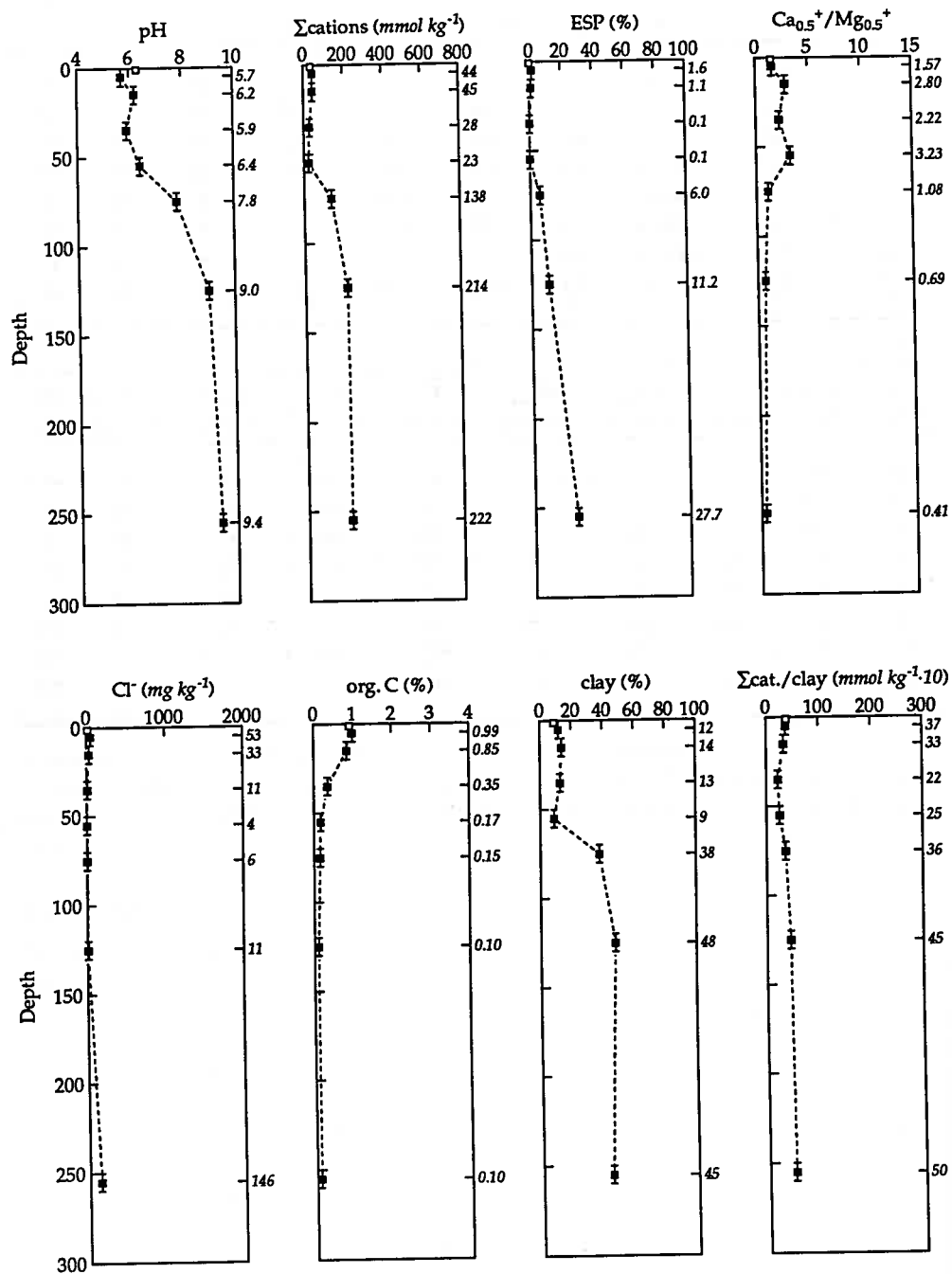
Great soil group: Solodic soils

Soil chemical and particle-size analyses

Sample	Horizon	Depth <i>cm</i>	pH	E. C. <i>mS m⁻¹</i>	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ 1	0-2	6.3	12.6	0.92	<0.1	84	5	9
1	A ₁ 1	0-10	5.7	9.5	0.99	<0.1	79	8	12
2	A ₁ 2	10-20	6.2	6.0	0.85	<0.1	76	9	14
3	A ₁ v	30-40	5.9	2.4	0.35	<0.1	78	9	13
4	A ₂	50-60	6.4	1.4	0.17	<0.1	80	10	9
5	B ₂	70-80	7.8	3.7	0.15	<0.1	54	8	38
6	B ₂	120-130	9.0	13.9	0.10	<0.1	43	9	48
7	B ₂ l	250-260	9.4	42.8	0.10	1.6	39	14	45

Cl ⁻ <i>mg kg⁻¹</i>	NO ₃ ⁻ -N <i>mg kg⁻¹</i>	P <i>mg kg⁻¹</i>	Ca _{0.5} ⁺ <i>mmol kg⁻¹</i>	Mg _{0.5} ⁺ <i>mmol kg⁻¹</i>	K ⁺ <i>mmol kg⁻¹</i>	Na ⁺ <i>mmol kg⁻¹</i>	Al _{0.33} ⁺ <i>mmol kg⁻¹</i>	Σcations <i>mmol kg⁻¹</i>	ESP %
18	-	-	17	11	6.9	<0.1	1	36	<0.1
53	7.8	39	24	16	3.5	0.7	<1	44	1.6
33	3.8	39	31	11	2.8	0.5	<1	45	1.1
11	1.9	35	17	8	3.0	<0.1	<1	28	<0.1
4	1.5	21	16	5	2.7	<0.1	<1	23	<0.1
6	2.0	28	62	58	9.6	8.2	<1	138	6.0
11	1.1	31	72	105	13.2	24.0	<1	214	11.2
146	1.0	16	43	106	11.0	61.5	<1	222	27.7

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed188

Site location

Grid reference: 774300mE 6653200mN

Elevation: 291m

Farmer: R.M.(Ross) Fordham

Farm name: Wonga Plains

Site described by D. McGarry on 20 September, 1985

The site is located at a grid point

Site description

Slope: 1° Slope direction: 310°

Topography: gently sloping

Landform: high terrace

Surface rocky, moist when sampled

Hard-setting surface

Use: native forest

Visible cracks: width 1mm

Site vegetation

The site included bare ground.

The following species were noted:

Acacia deanei, *Alphitonia excelsa*, *Callitris columellaris*, *Geijera parviflora*/*Acacia salicina*,
Eragrostis, *Aristida caput-medusae*, *Eragrostis molybdea*, *Asteraceae*, *Solanum esuriale*.

These specimens were observed but not identified:

134.

Profile description

Soil described by E. Veldhuis on 20 April, 1985. Drilled depth 253cm

Horizon (cm)	(Sample; depth)
A ₁ 0-10	(1; 0-10) Very dark grey (10YR3/1, 10YR4/2 dry) clayey sand; 2-10% faint fine dark brown (10YR3/3) organic stains; weak 2-5mm granular structure; very weak; rough-ped fabric; 2-5% 0.075-1mm pores; many fine roots; <2% 2-6mm subrounded tabular quartz fragments; pH 5.8; genetic boundary, clear, smooth change to
A ₁ 10-27	(2; 10-20) Dark brown (7.5YR3/2, 7.5YR4/4 dry) clayey sand; weak 5-10mm subangular blocky structure; moderately weak; nodular fracture; rough-ped fabric; 2-5% 0.075-1mm pores; common fine roots; <2% 6-20mm subrounded quartz fragments; pH 5.8; genetic boundary, clear, smooth change to
A ₁ 27-40	(3; 30-40) Dark brown (7.5YR3/2, 7.5YR5/4 dry) clayey sand; weak 10-20mm

		subangular blocky structure; moderately firm; nodular fracture; rough-ped fabric; <2% 1-2mm pores; few very fine roots; <2% 6-20mm subrounded quartz fragments; pH 5.8; genetic boundary, sharp, smooth change to
B _{2t}	40-50	(4; 40-50) Dark red (7.5R3/6) light medium clay; 2-10% distinct fine dark brown (7.5YR4/2) mottles; moderate 20-50mm biscuity structure, breaking to moderate 10-20mm subangular blocky structure; very strong; rough-ped fabric; 2-5% 0.075-1mm pores; few very fine roots; <2% 6-20mm subrounded tabular quartz fragments; pH 5.8; genetic boundary, abrupt, smooth change to
B ₂	50-110	(5; 70-80) Yellowish red (5YR4/6) sandy clay; moderate 20-50mm biscuity structure; very strong; rough-ped fabric; 2-10% distinct fine dark reddish brown (2.5YR3/4) clayey cutans in cracks and cavities; 5-10% 1-2mm pores; few very fine roots; <2% 6-20mm subrounded quartz fragments; pH 6.8; genetic boundary, gradual, smooth change to
B ₂	110+	(6; 120-130) Dark red (2.5YR3/6) coarse sand; 2-10% distinct coarse grey (N5/) mottles; moderate 20-50mm biscuity structure; very strong; rough-ped fabric; 2-5% 0.075-1mm pores; few very fine roots; <2% 6-20mm subrounded quartz fragments; pH 7.0;
B ₂		(7; 240-250) Dark red (10R3/6) clayey sand; 2-10% prominent medium grey (5YR5/1) mottles; apedal >100mm massive; very firm; rough fracture; earthy fabric; 2-5% 0.075-1mm pores; few very fine roots; <2% 6-20mm subrounded quartz fragments; pH 6.8;

Comments

The 30 to 40cm layer is a little lighter in colour than the layer above but is not sufficiently light to be called an A2 horizon. At 40cm on top of the textured B horizon there is a shallow layer of gravel composed of ironstone and quartz. Site is near crest of lateritic jumpup.

Soil classification

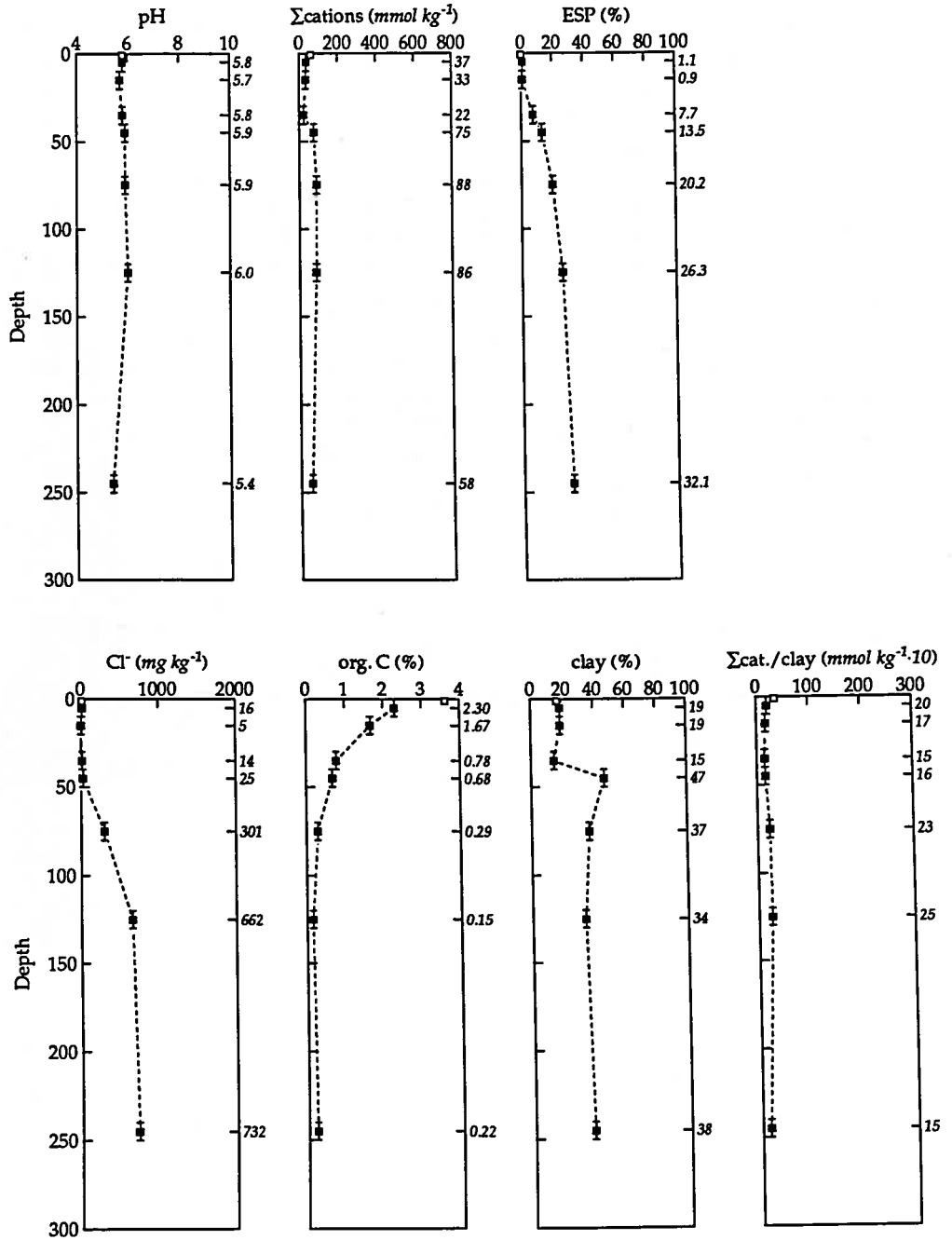
Principal profile form: Dr5.12
Great soil group: Solodic soils

Soil chemical and particle-size analyses

Sample	Horizon	Depth <i>cm</i>	pH	E. C. <i>mS m⁻¹</i>	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ 1	0-2	5.8	5.5	3.62	<0.1	69	7	17
1	A ₁ 1	0-10	5.8	7.2	2.30	<0.1	70	8	19
2	A ₁ 2	10-20	5.7	4.1	1.67	<0.1	70	8	19
3	A ₁ 3	30-40	5.8	3.3	0.78	<0.1	76	7	15
4	B ₂ t	40-50	5.9	6.5	0.68	<0.1	46	6	47
5	B ₂ 1	70-80	5.9	31.5	0.29	<0.1	52	10	37
6	B ₂ 2	120-130	6.0	52.6	0.15	<0.1	54	11	34
7	B ₂ 3	240-250	5.4	58.9	0.22	<0.1	52	10	38

Cl ⁻ <i>mg kg⁻¹</i>	NO ₃ ⁻ -N <i>mg kg⁻¹</i>	P <i>mg kg⁻¹</i>	Ca _{0.5} ⁺ <i>mmol kg⁻¹</i>	Mg _{0.5} ⁺ <i>mmol kg⁻¹</i>	K ⁺ <i>mmol kg⁻¹</i>	Na ⁺ <i>mmol kg⁻¹</i>	Al _{0.33} ⁺ <i>mmol kg⁻¹</i>	Σcations <i>mmol kg⁻¹</i>	ESP %
14	-	-	27	20	7.3	<0.1	7	61	<0.1
16	0.2	8	16	13	7.0	0.4	1	37	1.1
5	0.2	5	14	13	4.9	0.3	1	33	0.9
14	1.0	5	4	13	2.1	1.7	2	22	7.7
25	0.3	3	3	55	5.2	10.1	2	75	13.5
301	0.2	<1	<1	65	5.0	17.7	<1	88	20.2
662	0.2	<1	<1	58	5.2	22.7	<1	86	26.3
732	0.2	<1	<1	36	3.6	18.5	<1	58	32.1

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed189

Site location

Grid reference: 777000mE 6653200mN

Elevation: 302m

Farmer: I.O.(Ian) Falkiner

Farm name: Murrumbilla

Site described by D. McGarry on 10 September, 1985

The site is located at a grid point

Site description

Slope: 4° Slope direction: 350°

Topography: easy sloping

Landform: mid-slope

Surface dry when sampled

Hard-setting surface, virgin state

Use: native forest

Site comments

Surface soil quite similar to site 172, i.e. soft and powdery, but only 1mm deep at the most. Composed mainly of sand grains, with a hard layer beneath. The hard surface crust shows through in many places. Note A2.

Site vegetation

The following species were noted:

Eucalyptus crebra, *Acacia concurrens*, *Eucalyptus pilligaensis*, *Callitris columellaris*, *Aristida caput-medusae*, *Aristida*, *Cheilanthes tenuifolia* ssp. *tenuifolia*.

Profile description

Soil described by D. McGarry on 10 June, 1986. Drilled depth 282cm

Horizon (cm)	(Sample; depth)
A ₁ 0-30	(1; 0-10) Dark brown (7.5YR3/2) loamy sand; weak 10-20mm angular blocky structure; moderately weak; granular fracture; rough-ped fabric; <2% 0.075-1mm pores; few very fine roots; pH 5.0;
A ₁	(2; 10-20) Dark brown (7.5YR3/2) loamy sand; apedal massive; moderately weak; smooth fracture; earthy fabric; <2% 0.075-1mm pores; common fine roots; pH 4.5; genetic boundary, clear, smooth change to
A _{1v} 30-35	(3; 30-38) Light brown (7.5YR6/4) sand; <2% faint fine dark brown (7.5YR4/2) organic stains; weak 20-50mm angular blocky structure; moderately weak; smooth fracture; rough-ped fabric; <2% 0.075-1mm pores; few very fine roots; pH 5.8; genetic boundary, gradual, smooth change to

A ₂	35-45	(4; 38-45) Light brownish grey (10YR6/2) fine sand; 2-10% distinct medium very pale brown (10YR7/3) sporadic bleach; weak 10-20mm angular blocky structure; moderately weak; rough fracture; rough-ped fabric; <2% <5mm cracks; 5-10% 0.075-1mm pores; pH 6.0; genetic boundary, sharp, smooth change to
B ₂	45-240	(5; 45-55) Greyish brown (10YR5/2) clayey sand; 10-20% prominent fine dark grey (10YR4/1) organic stains; apedal massive; very strong; rough fracture; earthy fabric; 2-10% distinct coarse yellowish red (5YR4/6) ferruginous stains; 5-10% 0.075-1mm pores; pH 6.5;
B ₂		(6; 70-80) Brown (10YR5/3) clayey sand; 2-10% distinct fine dark grey (10YR4/1) organic stains; apedal massive; very strong; rough fracture; earthy fabric; <2% distinct medium dark reddish brown (5YR3/4) ferruginous nodules; 5-10% 0.075-1mm pores; pH 8.0;
B ₂		(7; 120-130) Strong brown (7.5YR5/6) sandy clay; 2-10% prominent medium light brownish grey (10YR6/2) mottles; <2% distinct fine black (5YR2/1) organic stains; apedal massive; very firm; rough fracture; rough-ped fabric; 2-5% 0.075-1mm pores; few fine roots; pH 8.5; genetic boundary, clear, smooth change to
C	240+	(8; 250-260) Strong brown (7.5YR5/6) clayey sand; 2-10% distinct medium pinkish grey (7.5YR7/2) mottles; apedal massive; rigid; sandy fabric; <2% 0.075-1mm pores; pH 8.5;

Parent rock: alluvial sediment, sandstone

Comments

Colour 2 189.04 is of small patches of clean sand in A2. 189.05 is top of B2. 120-130 has prominent inwashed humus stained clay.

Soil classification

Principal profile form: Dy4.8

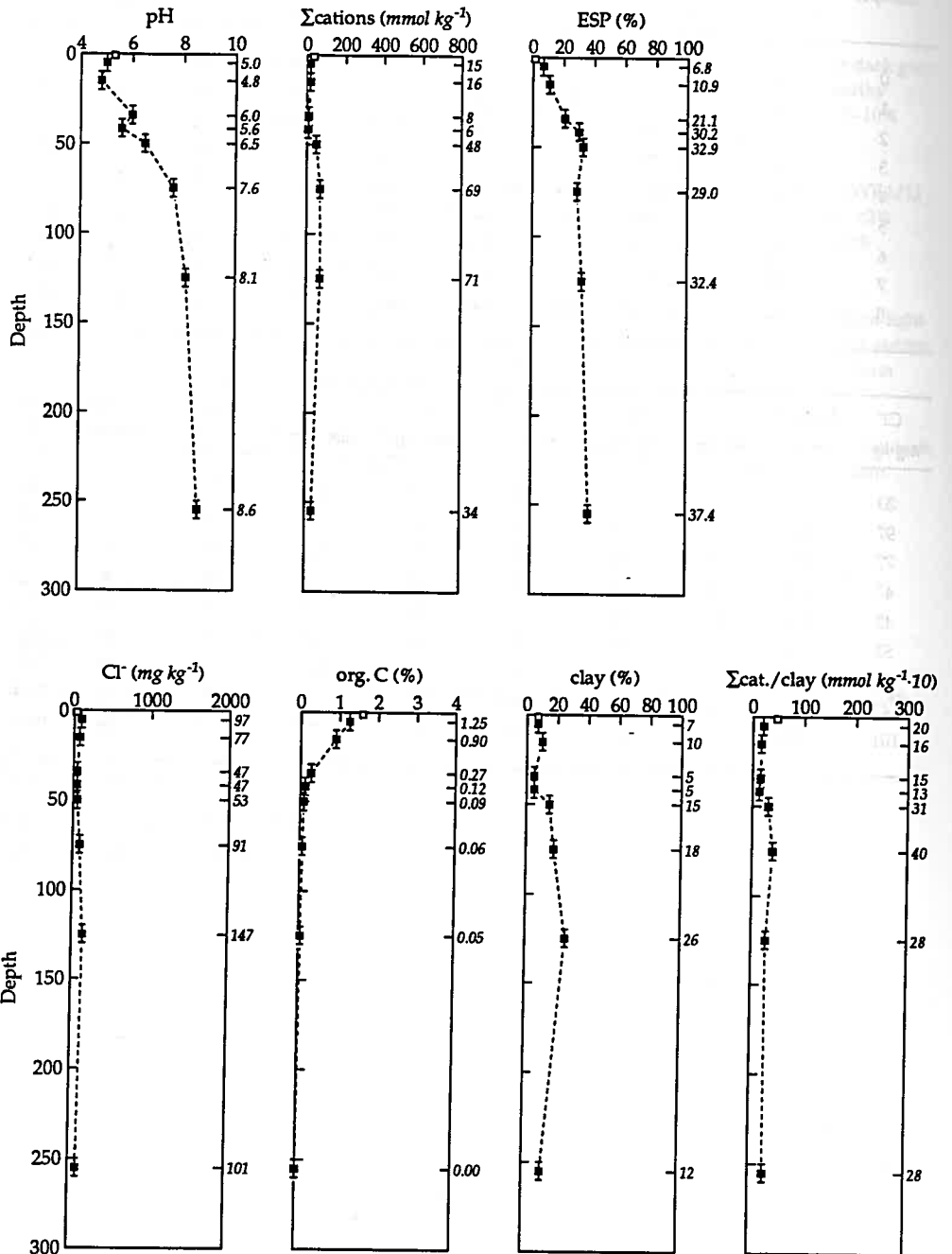
Great soil group: Soloths

Soil chemical and particle-size analyses

Sample	Horizon	Depth <i>cm</i>	pH	E. C. <i>mS m⁻¹</i>	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁	0-2	5.3	2.7	1.58	<0.1	84	6	7
1	A ₁	0-10	5.0	10.4	1.25	<0.1	85	5	7
2	A ₁	10-20	4.8	7.0	0.90	<0.1	82	7	10
3	A ₁ v	30-38	6.0	2.3	0.27	<0.1	83	12	5
4	A ₂	38-45	5.6	2.3	0.12	<0.1	87	8	5
5	B ₂	45-55	6.5	3.8	0.09	<0.1	72	12	15
6	B ₂	70-80	7.6	7.9	0.06	<0.1	76	7	18
7	B ₂	120-130	8.1	16.0	0.05	<0.1	71	4	26
8	C	250-260	8.6	7.8	<0.01	<0.1	81	7	12

Cl ⁻ <i>mg kg⁻¹</i>	NO ₃ ⁻ -N <i>mg kg⁻¹</i>	P <i>mg kg⁻¹</i>	Ca _{0.5} ⁺ <i>mmol kg⁻¹</i>	Mg _{0.5} ⁺ <i>mmol kg⁻¹</i>	K ⁺ <i>mmol kg⁻¹</i>	Na ⁺ <i>mmol kg⁻¹</i>	Al _{0.33} ⁺ <i>mmol kg⁻¹</i>	Σcations <i>mmol kg⁻¹</i>	ESP %
33	-	-	3	2	2.2	0.4	25	33	1.2
97	20.1	5	3	3	3.0	1.0	4	15	6.8
77	10.2	4	<1	2	1.4	1.7	10	16	10.9
47	2.6	2	<1	3	0.4	1.6	3	8	21.1
47	1.6	<1	<1	3	0.4	1.9	1	6	30.2
53	0.3	<1	<1	31	1.4	15.7	<1	48	32.9
91	<0.1	<1	<1	46	3.3	20.1	<1	69	29.0
147	<0.1	2	<1	44	3.8	23.1	<1	71	32.4
101	<0.1	<1	<1	19	1.9	12.7	<1	34	37.4

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed190

Site location

Grid reference: 779700mE 6653100mN

Farmer: I.O.(Ian) Falkiner

Site described by D. McGarry on 10 September, 1985

The site is located at a grid point

Elevation: 322m

Farm name: Murrumbilla

Site description

Slope: 3° Slope direction: 110°

Landform: mid-slope

Surface dry when sampled

Soft surface, virgin state

Use: native forest

Topography: easy sloping

Site vegetation

The following species were noted:

Angophora costata, *Acacia concurrens*, *Eucalyptus pilligaensis*, *Callitris columellaris*, *Eragrostis*,
Aristida caput-medusae, *Hybanthus monopetalus*.

These specimens were observed but not identified:

87.

Profile description

Soil described by M. E. Heape on 21 February, 1986. Drilled depth 254cm

Horizon (cm)	(Sample; depth)
A ₁ 0-12	(1; 0-10) Dark brown (10YR3/3, 10YR6/2 dry) coarse sandy loam; <2% distinct fine greyish brown (2.5Y5/2) bleached surface crust; weak 20-50mm subangular blocky structure; very weak; granular fracture; sandy fabric; <2% 0.075-1mm pores; few very fine roots; pH 7.0; genetic boundary, gradual, smooth change to
A _{2v} 12-75	(2; 10-20) Brown (10YR5/3) coarse sand; 2-10% distinct medium brown (10YR4/3) organic stains; apedal single-grained structure; very weak; nodular fracture; sandy fabric; <2% 0.075-1mm pores; few very fine roots; pH 7.5;
A ₂	(3; 30-40) Very pale brown (10YR7/3) coarse sand; <2% distinct medium brown (10YR5/3) organic stains; <2% faint fine brownish yellow (10YR6/8) mottles; apedal single-grained structure; loose; smooth fracture; sandy fabric; <2% 0.075-1mm pores; few medium roots; pH 7.5;
A ₂	(4; 70-75) Light yellowish brown (10YR6/4) coarse sand; <2% distinct medium

brownish yellow (10YR6/8) mottles; apedal single-grained structure; loose; smooth fracture; sandy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; <2% 2-6mm subrounded quartz fragments; pH 7.5; genetic boundary, abrupt, tongued change to

- | | | |
|----------------|--------|--|
| B ₂ | 75-145 | (5; 75-80) Red (2.5YR4/8) clayey coarse sand; 20-50% distinct very coarse light brownish grey (10YR6/2) mottles; 20-50% distinct medium yellowish brown (10YR5/8) mottles; strong 50-100mm prismatic structure; moderately firm; sandy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; pH 7.0; |
| B ₂ | | (6; 120-130) Red (2.5YR4/8) sandy light clay; 20-50% prominent very coarse light brownish grey (10YR6/2) mottles; 20-50% prominent very coarse reddish yellow (5YR7/8) mottles; weak 50-100mm subangular blocky structure; moderately firm; nodular fracture; sandy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 7.0; genetic boundary, abrupt, irregular change to |
| C | 145+ | (7; 250-260) Yellowish red (5YR4/8) coarse sand; 2-10% prominent very coarse white (N8/) mottles; <2% distinct medium grey (N6/) cutans; strong biscuity structure; moderately strong; sandy fabric; <2% <5mm cracks; pH 7.0; |

Parent rock: residual, sandstone

Comments

Weathered sandstone at 250 contains leached grey crack and a grey clay cutan.

Soil classification

Principal profile form: Dy5.22

Great soil group: Siliceous sands

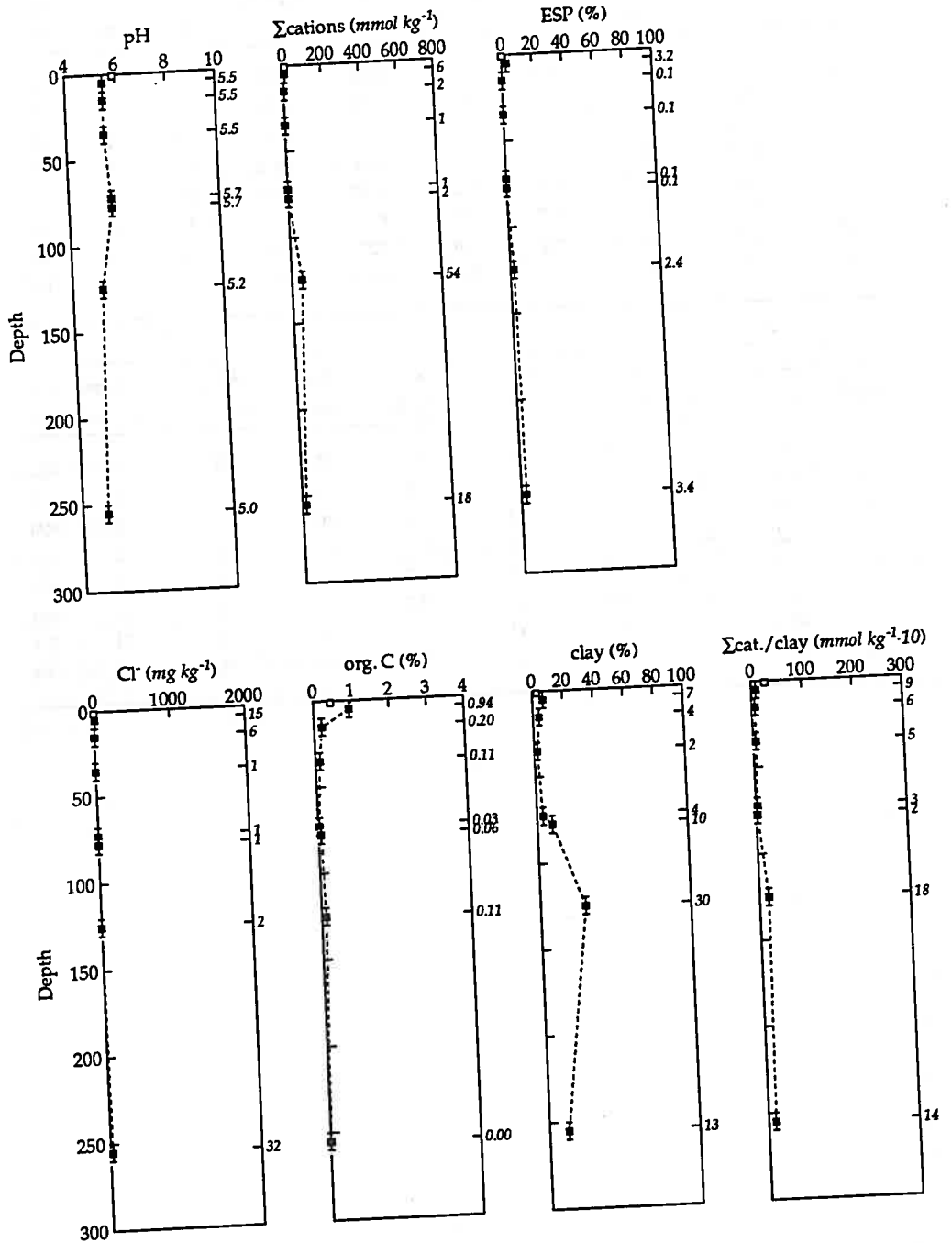
Soil taxonomy unit: Paleustalfs

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. mS m ⁻¹	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁	0-2	5.9	10.0	0.45	<0.1	95	2	3
1	A ₁	0-10	5.5	4.9	0.94	<0.1	85	7	7
2	A ₂ v	10-20	5.5	1.9	0.20	<0.1	92	4	4
3	A ₂ 1	30-40	5.5	1.0	0.11	<0.1	95	3	2
4	A ₂ 2	70-75	5.7	0.5	0.03	<0.1	91	5	4
5	B ₂ 1	75-80	5.7	0.7	0.06	<0.1	85	6	10
6	B ₂ 2	120-130	5.2	2.0	0.11	<0.1	61	8	30
7	C	250-260	5.0	2.8	<0.01	<0.1	80	7	13

Cl ⁻ mg kg ⁻¹	NO ₃ ⁻ -N mg kg ⁻¹	P mg kg ⁻¹	Ca _{0.5} ⁺ mmol kg ⁻¹	Mg _{0.5} ⁺ mmol kg ⁻¹	K ⁺ mmol kg ⁻¹	Na ⁺ mmol kg ⁻¹	Al _{0.33} ⁺ mmol kg ⁻¹	Σcations mmol kg ⁻¹	ESP %
5	-	-	3	<1	0.5	<0.1	3	7	<0.1
15	10.5	4	3	<1	0.8	0.2	2	6	3.2
6	2.0	<1	<1	<1	0.2	<0.1	2	2	<0.1
1	0.2	<1	<1	<1	0.1	<0.1	1	1	<0.1
<1	<0.1	<1	<1	<1	0.2	<0.1	1	1	<0.1
<1	0.2	<1	<1	1	0.3	<0.1	1	2	<0.1
2	<0.1	<1	<1	43	2.4	1.3	7	54	2.4
32	<0.1	<1	<1	13	<0.1	0.6	4	18	3.4

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed191

Site location

Grid reference: 782400mE 6653000mN

Farmer: Arthur V. Melbourne

Site described by D. McGarry on 14 September, 1985

The site is located at a grid point

Elevation: 366m

Farm name: Mountain Valley

Site description

Slope: 4° Slope direction: 140°

Topography: easy sloping

Landform: pediment

Surface moist when sampled

Hard-setting surface, virgin state

Use: native pasture, native forest

Visible cracks: width 1mm

Site comments

Vegetation *Stipa ?scabra* uncertain, poor material. Pediment upper slope. Surface very hard. Bluff above slope is sandstone and basalt, some basalt floaters seen nearby.

Site vegetation

The following species were noted:

Elaeodendron australe, *Eucalyptus albens*, *Acacia salicina*, *Callitris columellaris*, *Casuarina cunninghamiana*, *Stipa ?scabra*, *Aristida*, *Arctotheca calendula*, *Hybanthus monopetalus*, *Vicia sativa*, *Carthamus lanatus*, *Bassia quinquecupis* var. *villosa*.

These specimens were observed but not identified:

183.

Profile description

Soil described by D. McGarry on 4 June, 1986. Drilled depth 293cm

Horizon	(cm)	(Sample; depth)
A ₁	0-10	(1; 0-10) Reddish brown (5YR4/4) sandy clay; moderate 20-50mm subangular blocky structure; moderately firm; rough-ped fabric; <2% <5mm cracks; 2-5% 1-2mm pores; common very fine roots; <2% >60mm subangular tabular quartz fragments; pH 6.5; genetic boundary, clear, smooth change to
B ₂	10-85	(2; 10-20) Yellowish red (5YR5/6) light medium clay; <2% prominent fine reddish brown (5YR4/3) organic stains; moderate 20-50mm angular blocky structure;

- moderately firm; smooth-ped fabric; <2% <5mm cracks; <2% 0.075-1mm pores; common fine roots; <2% 20-60mm subangular tabular rock fragments; pH 7.8;
- B₂ (3; 30-40) Yellowish red (5YR5/6) medium clay; <2% prominent fine reddish brown (5YR4/4) organic stains; moderate 20-50mm angular blocky structure; moderately firm; smooth-ped fabric; <2% <5mm cracks; <2% 0.075-1mm pores; common fine roots; pH 8.0;
- B₂ (4; 70-80) Yellowish red (5YR4/6) medium clay; 2-10% prominent medium light yellowish brown (10YR6/4) inherited stains; weak 20-50mm angular blocky structure; very firm; rough fracture; smooth-ped fabric; 2-10% distinct fine black (10YR2/1) manganese nodules; <2% medium calcareous soft segregations; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; <2% 6-20mm subangular tabular rock fragments; pH 8.8; stratigraphic boundary, clear, smooth change to
- C 85+ (5; 120-130) Reddish brown (5YR5/4) sandy medium clay; 2-10% prominent medium pale yellow (2.5Y7/4) inherited stains; moderate 20-50mm angular blocky structure; very firm; smooth-ped fabric; <2% <5mm cracks; <2% 0.075-1mm pores; <2% 6-20mm subangular tabular sandstone fragments; pH 8.8;
- 2C (6; 250-260) Strong brown (7.5YR5/8) light medium clay; moderate wedge structure, breaking to moderate 10-20mm angular blocky structure; very firm; weak slickensides, smooth-ped fabric; 20-50% prominent very coarse white (10YR8/1) calcareous soft segregations; <2% <5mm cracks; <2% 0.075-1mm pores; <2% 20-60mm subangular tabular rock fragments; pH 9.0;

Comments

On soil surface: 1mm of fine organic and 2mm of light red, fine sand - not a crust, but loose, dispersed material. Below 70cm, there is a yellow mottling which is predominantly weathered sandstone, but also soft carbonate. Small, hard, spherical nodules of Mn are also present. At 96cm there is an abrupt break to a 5cm thick, fine-gravel bed, composed of Ca, Mn, sandstone gravel, held together by clay matrix. From 96cm there are repeated clay-sand layers, some well structured, with Mn and carbonate - all with obvious sedimentary breaks at top and bottom. From 145-180 there is a strongly structured B2 of a previous soil with Mn nodules. Difficult to describe 191.06 as a real mix of clay, bedded sand, large soft carbonate, with varied grey, brown and white colours continues to 293cm. Carbonate occurs from 190 to 293cm. Below 270 the core enters Garrawilla Volcanics. From 200-270 is Purlawaugh Formation, above Purlawaugh is Pilliga or colluvial sandstone.

Soil classification

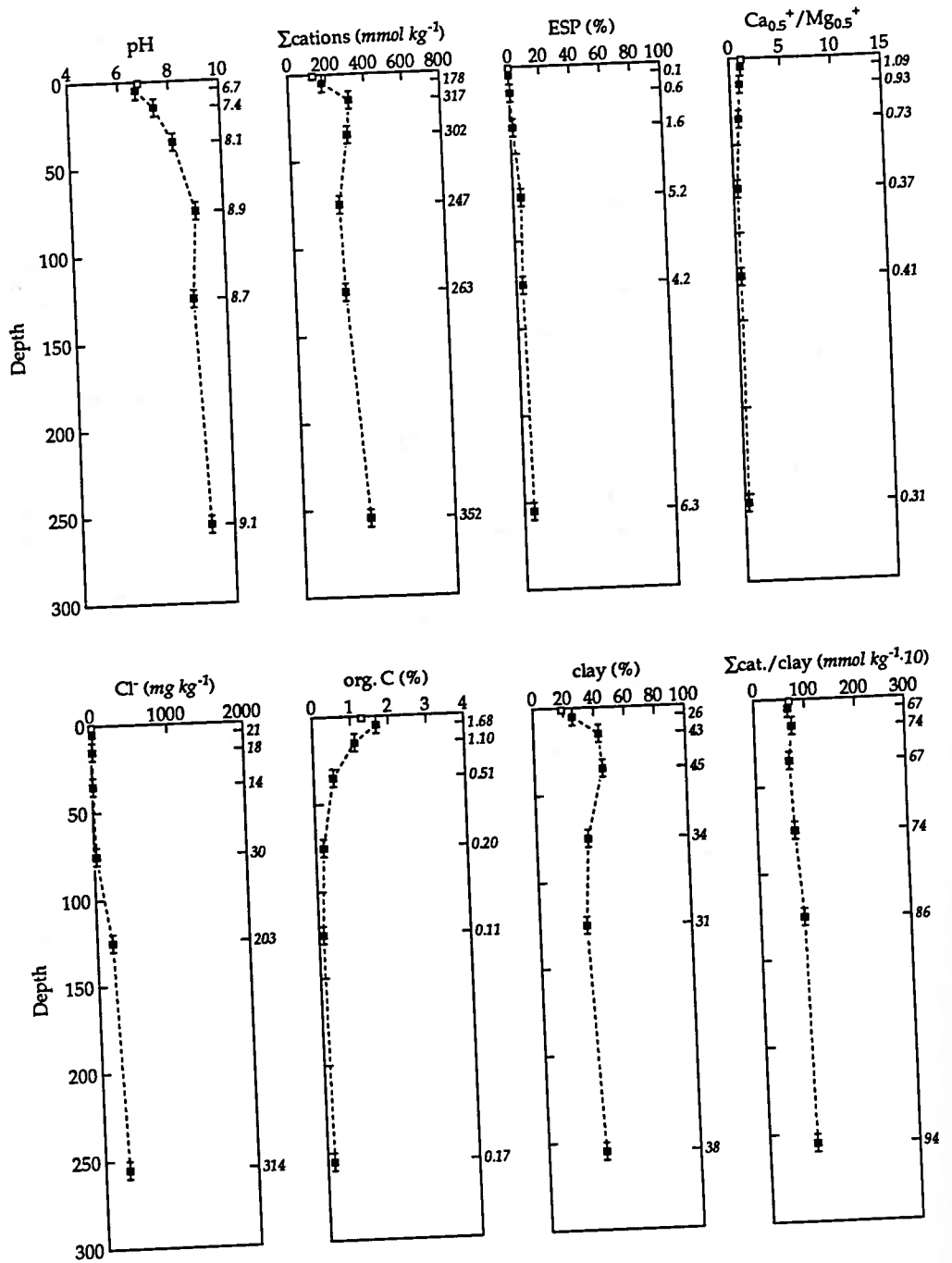
Principal profile form: Ug5.37
 Great soil group: Red clays
 Soil taxonomy unit: Chromusterts

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. mS m ⁻¹	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁	0-2	6.8	4.8	1.30	<0.1	75	4	19
1	A ₁	0-10	6.7	11.8	1.68	<0.1	65	5	26
2	B ₂ 1	10-20	7.4	6.0	1.10	<0.1	51	5	43
3	B ₂ 2	30-40	8.1	6.1	0.51	0.1	49	5	45
4	B ₂ 3	70-80	8.9	16.1	0.20	0.3	60	6	34
5	C	120-130	8.7	24.2	0.11	0.1	63	6	31
6	2C	250-260	9.1	43.3	0.17	44.7	<1	17	38

Cl ⁻ mg kg ⁻¹	NO ₃ ⁻ -N mg kg ⁻¹	P mg kg ⁻¹	Ca _{0.5} ⁺ mmol kg ⁻¹	Mg _{0.5} ⁺ mmol kg ⁻¹	K ⁺ mmol kg ⁻¹	Na ⁺ mmol kg ⁻¹	Al _{0.33} ⁺ mmol kg ⁻¹	Σcations mmol kg ⁻¹	ESP %
15	-	-	67	56	7.4	0.1	<1	131	<0.1
21	34.1	15	88	81	8.7	0.2	<1	178	0.1
18	3.2	2	148	159	8.2	1.8	<1	317	0.6
14	<0.1	<1	123	168	7.3	4.8	<1	302	1.6
30	<0.1	<1	62	168	4.1	12.9	<1	247	5.2
203	<0.1	8	72	177	3.3	11.0	<1	263	4.2
314	<0.1	10	78	248	4.5	22.2	<1	352	6.3

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed192

Site location

Grid reference: 785200mE 6652900mN

Elevation: 392m

Farmer: R.M.(Ross) Fordham

Farm name: Wonga Plains

Site described by D. McGarry on 18 September, 1985

The site is located at a grid point

Site description

Slope: 1° Slope direction: 170°

Topography: gently sloping

Landform: pediment

Surface moist when sampled

Weak surface crust, cultivated

Use: wheat

Visible cracks: width 1mm

Site comments

Weathered basalt contact 64cm. Rock at 160cm stops drilling. Surface crust very weak, breaks to coarse self mulching. Abundant stones and rocks on surface.

Site vegetation

The site was under wheat.

Profile description

Soil described by D. McGarry on 12 June, 1986. Drilled depth 160cm

Horizon (cm)	(Sample; depth)
A ₁ 0-55	(1; 0-10) Dark brown (7.5YR3/2) light clay; moderate 20-50mm lenticular structure, breaking to moderate 5-10mm angular blocky structure; moderately firm; smooth-ped fabric; <2% <5mm cracks; 2-5% 0.075-1mm pores; common very fine roots; <2% >60mm subangular basalt fragments; pH 7.0;
A ₁	(2; 10-20) Dark reddish brown (5YR3/2) light medium clay; strong 10-20mm lenticular structure, breaking to strong 2-5mm angular blocky structure; moderately weak; smooth-ped and polished ped fabric; <2% <5mm cracks; 2-5% 0.075-1mm pores; many very fine roots; <2% 6-20mm subangular basalt fragments; pH 7.0;
A ₁	(3; 30-40) Dark reddish brown (5YR3/2) medium clay; strong 10-20mm lenticular structure, breaking to strong 2-5mm angular blocky structure; moderately weak; weak slickensides, polished ped and smooth-ped fabric; 2-5% <5mm cracks; 2-5% 0.075-1mm pores; many very fine roots; pH 7.5; genetic boundary, clear, smooth

change to

- | | | |
|----------------|-------|---|
| B ₂ | 55-66 | (4; 55-65) Reddish brown (5YR4/4) medium clay; 10-20% distinct medium dark reddish brown (5YR3/2) patches of soil, filling cracks; strong 5-10mm lenticular structure, breaking to strong 2-5mm angular blocky structure; moderately weak; weak slickensides, polished ped and smooth-ped fabric; 2-5% <5mm cracks; 2-5% 0.075-1mm pores; common very fine roots; 2-10% 20-60mm subangular basalt fragments; pH 7.5; genetic boundary, abrupt, smooth change to |
| C | 66+ | (5; 70-80) White (10YR8/1) clay loam; 10-20% distinct medium dark brown (7.5YR4/4) patches of soil, filling cracks; apedal massive; fabric; few very fine roots; pH 7.7; |
| C | | (6; 120-130) White (10YR8/1) clay loam; 2-10% distinct fine dark brown (7.5YR4/4) patches of soil, filling cracks; apedal massive; fabric; few very fine roots; pH 8.0; |

Parent rock: residual, basalt

Comments

0-2cm is fine (2mm-4mm) crumb material. Extra layer (55-65cm) is the B₂, present at the junction of A and C. Carbonate present in layer.06 as soft segregations: 2kn2. Type of basalt: aa, as there are many vesicles in weathered material. Basalt below 90cm is very hard. Field texture samples 5 and 6 estimated from lab results.

Soil classification

Principal profile form: Ug5.13

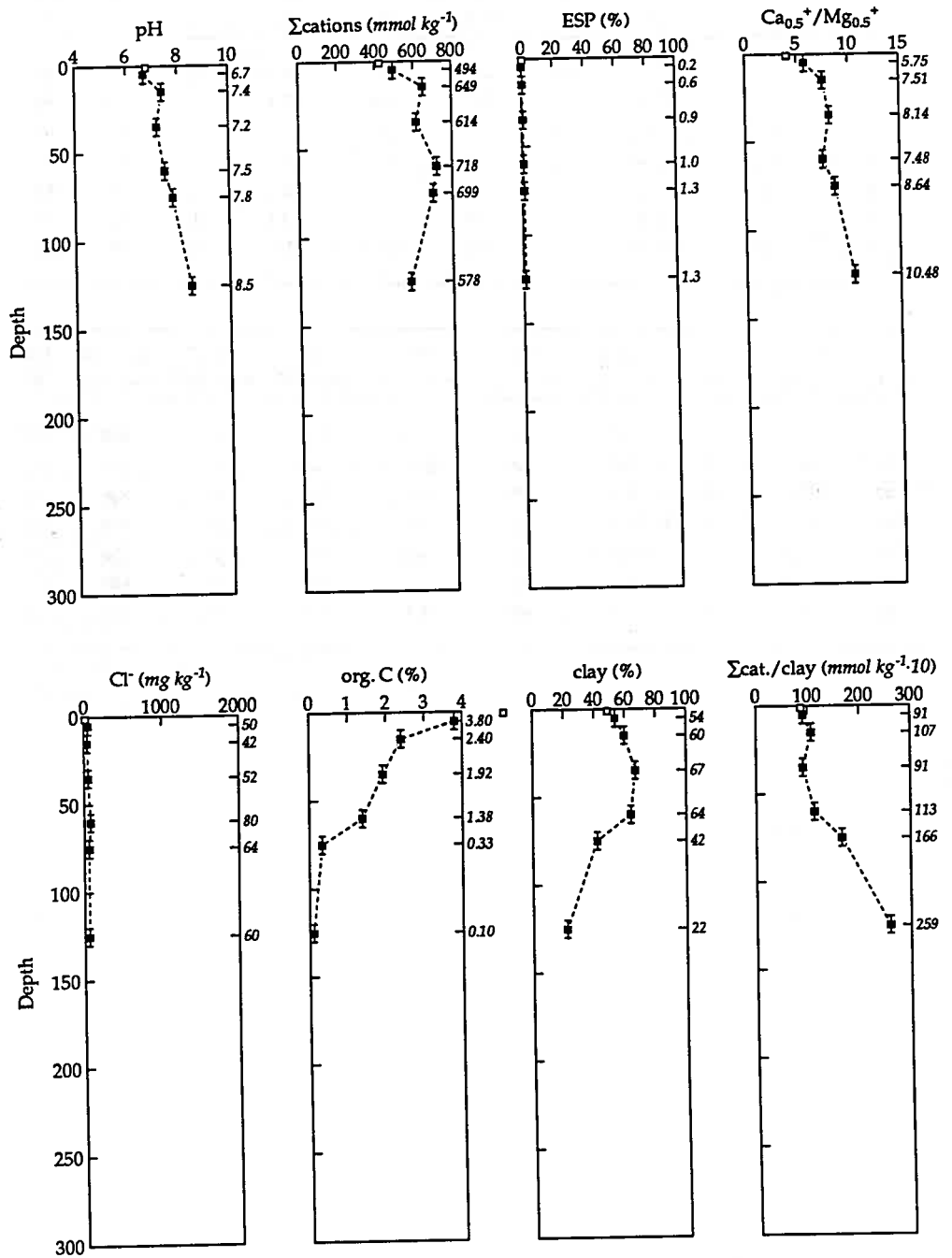
Great soil group: Brown clays

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. mS m ⁻¹	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ 1	0-2	6.8	18.9	5.09	<0.1	18	25	49
1	A ₁ 1	0-10	6.7	28.7	3.80	<0.1	20	20	54
2	A ₁ 2	10-20	7.4	13.0	2.40	<0.1	19	17	60
3	A ₁ 3	30-40	7.2	10.9	1.92	<0.1	15	15	67
4	B ₂	55-65	7.5	7.7	1.38	<0.1	20	15	64
5	C	70-80	7.8	4.9	0.33	<0.1	35	22	42
6	C	120-130	8.5	11.7	0.10	2.1	40	35	22

Cl ⁻ mg kg ⁻¹	NO ₃ ⁻ -N mg kg ⁻¹	P mg kg ⁻¹	Ca _{0.5} ⁺ mmol kg ⁻¹	Mg _{0.5} ⁺ mmol kg ⁻¹	K ⁺ mmol kg ⁻¹	Na ⁺ mmol kg ⁻¹	Al _{0.33} ⁺ mmol kg ⁻¹	Σcations mmol kg ⁻¹	ESP %
17	-	-	307	76	38.9	2.1	<1	424	0.5
50	71.1	191	391	68	34.1	1.1	<1	494	0.2
42	28.9	82	561	75	9.1	3.6	<1	649	0.6
52	20.7	71	538	66	3.6	5.8	<1	614	0.9
80	8.9	77	624	83	3.3	7.3	<1	718	1.0
64	1.7	66	617	71	1.2	9.4	<1	699	1.3
60	6.3	8	517	49	4.4	7.8	<1	578	1.3

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed193

Site location

Grid reference: 787900mE 6652800mN

Farmer: R.L.(Bob) Burrell

Site described by D. McGarry on 13 June, 1985

The site is located at a grid point

Elevation: 427m

Farm name: Woodlands

Site description

Slope: 2° Slope direction: 0°

Landform: high terrace

Surface moist when sampled

Weak surface crust, virgin state

Use: native forest, native pasture, wheat

Topography: moderately undula

Site comments

Surface soil has many small (1-2cm) gravels. *Stipa* identification uncertain. Proline stopped by heavy stone at 90cm. Higher part of large fan spilling from sandstone and basalt scarp. Meandering streams ingrown ca 2-3m.

Site vegetation

The following species were noted:

Elaeodendron australe, *Geijera parviflora*, *Eucalyptus albens*, *Callitris columellaris*, *Dodonaea viscosa*, *Stipa ?scabra*, *Stipa ?setacea*, *Stipa verticellata*, *Stipa*, *Brassica tournefortii*, *Hybanthus monopetalus*, *Vicia sativa*, *Vulgare*, *Capsella bursa-pastoris*, *Lepidium bonariense*, *Silybum marianum*.

These specimens were observed but not identified:

106.

Profile description

Soil described by M. E. Heape on 12 February, 1986. Drilled depth 93cm

Horizon (cm)	(Sample; depth)
A ₁ 0-56	(1; 0-10) Dark reddish brown (5YR3/2, 5YR3/2 dry) medium clay; weak 20-50mm subangular blocky structure, with moderate 2-5mm cast granular structure; moderately firm; granular fracture; earthy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 8.0;
A ₁	(2; 10-20) Dark reddish brown (5YR3/4) medium clay; moderate 20-50mm

subangular blocky structure; moderately firm; earthy fabric; <2% <5mm cracks;
<2% 0.075–1mm pores; few very fine roots; pH 8.0;

A₁ (3; 30–40) Dark reddish grey (5YR4/2) heavy clay; moderate 20–50mm subangular blocky structure; very firm; earthy fabric; <2% <5mm cracks; few very fine roots; 2–10% 2–6mm subangular basalt fragments; pH 7.0; stratigraphic boundary, abrupt, smooth change to

B_{2r} 56+ (4; 70–80) Reddish brown (5YR4/3) sandy clay; apedal massive; moderately strong; earthy fabric; <2% 0.075–1mm pores; few very fine roots; 50–90% >60mm subangular basalt fragments; pH 8.0;

Parent rock: alluvial sediment, mixed texture, non-calcareous

Comments

Too smashed up to give meaningful physical measurements. Some similarities with site 195 except lack of crumb structure. A shallow soil on rock. Alluvium or colluvium.

Soil classification

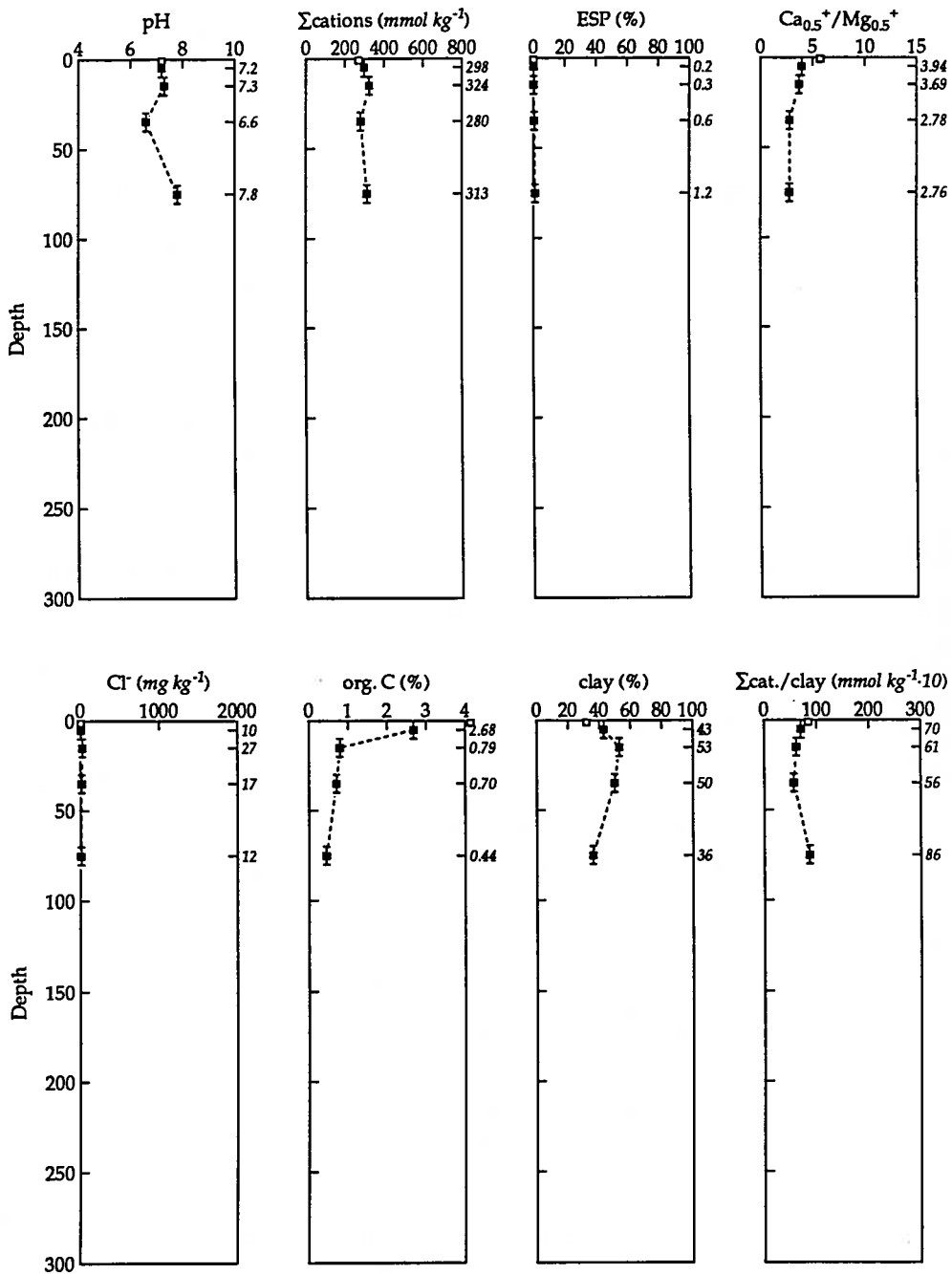
Principal profile form: Ug6.3
Great soil group: Brown clays

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. mS m ⁻¹	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ 1	0–2	7.2	8.6	4.14	<0.1	37	24	32
1	A ₁ 1	0–10	7.2	19.6	2.68	<0.1	30	23	43
2	A ₁ 2	10–20	7.3	8.3	0.79	<0.1	23	23	53
3	A ₁ 3	30–40	6.6	4.6	0.70	<0.1	25	24	50
4	B ₂ r	70–80	7.8	8.9	0.44	0.1	44	19	36

Cl ⁻ mg kg ⁻¹	NO ₃ ⁻ -N mg kg ⁻¹	P mg kg ⁻¹	Ca _{0.5} ⁺ mmol kg ⁻¹	Mg _{0.5} ⁺ mmol kg ⁻¹	K ⁺ mmol kg ⁻¹	Na ⁺ mmol kg ⁻¹	Al _{0.33} ⁺ mmol kg ⁻¹	Σcations mmol kg ⁻¹	ESP %
9	–	–	210	37	23.7	0.1	<1	270	<0.1
10	56.8	135	215	55	27.6	0.7	<1	298	0.2
27	11.2	73	245	66	11.9	1.0	<1	324	0.3
17	1.4	77	200	72	5.4	1.8	<1	280	0.6
12	0.8	36	223	81	4.3	3.9	<1	313	1.2

Soil chemistry profiles





Namoi Valley soil study: Edgeroi Sheet

Site ed194

Site location

Grid reference: 742600mE 6651600mN
Forestry Commission of NSW
Site described by G. M. Roberts on 25 June, 1985
The site is located at a grid point

Elevation: 197m
Culgoora State Forest

Site description

Slope: 0°
Landform: middle terrace
Surface dry when sampled
Loose surface, virgin state
Use: native forest, wheat

Topography: flat

Site comments

Deane's wattle, cypress pine, iron bark. Too dark for surface photo.

Profile description

Soil described by W. T. Ward on 11 July, 1986. Drilled depth 255cm

Horizon (cm)	(Sample; depth)
A ₁ 0-25	(1; 0-10) Dark reddish brown (5YR3/4, 5YR4/4 dry) loamy sand; apedal single-grained structure, with weak 2-5mm granular structure; moderately weak; sandy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 6.5;
A ₁	(2; 10-20) Dark reddish brown (2.5YR3/4) loamy sand; weak 10-20mm platy structure, breaking to weak 5-10mm angular blocky structure; moderately firm; smooth fracture; sandy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 6.5; genetic boundary, gradual, smooth change to
A ₂ 25-50	(3; 30-40) Dark red (2.5YR3/6) clayey sand; <2% distinct fine black (N2/) charcoal fragments; weak 10-20mm platy structure, breaking to weak 5-10mm angular blocky structure; moderately weak; granular fracture; sandy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 6.5; genetic boundary, gradual, smooth change to
B ₂ 50+	(4; 70-80) Dark red (7.5R3/6) sandy clay; <2% distinct fine reddish brown (2.5YR5/4) flecks produced by faunal mixing; weak 50-100mm prismatic structure breaking to weak 10-20mm platy structure; very firm; nodular fracture; sandy fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 6.0;

B₂ (5; 120–130) Red (7.5R4/6) sandy clay; 2–10% faint fine weak red (7.5R4/4) cutans; apedal massive; moderately strong; smooth fracture; sandy fabric; 2–5% 0.075–1mm pores; few very fine roots; pH 6.0;

B₂ (6; 245–255) Red (7.5R4/6) sandy light clay; 2–10% faint fine weak red (7.5R4/4) cutans; <2% distinct fine light reddish brown (5YR6/3) pockets of sand; apedal massive; moderately strong; smooth fracture; sandy fabric; <2% 0.075–1mm pores; few very fine roots; pH 5.5;

Parent rock: alluvial sediment, sand, clay

Comments

Shearvane 70–80 hard to get in but then breaks at 5.0 probably because soil fractures as vane is inserted. The A₂ is just present, not bleached. The cutans at 120–130 become more common with depth (to 260). The B₂ has weak partings, not enough to justify prismatic structure.

Soil classification

Principal profile form: Dr2.22

Great soil group: Red earths

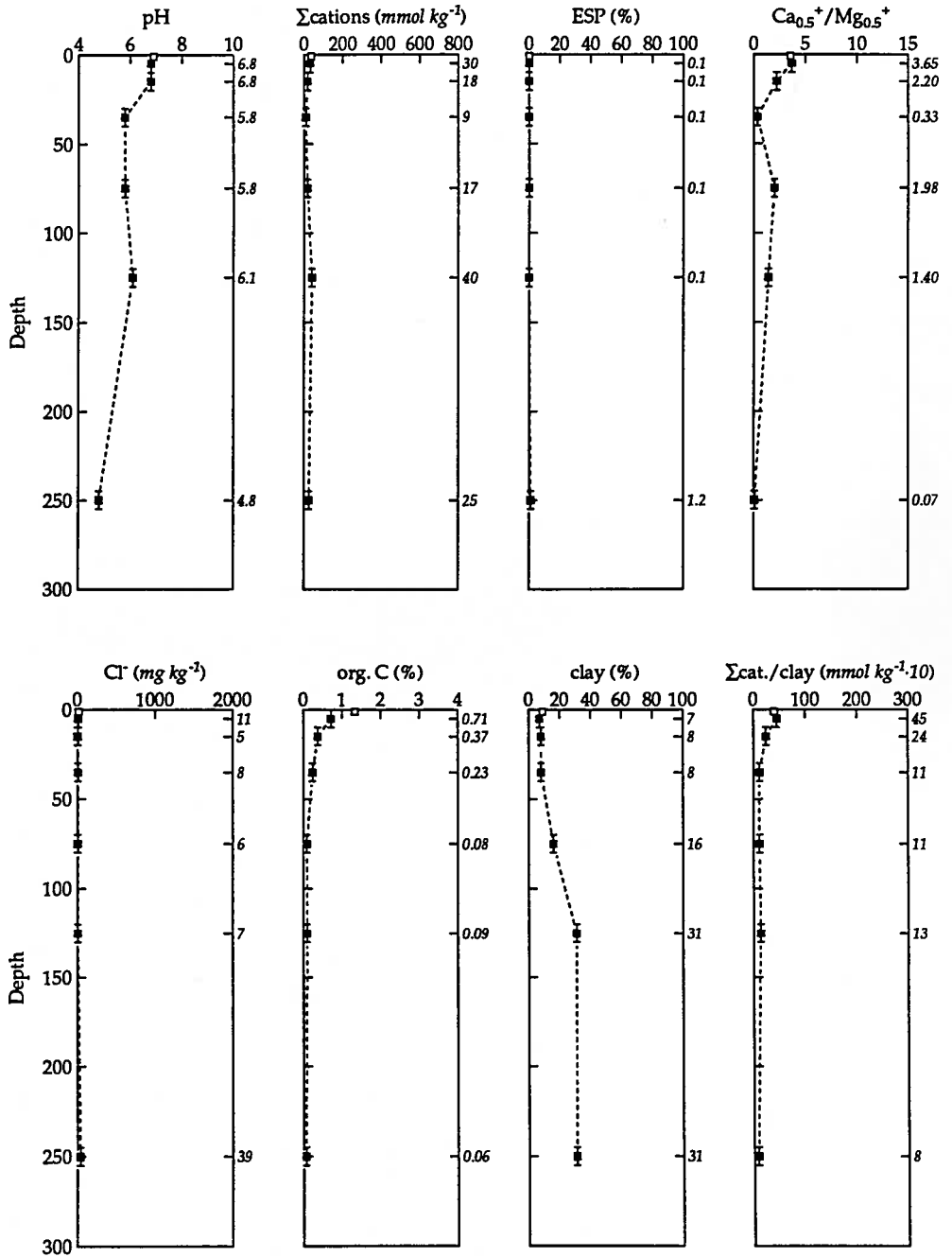
Soil taxonomy unit: Paleustalfs

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. mS m ⁻¹	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ 1	0–2	6.9	3.8	1.33	<0.1	85	4	9
1	A ₁ 1	0–10	6.8	6.5	0.71	<0.1	90	3	7
2	A ₁ 2	10–20	6.8	2.3	0.37	<0.1	89	3	8
3	A ₂	30–40	5.8	1.3	0.23	<0.1	88	3	8
4	B ₂	70–80	5.8	1.1	0.08	<0.1	81	3	16
5	B ₂	120–130	6.1	1.3	0.09	<0.1	66	2	31
6	B ₂	245–255	4.8	4.4	0.06	<0.1	66	3	31

Cl ⁻ mg kg ⁻¹	NO ₃ ⁻ -N mg kg ⁻¹	P mg kg ⁻¹	Ca _{0.5} ⁺ mmol kg ⁻¹	Mg _{0.5} ⁺ mmol kg ⁻¹	K ⁺ mmol kg ⁻¹	Na ⁺ mmol kg ⁻¹	Al _{0.33} ⁺ mmol kg ⁻¹	Σcations mmol kg ⁻¹	ESP %
18	–	–	25	7	4.0	<0.1	<1	36	<0.1
11	2.5	15	21	6	3.7	<0.1	<1	30	<0.1
5	1.0	15	11	5	2.5	<0.1	<1	18	<0.1
8	0.4	5	<1	<1	2.1	<0.1	6	9	<0.1
6	0.1	3	9	4	2.6	<0.1	1	17	<0.1
7	0.1	3	22	16	2.2	<0.1	<1	40	<0.1
39	0.1	9	1	16	2.6	0.3	5	25	1.2

Soil chemistry profiles





Namoi Valley soil study: Edgeroi Sheet

Site ed195

Site location

Grid reference: 745400mE 6651600mN

Farmer: R.A.(Richard) Williams

Site described by G. M. Roberts on 23 June, 1985

The site is located at a grid point

Elevation: 198m

Farm name: Merinda

Site description

Slope: 1° Slope direction: 045°

Landform: low terrace

Surface dry when sampled

Weak surface crust, cultivated

Use: wheat

Topography: gently sloping

Site comments

This site is 15–20m from a small drainage line (natural) which would account for the poor surface condition and its sandy fabric.

Site vegetation

The site was under wheat.

Profile description

Soil described by G. M. Roberts on 22 August, 1985. Drilled depth 279cm

Horizon (cm)	(Sample; depth)
A ₁ P 0–8	(1; 0–8) Very dark greyish brown (10YR3/2, 10YR6/3 dry) sandy clay loam; weak 2–5mm subangular blocky structure, breaking to apedal <2mm single-grained structure; moderately firm; granular fracture; earthy and sandy fabric; 2–5% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 6.5; plough sole, sharp, smooth change to
A ₁ 8–40	(2; 10–20) Very dark greyish brown (10YR3/2) sandy loam; weak 20–50mm subangular blocky structure, breaking to weak 2–5mm subangular blocky structure; moderately firm; nodular fracture; earthy and sandy fabric; 2–5% <5mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 6.5;
A ₁	(3; 30–40) Very dark greyish brown (10YR3/2) sandy clay loam; 10–20% distinct coarse yellowish brown (10YR5/4) patches of soil, filling cracks; moderate 10–20mm subangular blocky structure, breaking to moderate 2–5mm angular blocky structure; moderately firm; earthy and smooth-ped fabric; 2–5% 5–10mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 8.0; genetic boundary,

		gradual, smooth change to
B ₂	40-180	(4; 70-80) Dark yellowish brown (10YR4/4) silty clay loam; 2-10% distinct medium dark greyish brown (10YR4/2) patches of soil, filling cracks; moderate 50-100mm prismatic structure, breaking to moderate 5-10mm angular blocky structure; very firm; weak slickensides, smooth-ped and earthy fabric; 2-5% <5mm cracks; 2-5% 0.075-1mm pores; pH 9.0;
B ₂		(5; 120-130) Brown (10YR4/3) sandy clay; 10-20% distinct coarse yellowish brown (10YR5/6) patches of soil, filling cracks; moderate 50-100mm prismatic structure, breaking to moderate 5-10mm angular blocky structure; moderately firm; smooth-ped and earthy fabric; 2-5% 5-10mm cracks; 2-5% 0.075-1mm pores; pH 8.3; genetic boundary, very diffuse, smooth change to
C	180+	(6; 250-260) Brown (7.5YR5/4) sandy clay loam; 10-20% distinct coarse brown (7.5YR5/2) patches of soil, filling cracks; <2% prominent medium black (10YR2/1) charcoal fragments; weak 50-100mm prismatic structure, breaking to weak 2-5mm subangular blocky structure; moderately weak; nodular fracture; earthy and smooth-ped fabric; <2% <5mm cracks; 2-5% 0.075-1mm pores; pH 8.5;

Parent rock: alluvial sediment, mixed texture, non-calcareous

Comments

Episodic accumulation shown by texture profile and sand coating cracks but no evidence of interrupted soil development. Numerous worm casts from 110-150cm, 15mm dia. Sand on ped faces continues through to >195. Cracks between peds at 195.06 are stained with organic matter or ?reduction colour. Possibly a slow draining Q: at 265 there are clear gley colours in yellowish brown groundmass.

Soil classification

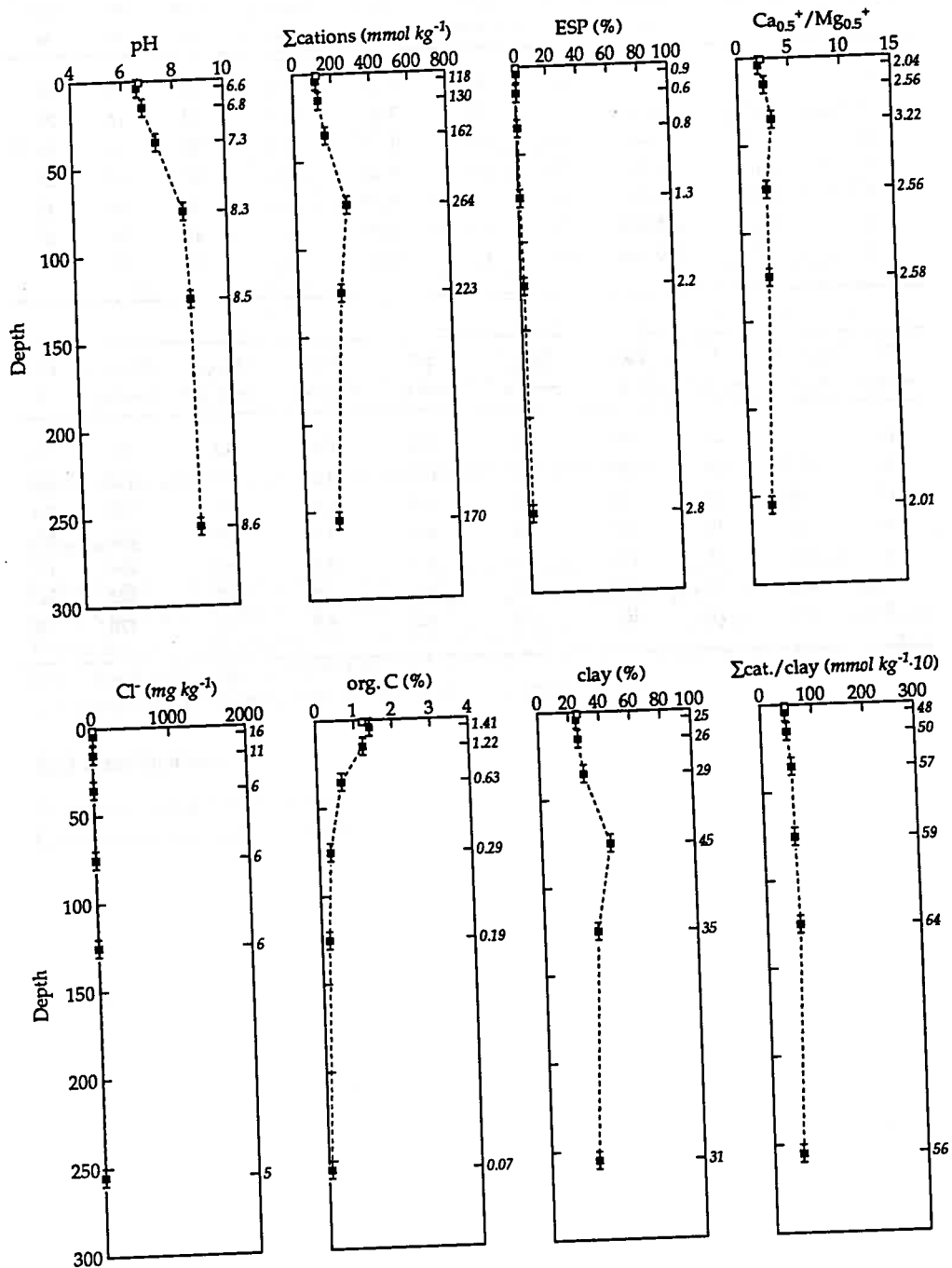
Principal profile form: Gn3.23
Great soil group: Alluvial soils

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. $mS\ m^{-1}$	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ p	0-2	6.7	4.2	1.23	<0.1	59	13	26
1	A ₁ p	0-8	6.6	7.4	1.41	<0.1	59	14	25
2	A ₁ 1	10-20	6.8	4.6	1.22	<0.1	58	14	26
3	A ₁ 2	30-40	7.3	4.5	0.63	<0.1	57	14	29
4	B ₂ 1	70-80	8.3	5.9	0.29	<0.1	39	16	45
5	B ₂ 2	120-130	8.5	5.5	0.19	<0.1	49	16	35
6	C	250-260	8.6	6.3	0.07	0.1	58	12	31

Cl ⁻ $mg\ kg^{-1}$	NO ₃ ⁻ -N $mg\ kg^{-1}$	P $mg\ kg^{-1}$	Ca _{0.5} ⁺ $mmol\ kg^{-1}$	Mg _{0.5} ⁺ $mmol\ kg^{-1}$	K ⁺ $mmol\ kg^{-1}$	Na ⁺ $mmol\ kg^{-1}$	Al _{0.33} ⁺ $mmol\ kg^{-1}$	Σcations $mmol\ kg^{-1}$	ESP %
11	-	-	77	33	11.9	0.6	<1	123	0.5
16	<0.1	68	70	34	13.0	1.1	<1	118	0.9
11	4.8	64	84	33	11.4	0.8	<1	130	0.6
6	1.2	29	117	36	6.6	1.3	<1	162	0.8
6	0.4	12	183	71	6.9	3.3	<1	264	1.3
6	<0.1	28	154	60	4.6	4.8	<1	223	2.2
5	<0.1	19	107	53	4.8	4.8	<1	170	2.8

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed196

Site location

Grid reference: 748200mE 6651500mN

Elevation: 200m

Farm name: ? Lochelgin

Site described by G. M. Roberts on 23 June, 1985

The site is located at a grid point

Site description

Slope: 0°

Topography: flat

Landform: middle terrace

Surface dry when sampled

Coarse self-mulching surface, cultivated

Use: irrigated cotton

Visible cracks: width 1mm

Site vegetation

The site was under cotton.

Profile description

Soil described by G. M. Roberts on 5 September, 1985. Drilled depth 260cm

Horizon (cm)	(Sample; depth)
A ₁ p 0-10	(1; 0-10) Very dark greyish brown (10YR3/2, 10YR4/2 dry) medium clay; weak 2-5mm granular structure, with moderate 10-20mm subangular blocky structure; very firm; earthy and smooth-ped fabric; 5-10% <5mm cracks; 2-5% 0.075-1mm pores; few very fine roots; pH 8.5; plough sole,
A ₁ 10-83	(2; 10-20) Very dark greyish brown (10YR3/2) medium heavy clay; <2% distinct medium light yellowish brown (10YR6/4) patches of soil, filling cracks; strong 5-10mm wedge structure, breaking to moderate 2-5mm angular blocky structure; moderately firm; weak slickensides, smooth-ped and polished ped fabric; <2% distinct fine very pale brown (10YR8/3) calcareous nodules; 5-10% 5-10mm cracks; 2-5% 0.075-1mm pores; few very fine roots; pH 8.7;
A ₁ k	(3; 30-40) Very dark greyish brown (10YR3/2) medium heavy clay; moderate 20-50mm angular blocky structure, breaking to moderate 5-10mm angular blocky structure; very firm; weak slickensides, smooth-ped and polished ped fabric; 2-10% distinct medium pale brown (10YR6/3) calcareous nodules; 2-5% 5-10mm cracks; 2-5% 0.075-1mm pores; few very fine roots; pH 8.7;
A ₁ k	(4; 70-80) Dark greyish brown (10YR4/2) medium heavy clay; strong 20-50mm wedge structure, breaking to moderate 5-10mm angular blocky structure; very

firm; moderate slickensides, smooth-ped and polished ped fabric; 2-10% distinct medium pale brown (10YR6/3) calcareous nodules; <2% <5mm cracks; 2-5% 0.075-1mm pores; few very fine roots; pH 8.7;

- B₂k 83+ (5; 120-130) Brown (10YR4/3) medium clay; 2-10% distinct coarse dark grey (10YR4/1) patches of soil, filling cracks; weak 20-50mm subangular blocky structure, breaking to moderate 5-10mm wedge structure; moderately firm; weak slickensides, earthy and smooth-ped fabric; 2-10% distinct coarse very pale brown (10YR7/3) calcareous nodules; <2% <5mm cracks; 2-5% 0.075-1mm pores; few very fine roots; pH 8.7;
- B₂ (6; 250-260) Brown (10YR4/3) medium clay; 2-10% distinct medium strong brown (7.5YR5/6) mottles; strong 10-20mm wedge structure, breaking to moderate 5-10mm angular blocky structure; moderately firm; weak slickensides, smooth-ped and polished ped fabric; 2-10% medium ferruginous veins; <2% <5mm cracks; 2-5% 0.075-1mm pores; pH 8.7;

Parent rock: alluvial sediment, clay

Soil classification

Principal profile form: Ug5.15

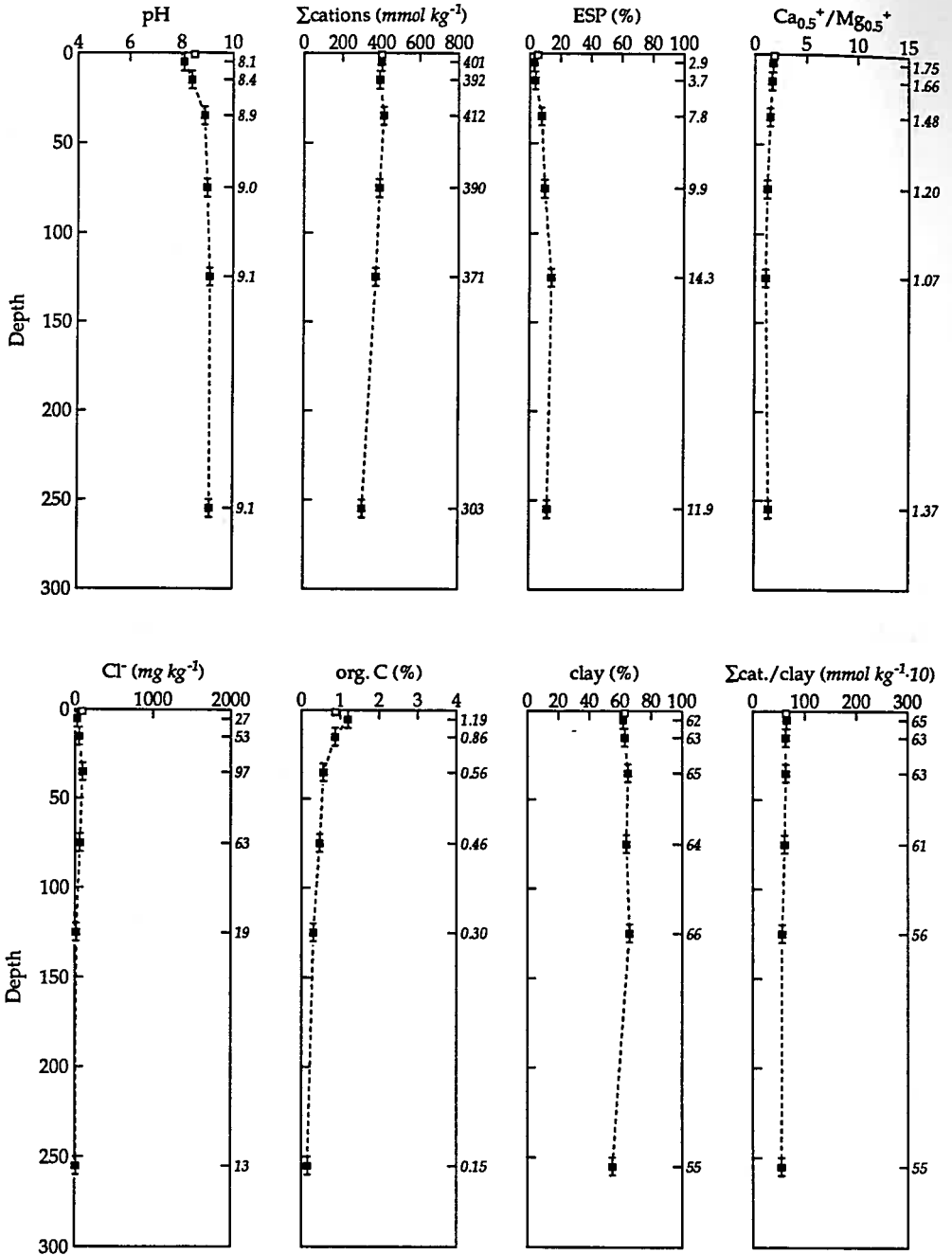
Great soil group: Brown clays

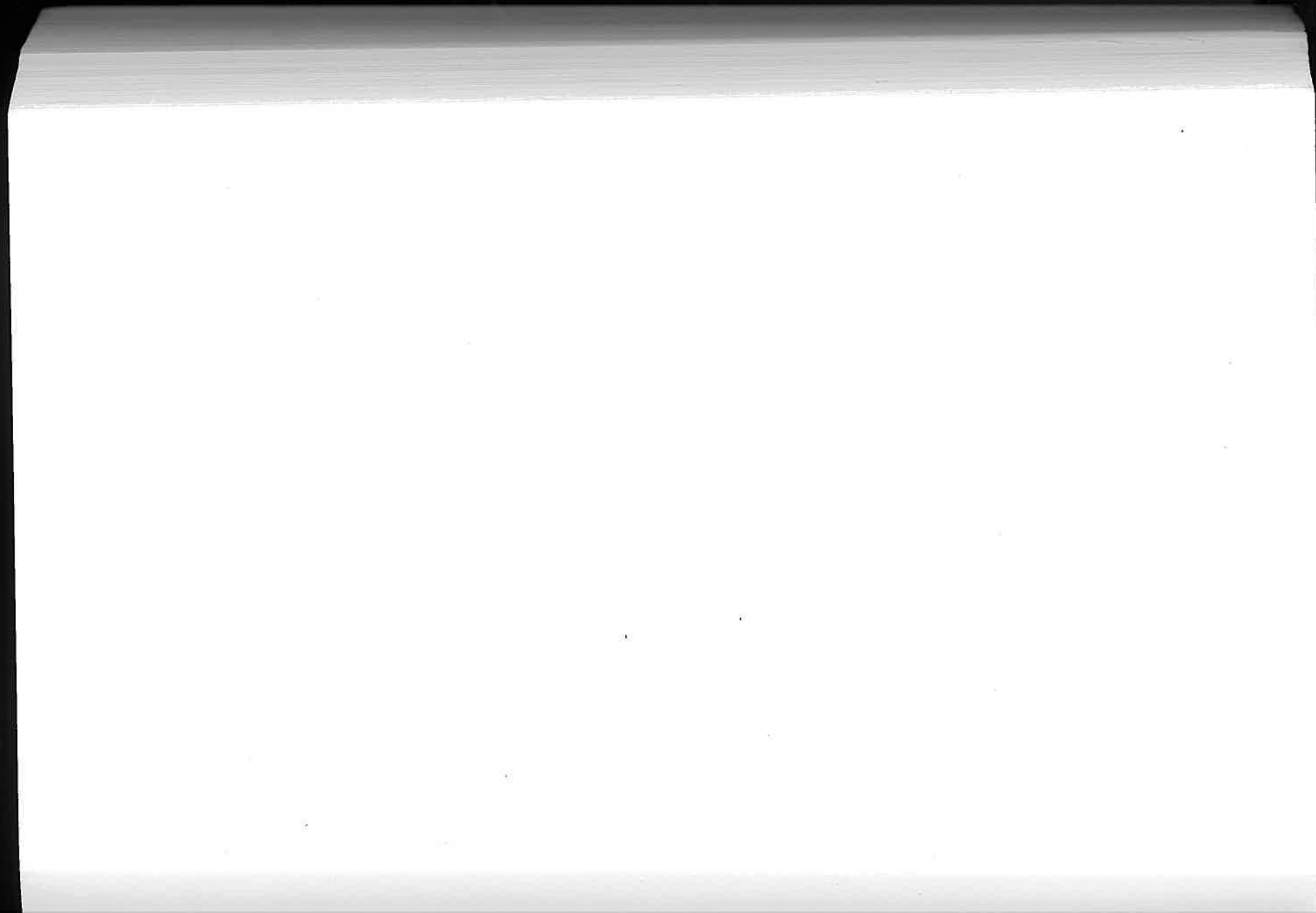
Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. mS m ⁻¹	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ P	0-2	8.5	20.4	0.87	<0.1	18	17	63
1	A ₁ P	0-10	8.1	19.8	1.19	0.2	19	17	62
2	A ₁	10-20	8.4	12.4	0.86	0.4	18	18	63
3	A ₁ k1	30-40	8.9	12.3	0.56	0.5	17	16	65
4	A ₁ k2	70-80	9.0	20.8	0.46	0.8	17	17	64
5	B ₂ k1	120-130	9.1	25.9	0.30	1.5	13	19	66
6	B ₂	250-260	9.1	16.3	0.15	1.0	21	22	55

Cl ⁻ mg kg ⁻¹	NO ₃ ⁻ -N mg kg ⁻¹	P mg kg ⁻¹	Ca _{0.5} ⁺ mmol kg ⁻¹	Mg _{0.5} ⁺ mmol kg ⁻¹	K ⁺ mmol kg ⁻¹	Na ⁺ mmol kg ⁻¹	Al _{0.33} ⁺ mmol kg ⁻¹	Σcations mmol kg ⁻¹	ESP %
93	-	-	237	128	15.0	20.8	<1	401	5.2
27	0.6	39	235	135	19.4	11.6	<1	401	2.9
53	0.2	24	228	137	11.4	14.5	<1	392	3.7
97	0.3	8	223	150	7.0	32.2	<1	412	7.8
63	2.1	16	188	156	7.1	38.7	<1	390	9.9
19	30.2	25	161	150	7.0	53.1	<1	371	14.3
13	11.2	23	152	111	4.1	35.9	<1	303	11.9

Soil chemistry profiles





Namoi Valley soil study: Edgeroi Sheet

Site ed197

Site location

Grid reference: 750950mE 6651500mN
 Farmer: W.J.(Bill) Cathcart
 Site described by G. M. Roberts on 24 June, 1985
 The site is located at a grid point

Elevation: 201m
 Farm name: Wild Willows

Site description

Slope: 0°
 Landform: middle terrace
 Surface dry when sampled
 Fine self-mulching surface, cultivated
 Use: irrigated cotton, wheat
 Visible cracks: width 1mm

Topography: flat

Site comments

There is a patch of natural vegetation in a corner of the paddock 100m from site. Myall is the main species.

Site vegetation

The site was under cotton, and included bare ground.

The following species were noted:

?*Cassia*.

Profile description

Soil described by G. M. Roberts on 3 September, 1985. Drilled depth 286cm

Horizon (cm)	(Sample; depth)
A ₁ p 0-10	(1; 0-10) Very dark grey (10YR3/1, 10YR4/1 dry) medium heavy clay; moderate 2-5mm granular structure, with moderate 20-50mm subangular blocky structure; very firm; earthy and smooth-ped fabric; 5-10% <5mm cracks; 2-5% 0.075-1mm pores; few very fine roots; pH 8.5; plough sole,
A ₁ 10-120	(2; 10-20) Very dark grey (10YR3/1) medium heavy clay; moderate 20-50mm angular blocky structure, breaking to moderate 5-10mm angular blocky structure; moderately strong; smooth-ped and polished ped fabric; 2-5% 5-10mm cracks; 2-5% 0.075-1mm pores; few very fine roots; pH 9.0;
A ₁ k	(3; 30-40) Very dark grey (10YR3/1) medium heavy clay; strong 10-20mm angula

blocky structure, breaking to strong 5–10mm wedge structure; very firm; weak slickensides, smooth–ped and polished ped fabric; <2% distinct fine white (10YR8/2) calcareous nodules; 2–5% 5–10mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 9.0;

A₁k

(4; 70–80) Very dark grey (10YR3/1) medium heavy clay; moderate 10–20mm angular blocky structure, breaking to moderate 5–10mm angular blocky structure; very firm; weak slickensides, smooth–ped and polished ped fabric; <2% distinct fine white (10YR8/2) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 9.0;

B₂k

120+

(5; 120–130) Dark brown (10YR3/3) medium clay; 2–10% prominent coarse dark grey (10YR4/1) flecks produced by faunal mixing; weak 50–100mm subangular blocky structure, breaking to moderate 5–10mm wedge structure; moderately firm; nodular fracture; smooth–ped and polished ped fabric; <2% distinct fine white (10YR8/2) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 9.0;

B₂f

(6; 250–260) Yellowish brown (10YR5/4) medium heavy clay; <2% prominent medium yellowish red (5YR5/8) mottles; 10–20% distinct coarse very dark greyish brown (10YR3/2) patches of soil, filling cracks; moderate 10–20mm angular blocky structure, with moderate 5–10mm wedge structure; moderately firm; weak slickensides, smooth–ped and polished ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; pH 8.8;

Parent rock: alluvial sediment, clay

Comments

One calcium carbonate angular lump at 260cm, and few ferruginous soft segregations, also at 260.

Soil classification

Principal profile form: Ug5.15

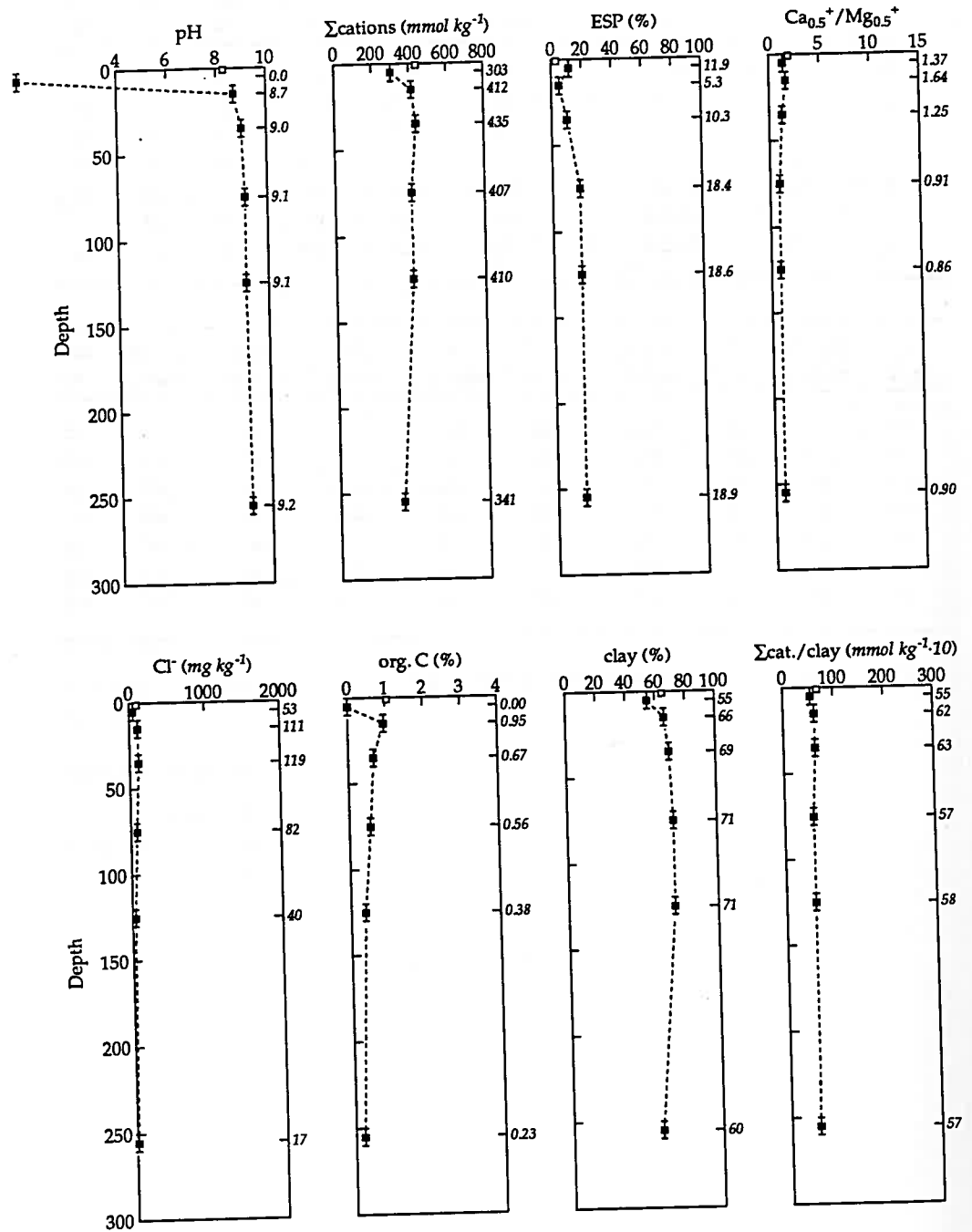
Great soil group: Brown clays

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. mS m ⁻¹	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ p	0-2	8.3	26.0	1.05	0.2	14	19	65
1	A ₁ p	0-10	<0.1	<0.1	<0.01	<0.1	22	22	55
2	A ₁	10-20	8.7	12.8	0.95	0.2	12	19	66
3	A ₁ k1	30-40	9.0	17.9	0.67	0.4	10	19	69
4	A ₁ k2	70-80	9.1	26.8	0.56	0.8	7	20	71
5	B ₂ k	120-130	9.1	27.1	0.38	0.6	7	22	71
6	B ₂ f	250-260	9.2	24.8	0.23	0.9	16	23	60

Cl ⁻ mg kg ⁻¹	NO ₃ ⁻ -N mg kg ⁻¹	P mg kg ⁻¹	Ca _{0.5} ⁺ mmol kg ⁻¹	Mg _{0.5} ⁺ mmol kg ⁻¹	K ⁺ mmol kg ⁻¹	Na ⁺ mmol kg ⁻¹	Al _{0.33} ⁺ mmol kg ⁻¹	Σcations mmol kg ⁻¹	ESP %
98	-	-	268	140	16.5	14.0	<1	438	3.2
53	0.4	23	152	111	4.1	35.9	<1	303	11.9
111	0.6	18	237	144	9.1	21.7	<1	412	5.3
119	0.4	14	213	170	6.6	44.9	<1	435	10.3
82	2.4	46	154	169	8.1	75.0	<1	407	18.4
40	23.2	51	150	175	8.3	76.2	<1	410	18.6
17	6.9	34	128	143	5.9	64.6	<1	341	18.9

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed198

Site location

Grid reference: 753700mE 6651350mN

Elevation: 201m

Farmer: W.S.(Bill) Carberry

Farm name: Cadarga

Site described by G. M. Roberts on 24 June, 1985

The site is located at a grid point

Site description

Slope: 2° Slope direction: 010°

Topography: gently undulating

Landform: levee

Surface dry when sampled

Fine self-mulching surface, trampled

Use: native pasture, wheat, irrigated cotton

Visible cracks: width 1mm, 2 per metre, depth 1200mm

Site comments

Extremely large cracks. Difficult soil recovery.

Site vegetation

The site included bare ground.

The following species were noted:

Eucalyptus camaldulensis, *Paspalidium*, *Bassia quinquecuspis*.

Profile description

Soil described by G. M. Roberts on 4 September, 1985. Drilled depth 269cm

Horizon (cm)	(Sample; depth)
A _{1p} 0-10	(1; 0-10) Very dark greyish brown (10YR3/2, 10YR5/2 dry) light medium clay; moderate 2-5mm subangular blocky structure; very firm; earthy fabric; 5-10% 10-20mm cracks; 2-5% 0.075-1mm pores; few very fine roots; pH 6.5; plough sole,
A ₁ 10-178	(2; 10-20) Very dark greyish brown (10YR3/2) medium heavy clay; moderate 20-50mm subangular blocky structure; moderately strong; smooth-ped fabric; 2-5% 5-10mm cracks; 2-5% 1-2mm pores; few very fine roots; pH 7.0;
A ₁	(3; 30-40) Very dark greyish brown (10YR3/2) medium heavy clay; moderate 20-50mm angular blocky structure, breaking to moderate 5-10mm angular blocky structure; moderately strong; smooth-ped fabric; 2-5% <5mm cracks; 2-5% 0.075-1mm pores; few very fine roots; pH 8.0;

- A₁k (4; 70–80) Very dark greyish brown (10YR3/2) medium heavy clay; 2–10% distinct medium brown (10YR5/3) patches of soil, filling cracks; moderate 50–100mm angular blocky structure, breaking to moderate 5–10mm angular blocky structure; moderately strong; weak slickensides, smooth-ped and polished ped fabric; <2% distinct medium very pale brown (10YR8/3) calcareous nodules; 2–5% 5–10mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 8.5;
- A₁k (5; 120–130) Very dark greyish brown (10YR3/2) heavy clay; weak >100mm subangular blocky structure, breaking to moderate 5–10mm angular blocky structure; very strong; weak slickensides, nodular fracture; smooth-ped and polished ped fabric; <2% distinct fine very pale brown (10YR8/3) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.5;
- B₂k 178+ (6; 250–260) Dark brown (7.5YR4/2) medium heavy clay; moderate 10–20mm angular blocky structure; very firm; weak slickensides, smooth-ped and polished ped fabric; <2% distinct fine very pale brown (10YR8/3) calcareous nodules; <2% distinct fine dark brown (7.5YR4/4) ferruginous veins; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 20–60mm rounded quartz fragments; pH 8.7; genetic boundary, gradual, smooth change to

Parent rock: alluvial sediment, clay

Comments

Inwashed sands on ped faces in upper part of first metre.

Soil classification

Principal profile form: Ug5.15

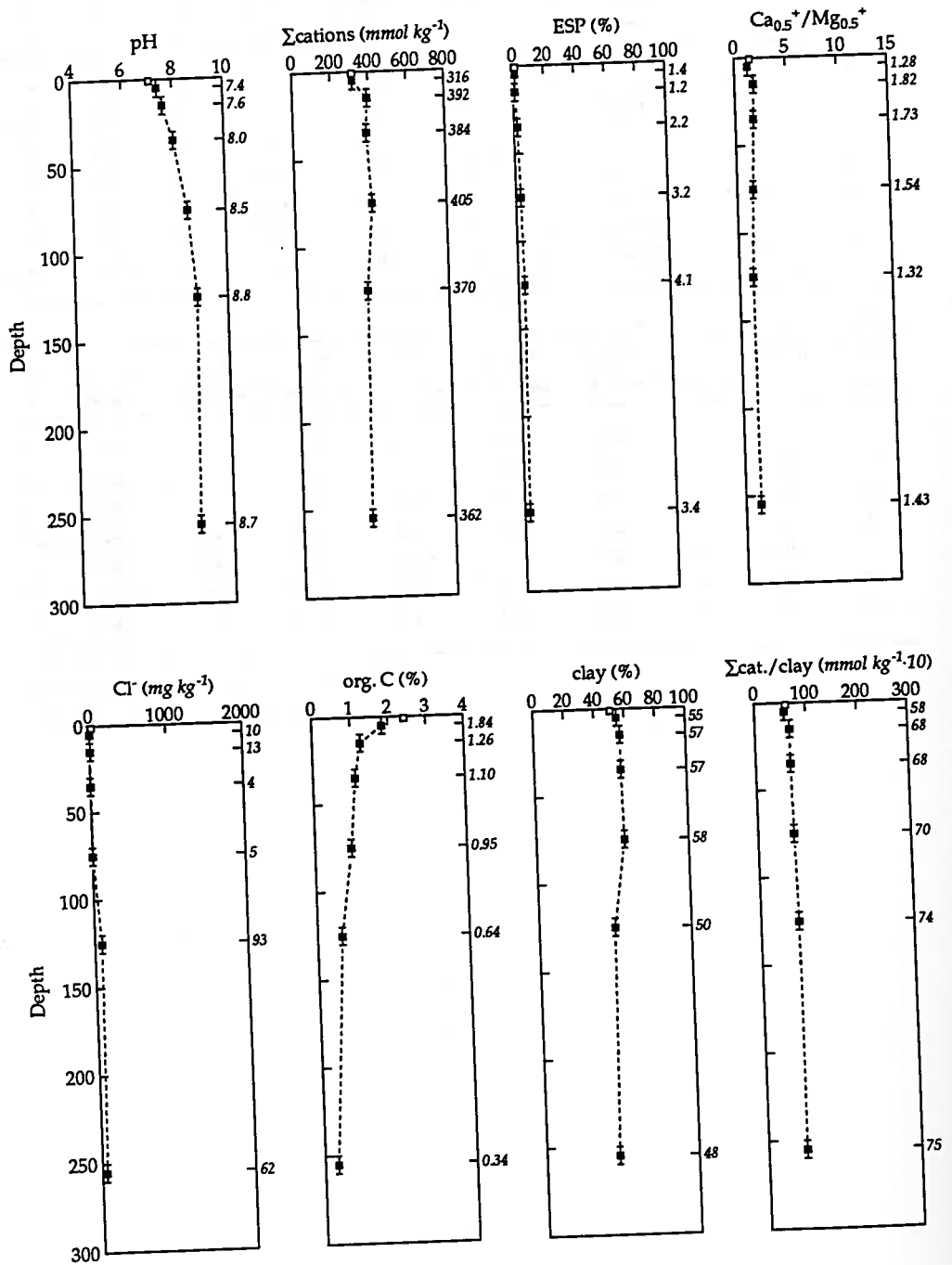
Great soil group: Brown clays

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. $mS\ m^{-1}$	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ p	0-2	7.1	13.8	2.43	<0.1	17	27	51
1	A ₁ p	0-10	7.4	11.6	1.84	<0.1	14	28	55
2	A ₁ 1	10-20	7.6	5.3	1.26	<0.1	15	26	57
3	A ₁ 2	30-40	8.0	4.6	1.10	<0.1	14	27	57
4	A ₁ k1	70-80	8.5	5.8	0.95	<0.1	13	27	58
5	A ₁ k2	120-130	8.8	7.1	0.64	0.2	20	28	50
6	B ₂ k	250-260	8.7	10.8	0.34	1.3	20	30	48

Cl ⁻ $mg\ kg^{-1}$	NO ₃ ⁻ -N $mg\ kg^{-1}$	P $mg\ kg^{-1}$	Ca _{0.5} ⁺ $mmol\ kg^{-1}$	Mg _{0.5} ⁺ $mmol\ kg^{-1}$	K ⁺ $mmol\ kg^{-1}$	Na ⁺ $mmol\ kg^{-1}$	Al _{0.33} ⁺ $mmol\ kg^{-1}$	Σcations $mmol\ kg^{-1}$	ESP %
33	-	-	176	119	16.0	4.1	<1	315	1.3
10	1.6	87	169	133	9.7	4.3	<1	316	1.4
13	0.6	25	246	135	5.5	4.7	<1	392	1.2
4	0.2	17	235	136	4.5	8.3	<1	384	2.2
5	<0.1	38	235	153	4.5	13.0	<1	405	3.2
93	4.3	41	199	151	4.2	15.2	<1	370	4.1
62	4.7	25	203	142	4.4	12.4	<1	362	3.4

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed199

Site location

Grid reference: 756400mE 6651400mN

Farmer: Clive Norrie

Site described by G. M. Roberts on 24 July, 1985

The site is located at a grid point

Elevation: 202m

Farm name: Mollee

Site description

Slope: 1° Slope direction: 180°

Topography: gently undulating

Landform: middle terrace

Surface dry when sampled

Loose surface, cultivated

Use: wheat, cattle pasture, sheep pasture

Visible cracks: width 1mm

Site comments

This soil has hard clods and could be hard setting. The site is an old infilled lagoon or back swamp. A prominent sand layer, 800mm thick, occurs at 140cm.

Site vegetation

The site was under wheat.

The following species were noted:

Eucalyptus camaldulensis.

Profile description

Soil described by W. T. Ward on 26 June, 1985. Drilled depth 299cm

Horizon (cm)	(Sample; depth)
A _{1p} 0-10	(1; 0-10) Dark brown (7.5YR3/2, 7.5YR4/2 dry) silty clay; moderate 2-5mm granular structure, with weak 10-20mm subangular blocky structure; moderately firm; smooth-ped fabric; 2-5% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 6.5; plough sole, abrupt, wavy change to
A ₁ 10-20	(2; 10-20) Dark brown (7.5YR4/2) light medium clay; <2% distinct medium reddish yellow (5YR6/6) inherited stains; weak 50-100mm angular blocky structure; moderately strong; smooth fracture; smooth-ped fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; <2% 2-6mm subrounded ?baked clay; pH 7.0; stratigraphic boundary, abrupt, smooth change to

2A ₁	20-135	(3; 30-40) Very dark grey (10YR3/1) medium clay; moderate 10-20mm polyhedral structure; moderately strong; smooth-ped fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 7.8;
2A ₁		(4; 70-80) Very dark grey (10YR3/1) medium heavy clay; moderate 20-50mm polyhedral structure; moderately strong; smooth-ped fabric; <2% <5mm cracks; few very fine roots; pH 8.5;
2A _{1v}		(5; 120-130) Dark greyish brown (10YR4/2) medium clay; <2% distinct medium yellowish brown (10YR5/4) flecks produced by faunal mixing; weak 20-50mm prismatic structure, breaking to moderate 10-20mm angular blocky structure; moderately strong; smooth-ped fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 9.0; genetic boundary, gradual, smooth change to
2B ₂	135-210	(6; 170-180) Brown (10YR4/3) fine sandy clay; <2% distinct medium dark grey (10YR4/1) organic stains; weak 20-50mm prismatic structure, breaking to moderate 10-20mm angular blocky structure; moderately firm; smooth fracture; smooth-ped fabric; <2% <5mm cracks; <2% 0.075-1mm pores; few very fine roots; pH 8.5; genetic boundary, clear, smooth change to
2C	210+	(7; 250-260) Brown (10YR5/3) light medium clay; 2-10% distinct medium dark grey (10YR4/1) organic stains; weak 20-50mm prismatic structure, breaking to weak 5-10mm angular blocky structure; very firm; smooth fracture; smooth-ped fabric; <2% <5mm cracks; <2% 0.075-1mm pores; pH 8.5; stratigraphic boundary, abrupt, smooth change to

Parent rock: alluvial sediment, mixed texture, non-calcareous, clay

Comments

Cultivated top included in 199.01. 10-20 has ?baked clay fragments (compare site 179) of colour two. Some fragments of charcoal at 18cm. 0-20 is young brown recent flood deposit. A prominent stained buried topsoil at 260, with moderate polyhedral structure and heavy organic carbon stain at 260. Although no carbonate is visible we obtain effervescence with HCl at 110-140, but not elsewhere. Alluvial soil (WTW).

Soil classification

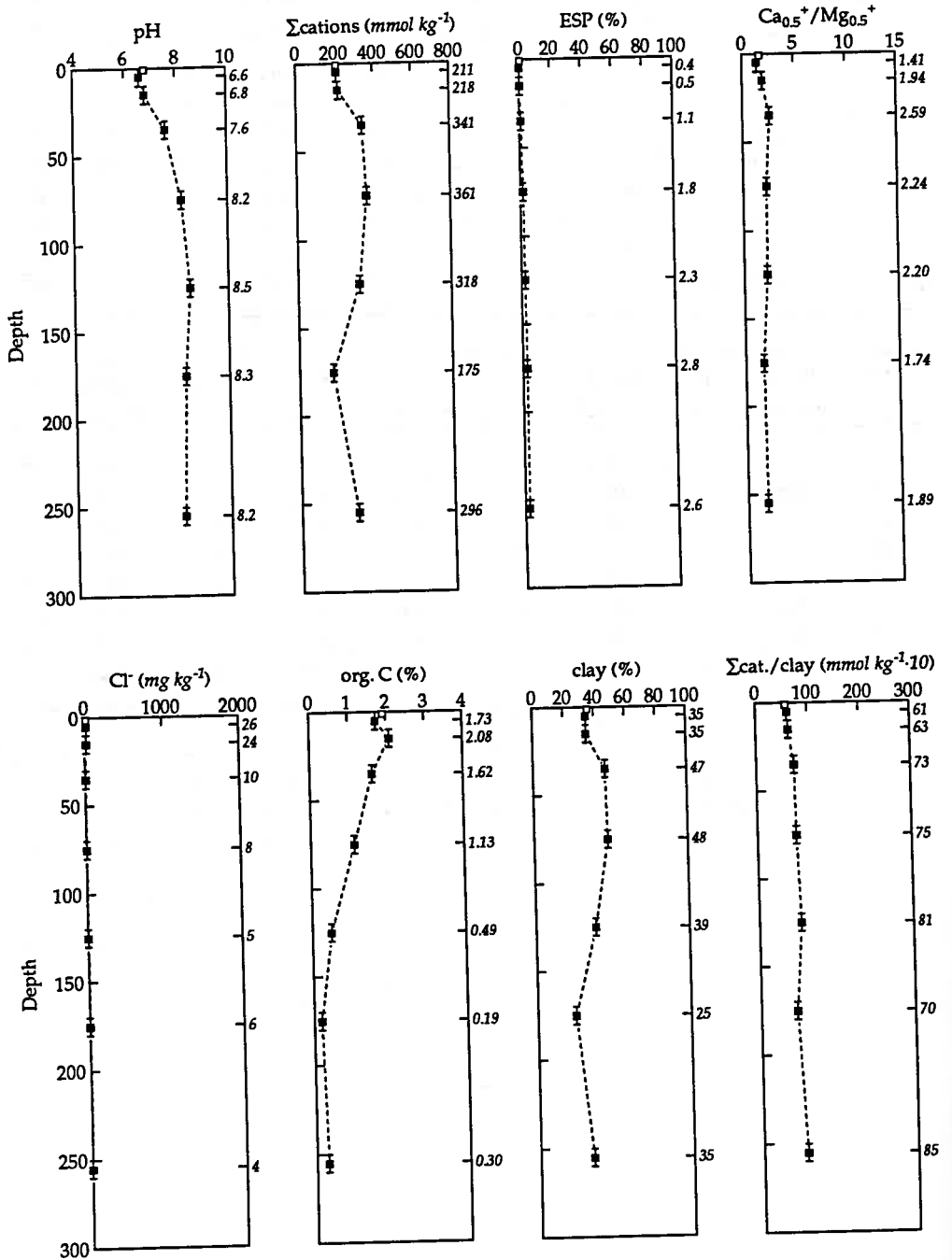
Principal profile form: Ug5.17
 Great soil group: Prairie soils
 Soil taxonomy unit: Ustifluvents

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. mS m ⁻¹	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ p	0-2	6.8	7.4	1.92	<0.1	37	24	36
1	A ₁ p	0-10	6.6	9.8	1.73	<0.1	40	22	35
2	A ₁	10-20	6.8	6.6	2.08	<0.1	41	21	35
3	2A ₁ 1	30-40	7.6	5.2	1.62	<0.1	27	23	47
4	2A ₁ 2	70-80	8.2	5.6	1.13	<0.1	24	25	48
5	2A ₁ v	120-130	8.5	10.9	0.49	0.4	39	21	39
6	2B ₂	170-180	8.3	4.2	0.19	<0.1	64	11	25
7	2C	250-260	8.2	4.4	0.30	<0.1	45	20	35

Cl ⁻ mg kg ⁻¹	NO ₃ ⁻ -N mg kg ⁻¹	P mg kg ⁻¹	Ca _{0.5} ⁺ mmol kg ⁻¹	Mg _{0.5} ⁺ mmol kg ⁻¹	K ⁺ mmol kg ⁻¹	Na ⁺ mmol kg ⁻¹	Al _{0.33} ⁺ mmol kg ⁻¹	Σcations mmol kg ⁻¹	ESP %
21	-	-	120	72	17.0	1.5	<1	210	0.7
26	4.6	106	115	81	14.4	0.8	<1	211	0.4
24	5.7	76	138	71	8.3	1.2	<1	218	0.5
10	1.1	64	239	92	6.1	3.9	<1	341	1.1
8	0.5	67	241	108	5.5	6.5	<1	361	1.8
5	0.2	66	210	95	5.4	7.2	<1	318	2.3
6	0.2	59	105	61	3.6	4.9	<1	175	2.8
4	0.1	58	186	98	3.8	7.8	<1	296	2.6

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed200

Site location

Grid reference: 759200mE 6651250mN
Farmer: C. Freer
Site described by D. Page on 2 May, 1985
The site is located at a grid point

Elevation: 204m
Farm name: Alooomba

Site description

Slope: 0°
Landform: floodplain, subject to ponding
Surface dry when sampled
Firm surface, trampled
Use: cattle pasture
Visible cracks: 1 per metre

Topography: flat

Site comments

Proline. Dense at depth. 60 degrees mag. to house at top of slope, car bodies nearby.
Vegetation identification doubtful, should be repeated.

Site vegetation

The following species were noted:

Digitaria ammophila, *Bassia quinquecuspis*.

Profile description

Soil described by G. M. Roberts on 16 October, 1985. Drilled depth 273cm

Horizon (cm)	(Sample; depth)
A ₁ 0-50	(1; 0-10) Dark greyish brown (10YR4/2, 10YR7/3 dry) silty clay loam; 10-20% distinct medium very dark grey (10YR3/1) organic stains; weak 20-50mm subangular blocky structure, breaking to moderate 5-10mm subangular blocky structure; very strong; earthy fabric; 5-10% <5mm cracks; 5-10% 0.075-1mm pores few very fine roots; <2% 2-6mm angular tabular sandstone fragments; pH 7.2;
A ₁	(2; 10-20) Dark brown (10YR3/3) light medium clay; moderate 20-50mm angular blocky structure; very strong; earthy fabric; 5-10% <5mm cracks; 2-5% 0.075-1mm pores; few very fine roots; pH 8.0;
A ₁	(3; 30-40) Dark greyish brown (10YR4/2) medium clay; 2-10% faint fine pale brown (10YR6/3) patches of soil, filling cracks; moderate 2-5mm subangular blocky structure; very strong; earthy fabric; 5-10% <5mm cracks; 2-5% 0.075-1mm

		pores; common very fine roots; pH 8.7; genetic boundary, clear, smooth change to
B ₂	50-70	(4; 60-70) Dark brown (10YR3/3) medium heavy clay; 10-20% distinct medium yellowish brown (10YR5/4) patches of soil, filling cracks; moderate 10-20mm subangular blocky structure; moderately strong; earthy fabric; 2-5% <5mm cracks; 2-5% 0.075-1mm pores; common very fine roots; pH 8.7; stratigraphic boundary, clear, smooth change to
2A ₁	70-90	(5; 70-80) Dark brown (10YR3/3) silty clay loam; 10-20% distinct coarse brown (10YR4/3) patches of soil, filling cracks; moderate 20-50mm subangular blocky structure; moderately strong; earthy fabric; <2% <5mm cracks; 2-5% 0.075-1mm pores; pH 8.7; genetic boundary, gradual, smooth change to
2B ₂	90+	(6; 120-130) Dark brown (10YR3/3) medium clay; 10-20% distinct coarse brown (10YR5/3) patches of soil, filling cracks; weak 50-100mm subangular blocky structure; moderately strong; earthy fabric; <2% faint coarse very dark grey (10YR3/1) calcareous nodules; <2% <5mm cracks; 2-5% 0.075-1mm pores; pH 8.7;
2B ₂		(7; 250-260) Dark brown (10YR3/3) medium heavy clay; 10-20% distinct coarse brown (10YR5/3) patches of soil, filling cracks; weak 50-100mm subangular blocky structure; moderately strong; weak slickensides, earthy fabric; <2% faint very coarse very dark grey (10YR3/1) calcareous nodules; <2% <5mm cracks; 2-5% 0.075-1mm pores; pH 8.7;

Parent rock: alluvial sediment, mixed texture, non-calcareous

Comments

A few cast granules in 200.03. Carbonate in fine earth below 80cm. The infilled material is very fine silt in fine bands. The horizon differentiation between .05 and .06 is based solely on texture. Evident depositional foreset bedding at 160-180.

Soil classification

Principal profile form: Db1.13

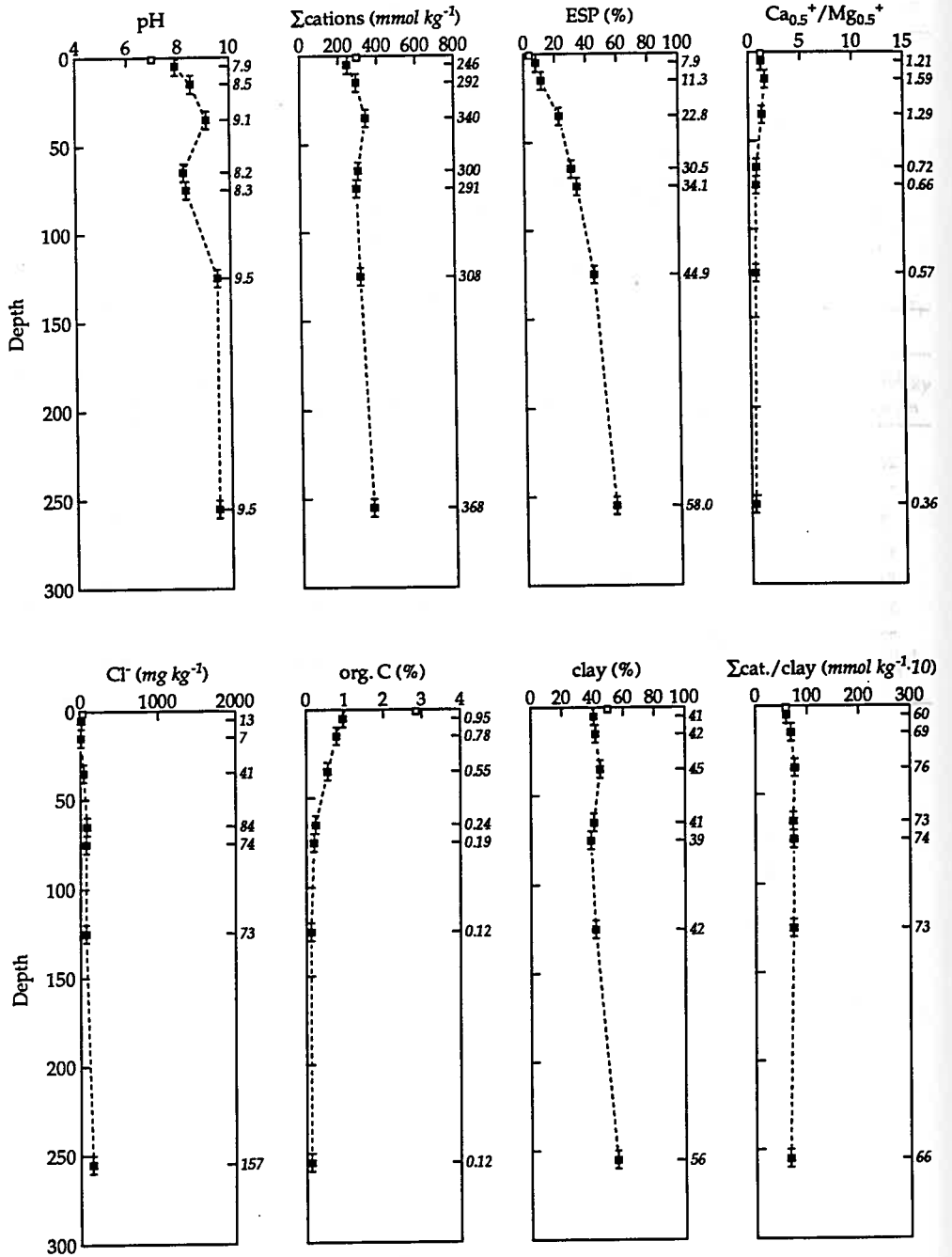
Great soil group: Alluvial soils

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. $mS\ m^{-1}$	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ 1	0-2	7.0	18.8	2.85	<0.1	13	32	50
1	A ₁ 1	0-10	7.9	11.3	0.95	<0.1	29	28	41
2	A ₁ 2	10-20	8.5	11.1	0.78	<0.1	28	28	42
3	A ₁ 3	30-40	9.1	29.6	0.55	<0.1	25	30	45
4	B ₂	60-70	8.2	188.3	0.24	2.5	26	30	41
5	2A ₁	70-80	8.3	178.4	0.19	1.5	28	30	39
6	2B ₂ 1	120-130	9.5	83.2	0.12	2.9	27	28	42
7	2B ₂ 2	250-260	9.5	54.2	0.12	0.3	16	27	56

Cl ⁻ $mg\ kg^{-1}$	NO ₃ ⁻ -N $mg\ kg^{-1}$	P $mg\ kg^{-1}$	Ca _{0.5} ⁺ $mmol\ kg^{-1}$	Mg _{0.5} ⁺ $mmol\ kg^{-1}$	K ⁺ $mmol\ kg^{-1}$	Na ⁺ $mmol\ kg^{-1}$	Al _{0.33} ⁺ $mmol\ kg^{-1}$	Σcations $mmol\ kg^{-1}$	ESP %
28	-	-	146	123	16.7	10.9	<1	296	3.7
13	12.9	43	120	99	7.1	19.4	<1	246	7.9
7	6.3	27	156	98	4.9	33.1	<1	292	11.3
41	2.1	19	146	113	3.8	77.4	<1	340	22.8
84	26.8	19	86	119	4.0	91.4	<1	300	30.5
74	31.1	19	75	113	4.0	99.1	<1	291	34.1
73	8.4	20	60	106	4.3	138.3	<1	308	44.9
157	1.6	41	39	110	4.9	213.4	<1	368	58.0

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed201

Site location

Grid reference: 762000mE 6651200mN
 Farmer: Peter Wall
 Site described by D. McGarry on 28 May, 1985
 The site is located at a grid point

Elevation: 209m
 Farm name: Woolangabba

Site description

Slope: 0°
 Landform: middle terrace
 Surface dry when sampled
 Coarse self-mulching surface, cultivated
 Use: wheat, fallow
 Visible cracks: width 1mm

Topography: flat

Site comments

Waterworn quartz gravels on surface (80mm dia). This area floods from the stream to the south of here. Good depth of self mulching topsoil (8 cm deep).

Site vegetation

The site was under safflower.

Profile description

Soil described by D. McGarry on 4 June, 1986. Drilled depth 267cm

Horizon (cm)	(Sample; depth)
A ₁ 0-175	(1; 0-10) Very dark grey (10YR3/1) light clay; weak 10-20mm subangular blocky structure; moderately firm; rough fracture; smooth-ped fabric; <2% <5mm cracks; <2% 0.075-1mm pores; <2% 2-6mm subangular tabular quartz fragments; pH 8.7;
A ₁	(2; 10-20) Very dark grey (10YR3/1) light medium clay; <2% distinct fine pale brown (10YR6/3) patches of sediment, filling cracks; weak 20-50mm subangular blocky structure; moderately firm; rough fracture; smooth-ped fabric; <2% fine calcareous nodules; <2% <5mm cracks; <2% 0.075-1mm pores; <2% 2-6mm subangular tabular quartz fragments; pH 8.7;
A ₁	(3; 30-40) Very dark grey (10YR3/1) medium heavy clay; 2-10% distinct fine light brownish grey (10YR6/2) patches of sediment, filling cracks; moderate 20-50mm lenticular structure, breaking to moderate 5-10mm angular blocky structure; very firm; smooth-ped and polished ped fabric; <2% distinct fine very pale brown (10YR8/4) calcareous nodules; <2% <5mm cracks; <2% 0.075-1mm pores; few very

fine roots; pH 8.8;

- A₁ (4; 70–80) Very dark grey (10YR3/1) medium clay; moderate 20–50mm angular blocky structure; moderately strong; smooth–ped fabric; <2% distinct fine very pale brown (10YR8/4) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 6–20mm rounded basalt fragments; pH 9.0;
- A₁ (5; 120–130) Dark grey (10YR4/1) medium heavy clay; 2–10% distinct fine very pale brown (10YR7/3) patches of sediment, filling cracks; weak 50–100mm subangular blocky structure; very strong; smooth fracture; smooth–ped fabric; <2% distinct fine white (10YR8/1) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; pH 9.0; genetic boundary, clear, smooth change to
- B₂ 175+ (6; 250–260) Brown (7.5YR5/4) light clay; 2–10% prominent coarse very dark grey (10YR3/1) flecks produced by faunal mixing; weak 50–100mm prismatic structure, breaking to moderate 20–50mm angular blocky structure; very firm; smooth fracture; smooth–ped fabric; 10–20% prominent very coarse light grey (10YR7/2) calcareous soft segregations; <2% <5mm cracks; <2% 0.075–1mm pores; <2% 20–60mm subangular tabular rock fragments; pH 9.0;

Parent rock: alluvial sediment, mixed texture, with lime

Comments

Top 2cm of the profile is loose, but would have been attached to rest of soil in field. Not a good self mulching soil, appears a little puddled. Note carbonate high in the profile. Large amounts of inwashed sand from 25cm, with a horizontal axis as silting on lens faces (ped faces). From 190 large amounts of soft carbonate mainly in vertical channels. From 190 gravels present – various types <1% of total soil volume, randomly located. Sand infills continue to 267cm, but diminish below 150cm. Similar to MVpH but deeper topsoil.

Soil classification

Principal profile form: Ug5.16
Great soil group: Grey clays
Soil taxonomy unit: Pellusterts

Soil chemical and particle-size analyses

Sample	Horizon	Depth cm	pH	E. C. mS m ⁻¹	org. C %	CaCO ₃ %	sand %	silt %	clay %
0	A ₁ 1	0-2	8.5	18.2	1.30	0.4	16	22	59
1	A ₁ 1	0-10	8.8	22.4	0.83	1.2	26	19	52
2	A ₁ 2	10-20	9.1	25.6	0.62	1.8	28	19	50
3	A ₁ 3	30-40	9.3	38.9	0.61	2.3	30	19	47
4	A ₁ 4	70-80	9.4	73.6	0.42	1.5	34	19	45
5	A ₁ 5	120-130	9.6	69.5	0.30	0.9	41	19	38
6	B ₂	250-260	9.8	65.5	0.06	4.9	49	17	28

Cl ⁻ mg kg ⁻¹	NO ₃ ⁻ -N mg kg ⁻¹	P mg kg ⁻¹	Ca _{0.5} ⁺ mmol kg ⁻¹	Mg _{0.5} ⁺ mmol kg ⁻¹	K ⁺ mmol kg ⁻¹	Na ⁺ mmol kg ⁻¹	Al _{0.33} ⁺ mmol kg ⁻¹	Σcations mmol kg ⁻¹	ESP %
23	-	-	268	124	19.4	12.3	<1	423	2.9
20	1.1	12	260	130	15.1	30.1	<1	434	6.9
29	4.2	9	232	152	10.1	46.1	<1	441	10.5
124	5.3	9	186	147	8.7	76.3	<1	417	18.3
390	<0.1	14	87	157	9.4	129.1	<1	383	33.7
302	<0.1	21	64	133	8.8	112.3	<1	319	35.3
262	<0.1	14	51	110	5.5	92.2	<1	258	35.7