B_2	165+	(6; 250–260) Dark brown (7.5YR4/4) medium clay; weak 20–50mm subangular blocky structure; very firm; rough fracture; rough–ped and smooth–ped fabric; 2–10% distinct coarse very dark grey (5YR3/1) clayey veins; <2% <5mm cracks; <2% 0.075–1mm pores; pH 9.5;

Parent rock: alluvial sediment, clay

Comments

Soil moist under surface. The profile is very wet throughout. This may have added to its almost complete lack of structure, even in the B2 horizon. No carbonate. This profile still classes as a Ug5.15 since this is how it would appear in a dry state.

Soil classification

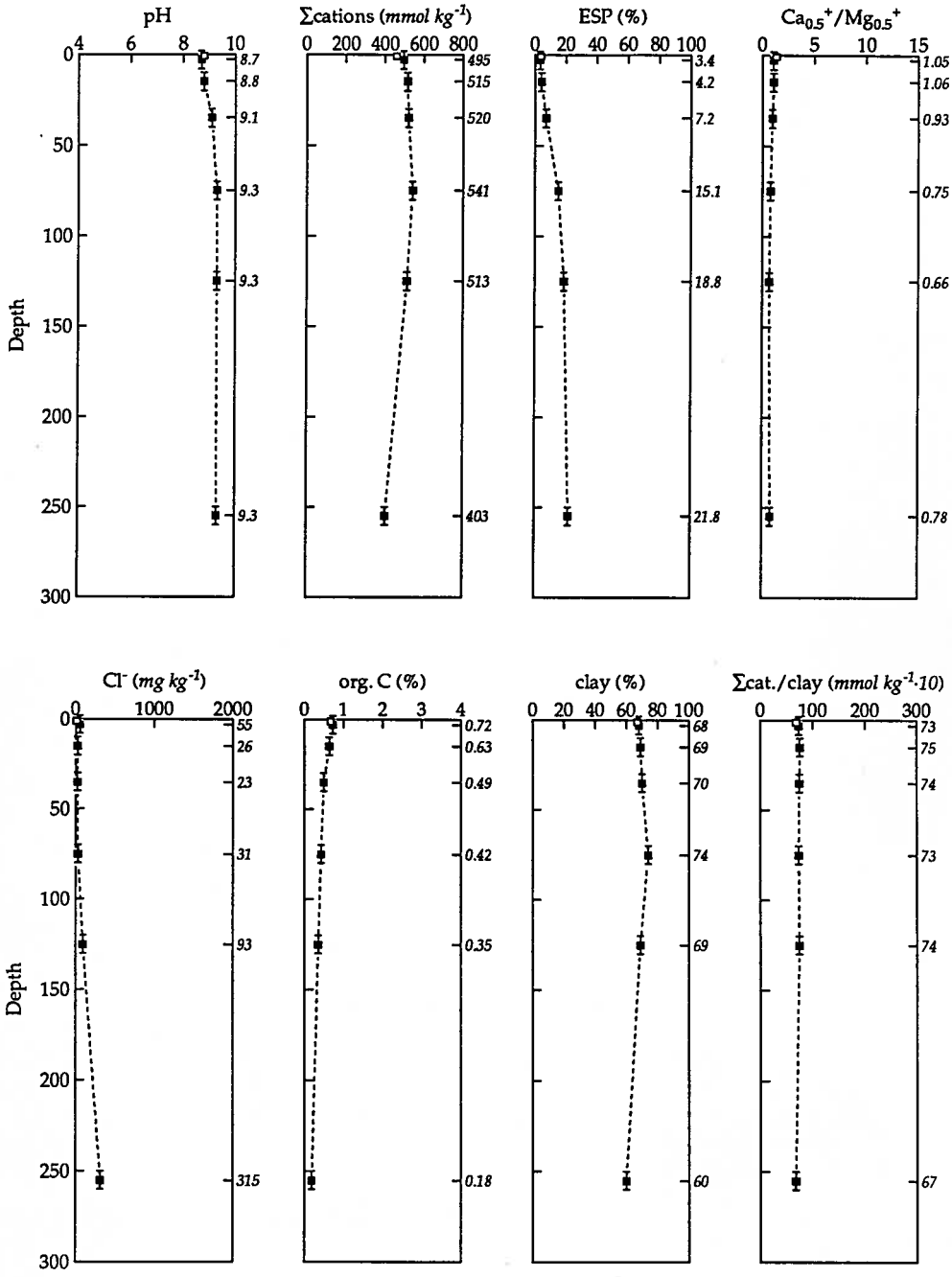
Principal profile form: Ug5.15
Great soil group: Grey clays

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_1P	0–2	8.8	10.2	0.66	<0.1	13	19	67
1	A_1P	0–6	8.7	15.5	0.72	0.1	15	16	68
2	A_11	10–20	8.8	11.7	0.63	0.1	13	17	69
3	A_12	30–40	9.1	16.4	0.49	0.3	12	17	70
4	A_13	70–80	9.3	25.7	0.42	0.8	6	18	74
5	A_14	120–130	9.3	36.9	0.35	0.5	11	19	69
6	B_2	250–260	9.3	50.7	0.18	2.0	17	21	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 %
11	–	–	238	181	20.7	17.2	<1	458	3.8
55	2.1	46	241	230	7.9	16.8	<1	495	3.4
26	0.2	47	248	234	12.1	21.6	<1	515	4.2
23	0.2	39	228	245	10.3	37.2	<1	520	7.2
31	0.2	47	192	257	11.1	81.6	<1	541	15.1
93	24.0	49	162	245	8.7	96.6	<1	513	18.8
315	2.1	26	136	175	3.8	87.9	<1	403	21.8

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed164

Site location

Grid reference: 756600mE 6656100mN
Elevation: 204m
Farmer: Auscott Ltd
Farm name: Auscott
Site described by D. McGarry on 24 April, 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: fallow, irrigated cotton
Visible cracks: width 1mm

Site vegetation

The site was under cotton, and included bare ground.

Profile description

Soil described by G. M. Roberts on 30 April, 1985. Drilled depth 269cm

Horizon	(cm)	(Sample; depth)
A_1p	0–56	(1; 0–10) Dark greyish brown (10YR4/2, 10YR5/2 dry) medium clay; moderate 5–10mm subangular blocky structure; very firm; earthy fabric; <2% distinct fine very pale brown (10YR8/3) calcareous nodules; pH 8.0;
A_1p		(2; 10–20) Dark greyish brown (10YR4/2, 10YR5/2 dry) medium clay; moderate 5–10mm subangular blocky structure; very firm; earthy fabric; <2% distinct fine very pale brown (10YR8/3) calcareous nodules; pH 8.5;
A_1p		(3; 30–40) Dark greyish brown (10YR4/2) medium heavy clay; <2% distinct fine yellowish brown (10YR5/4) mottles; apedal massive; moderately firm; smooth fracture; earthy fabric; <2% fine calcareous nodules; <2% <5mm cracks; pH 8.5; genetic boundary, diffuse, smooth change to
B_2	56–147	(4; 70–80) Dark greyish brown (10YR4/2) medium heavy clay; 10–20% prominent medium yellowish brown (10YR5/6) patches of sediment, filling cracks; weak 20–50mm subangular blocky structure; moderately weak; smooth fracture; smooth-ped and sandy fabric; <2% distinct medium very pale brown (10YR8/3) calcareous nodules; <2% fine manganese nodules; pH 8.8;
C_1		(5; 120–130) Yellowish brown (10YR5/6) coarse sandy clay; 2–10% distinct medium

dark greyish brown (10YR4/2) patches of soil, filling cracks; apedal massive; moderately weak; smooth fracture; earthy and sandy fabric; <2% fine manganese veins; <2% <5mm cracks; pH 8.5; genetic boundary, clear, smooth change to

C_1 147+ (6; 250–260) Brown (10YR5/3) sandy clay; 20–50% prominent very coarse yellowish brown (10YR5/6) inherited stains; weak 2–5mm biscuitty structure; moderately weak; smooth fracture; earthy and sandy fabric; <2% medium manganese stains; <2% <5mm cracks; 2–5% 0.075–1mm pores; pH 8.5;

Parent rock: alluvial sediment

Soil classification

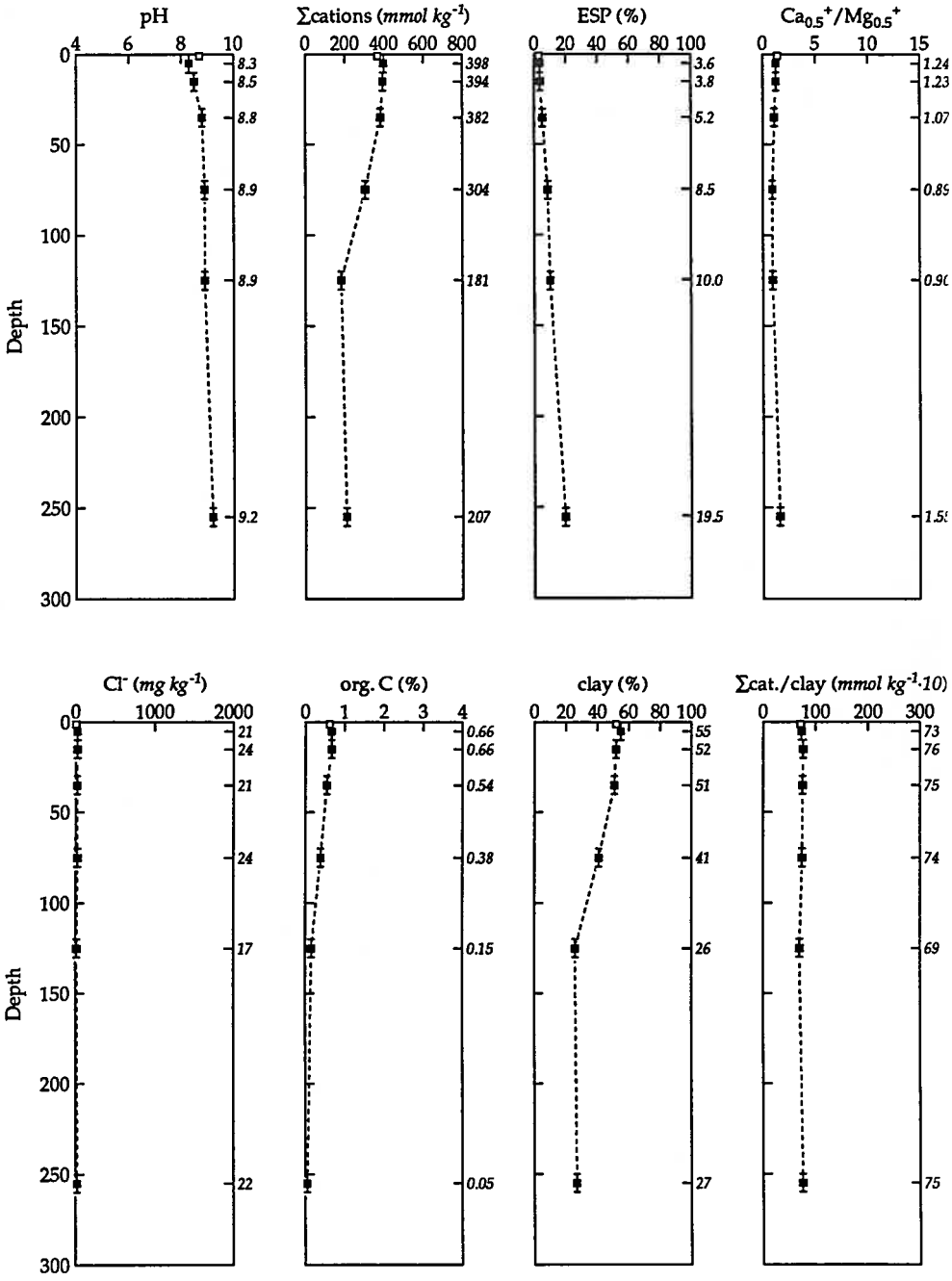
Principal profile form: Ug6.2
Great soil group: Grey clays

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_1p	0–2	8.7	13.7	0.61	0.5	32	15	52
1	A_1p	0–10	8.3	13.4	0.66	0.3	29	15	55
2	A_1p	10–20	8.5	13.4	0.66	0.2	33	13	52
3	A_1p	30–40	8.8	13.5	0.54	0.3	32	15	51
4	B_2	70–80	8.9	15.6	0.38	0.5	45	13	41
5	C_1	120–130	8.9	8.8	0.15	<0.1	65	8	26
6	C_1	250–260	9.2	9.7	0.05	<0.1	65	8	27

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 %
3	–	–	197	144	15.5	11.1	<1	367	3.0
21	21.1	39	204	165	14.4	14.2	<1	398	3.6
24	7.0	36	202	163	13.8	14.9	<1	394	3.8
21	3.4	33	181	170	10.5	19.9	<1	382	5.2
24	2.1	14	128	144	6.7	26.0	<1	304	8.5
17	0.2	20	75	83	4.5	18.1	<1	181	10.0
22	0.2	27	99	64	4.1	40.4	<1	207	19.5

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed165

Site location

Grid reference: 759300mE 6656100mN
Elevation: 207m
Farmer: W.A.(Bill) Cameron
Farm name: Locharba
Site described by G. M. Roberts on 25 March, 1985
The site is located at a grid point

Site description

Slope: 1° Slope direction: 340°
Topography: gently sloping
Landform: low terrace
Surface dry when sampled
Fine self-mulching surface, trampled
Use: sorghum
Visible cracks: width 1mm

Site vegetation

The following species were noted:

?Stipa, Asteraceae, Bassia quinquecuspis, Juncus usitatus.

Profile description

Soil described by G. M. Roberts on 26 April, 1985. Drilled depth 279cm

Horizon	(cm)	(Sample; depth)
A_0	0–5	(1; 0–5) Dark greyish brown (10YR4/2, 10YR6/3 dry) medium clay; moderate 5–10mm subangular blocky structure; moderately firm; earthy fabric; 5–10% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 7.0; stratigraphic boundary, abrupt, smooth change to
A_1	5–58	(2; 5–10) Dark greyish brown (10YR4/2, 10YR6/3 dry) medium clay; moderate 20–50mm angular blocky structure; very firm; smooth-ped and earthy fabric; 5–10% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 7.5;
A_1		(3; 10–20) Very dark greyish brown (10YR3/2) medium heavy clay; 2–10% distinct fine light yellowish brown (10YR6/4) patches of sediment, filling cracks; moderate 50–100mm subangular blocky structure, breaking to moderate 5–10mm angular blocky structure; very strong; smooth-ped and earthy fabric; 2–5% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 7.5;
A_1		(4; 30–40) Very dark greyish brown (10YR3/2) medium clay; moderate 50–100mm subangular blocky structure, breaking to moderate 5–10mm angular blocky structure; moderately strong; smooth-ped and earthy fabric; <2% prominent fine

		white (N8/) gypsum soft segregations; <2% distinct fine very pale brown (10YR8/3) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 2–6mm rounded quartz fragments; pH 8.5;
B_2	58+	(5; 70–80) Brown (10YR4/3) medium heavy clay; moderate prismatic structure, breaking to moderate 5–10mm angular blocky structure; very firm; earthy and smooth-ped fabric; <2% prominent medium white (N8/) gypsum crystals; <2% distinct medium very pale brown (10YR8/3) calcareous nodules; <2% fine manganese stains; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.5;
B_2		(6; 120–130) Brown (10YR5/3) medium heavy clay; 10–20% distinct medium grey (10YR5/1) organic stains; 2–10% distinct fine strong brown (7.5YR4/6) mottles; weak 50–100mm prismatic structure, breaking to moderate 5–10mm angular blocky structure; moderately firm; nodular fracture; smooth-ped fabric; 2–10% coarse calcareous nodules; <2% fine manganese stains; <2% <5mm cracks; <2% 2–5mm pores; few very fine roots; pH 8.5;
B_2		(7; 250–260) Brown (10YR5/3) medium clay; 2–10% distinct medium grey (10YR5/1) organic stains; moderate 10–20mm angular blocky structure; moderately firm; smooth-ped fabric; 2–10% prominent coarse very pale brown (10YR7/3) calcareous nodules; 2–10% medium manganese veins; <2% <5mm cracks; <2% 0.075–1mm pores; pH 8.3;

Soil classification

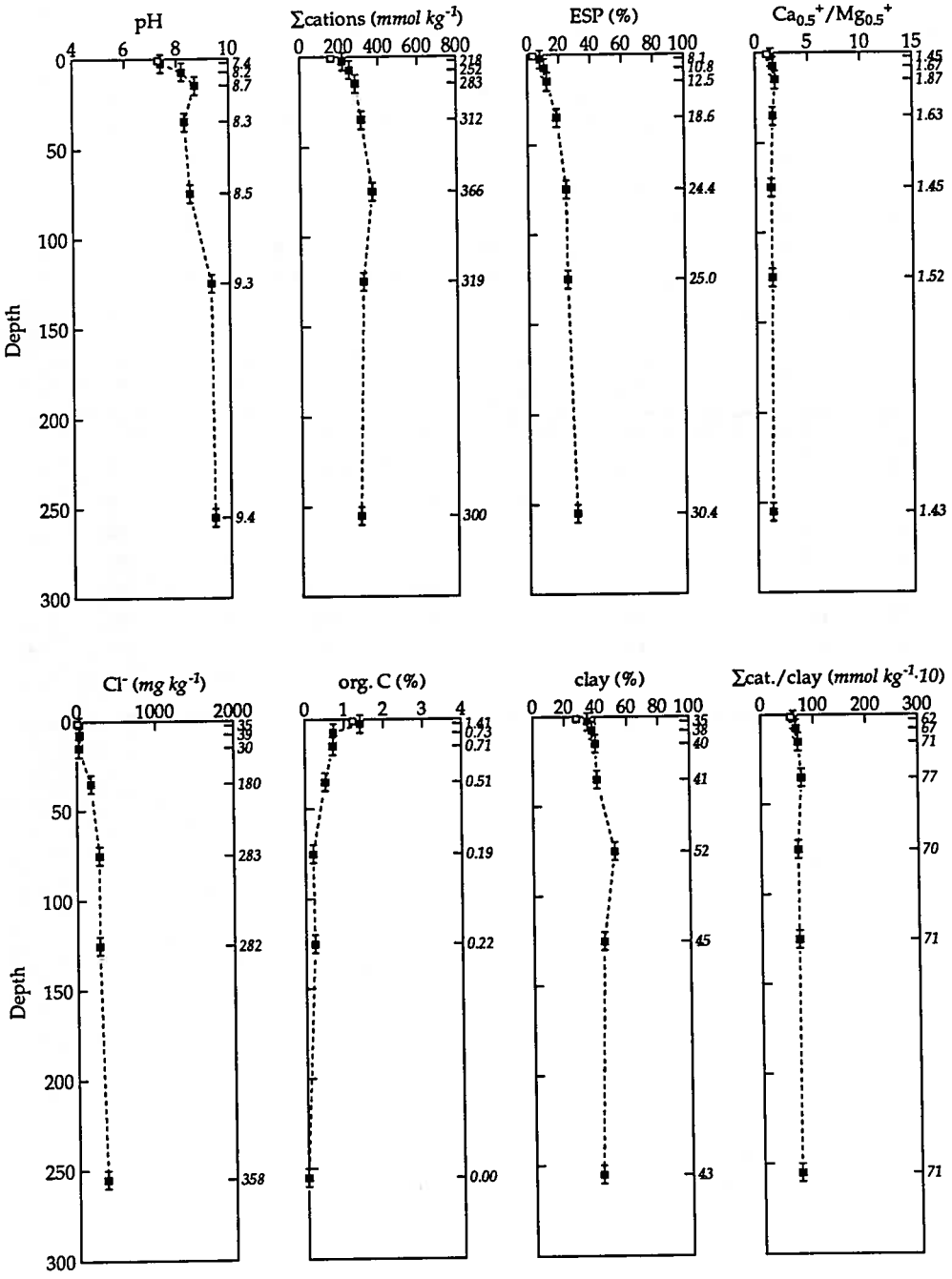
Principal profile form: Ug5.15
Great soil group: Grey clays

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_0	0–2	7.3	7.0	1.22	<0.1	52	18	28
1	A_0	0–5	7.4	21.0	1.41	<0.1	42	21	35
2	$A_1$1	5–10	8.2	15.2	0.73	0.1	39	22	38
3	$A_1$2	10–20	8.7	16.3	0.71	<0.1	35	24	40
4	$A_1$3	30–40	8.3	158.5	0.51	0.6	33	24	41
5	B_2	70–80	8.5	159.5	0.19	1.3	25	21	52
6	B_2	120–130	9.3	83.4	0.22	5.9	32	17	45
7	B_2	250–260	9.4	76.1	<0.01	5.2	33	19	43

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	–	–	75	67	11.7	5.5	<1	159	3.5
35	2.8	20	114	79	8.8	17.6	<1	218	8.1
39	6.9	6	136	81	6.8	27.3	<1	252	10.8
30	5.2	2	158	85	4.8	35.4	<1	283	12.5
180	2.6	2	155	95	4.6	58.1	<1	312	18.6
283	0.2	6	159	110	8.7	89.1	<1	366	24.4
282	0.2	5	139	92	8.1	79.6	<1	319	25.0
358	0.2	2	120	84	5.3	91.4	<1	300	30.4

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed166

Site location

Grid reference: 762100mE 6656000mN
stock route
Site described by G. M. Roberts on 7 May, 1985
The site is located at a grid point

Elevation: 215m
at Blue Hills

Site description

Slope: 0°
Landform: high fan
Surface dry when sampled
Coarse self-mulching surface
Use: stock route
Visible cracks: width 1mm

Topography: flat

Profile description

Soil described by G. M. Roberts on 7 March, 1985. Drilled depth 280cm

Horizon	(cm)	(Sample; depth)
A_1	0–20	(1; 0–10) Very dark greyish brown (10YR3/2, 10YR3/2 dry) light medium clay; moderate 20–50mm subangular blocky structure; moderately weak; rough-ped fabric; 2–5% <5mm cracks; <2% 0.075–1mm pores; common very fine roots; pH 8.2;
A_1		(2; 10–20) Dark brown (10YR3/3, 10YR3/2 dry) medium clay; moderate 50–100mm subangular blocky structure; very firm; rough-ped fabric; 2–5% <5mm cracks; <2% 0.075–1mm pores; common fine roots; pH 8.4; genetic boundary, clear, smooth change to
A_1	20–50	(3; 30–40) Dark grey (10YR4/1, 10YR4/1 dry) medium clay; weak 50–100mm subangular blocky structure; very strong; nodular fracture; rough-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 2–6mm subangular tabular quartz fragments; pH 8.6; genetic boundary, abrupt, smooth change to
A_1	50–120	(4; 70–80) Dark grey (10YR4/1) medium heavy clay; apedal massive; very strong; nodular fracture; rough-ped fabric; 2–10% distinct medium very pale brown (10YR7/3) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; pH 8.7; genetic boundary, diffuse, smooth change to
B_2k	120–150	(5; 120–130) Dark brown (7.5YR4/4) medium heavy clay; weak 20–50mm subangular blocky structure; very firm; nodular fracture; rough-ped fabric; 2–10% prominent medium light brownish grey (10YR6/2) calcareous nodules; <2% <5mm cracks; <2% 2–5mm pores; few very fine roots; pH 8.2; genetic boundary, abrupt, smooth change to

B_2	150–250	(6; 190–200) Brown (10YR5/3) medium heavy clay; strong 10–20mm subangular blocky structure; very firm; smooth–ped fabric; <2% faint fine black (10YR2/1) manganese cutans in cracks and cavities; <2% prominent fine light grey (10YR7/2) calcareous nodules; 5–10% <5mm cracks; pH 8.4; genetic boundary, abrupt, smooth change to
B_2	250+	(7; 250–260) Dark brown (7.5YR4/4) medium clay; strong 10–20mm angular blocky structure; moderately firm; weak slickensides, smooth–ped fabric; 2–10% distinct medium dark grey (10YR4/1) calcareous nodules; <2% fine manganese cutans in cracks and cavities; 20–50% coarse organic stains; 2–5% <5mm cracks; <2% 0.075–1mm pores; pH 8.2;

Comments

The 10YR4/1 colour of 166.07 grades to (gleyed) 2.5YR5/1 with depth and carbonate size increases. Infilled worm channels below 280. Sm to 20cm, cracking 50cm. Epipedon 120cm, strat.150. B to 250 then Cg.

Soil classification

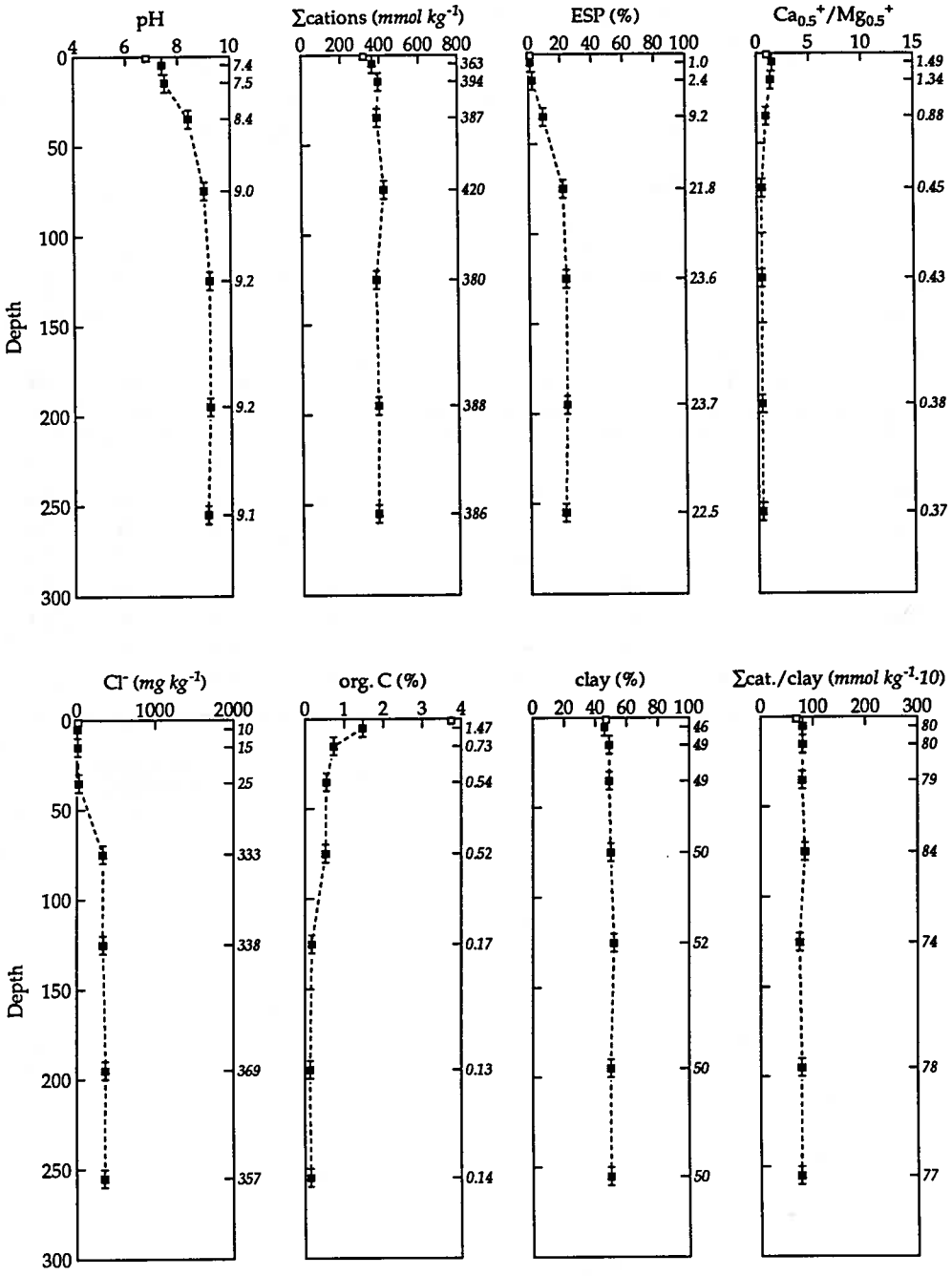
Principal profile form: Ug6.2
Great soil group: Grey clays

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	6.8	16.7	3.74	<0.1	29	19	47
1	$A_1$1	0–10	7.4	3.8	1.47	0.1	36	16	46
2	$A_1$2	10–20	7.5	12.0	0.73	0.6	33	17	49
3	$A_1$3	30–40	8.4	14.9	0.54	1.2	33	16	49
4	$A_1$4	70–80	9.0	23.3	0.52	1.4	32	16	50
5	B_2k	120–130	9.2	49.9	0.17	2.2	29	17	52
6	$B_2$1	190–200	9.2	64.3	0.13	0.7	32	17	50
7	$B_2$2	250–260	9.1	67.0	0.14	0.3	33	16	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 %
17	–	–	142	145	29.1	3.1	<1	319	1.0
10	1.2	13	202	136	21.8	3.8	<1	363	1.0
15	3.7	2	215	161	8.3	9.5	<1	394	2.4
25	2.1	<1	161	183	7.1	35.7	<1	387	9.2
333	1.3	1	98	220	9.8	91.7	<1	420	21.8
338	8.1	5	83	195	11.7	89.4	<1	380	23.6
369	7.3	2	79	206	11.2	91.9	<1	388	23.7
357	4.3	4	77	212	9.9	86.8	<1	386	22.5

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed167

Site location

Grid reference: 764800mE 6655900mN
Farmer: M.H.(Mark) & R.E.W. Lampe
Site described by D. McGarry on 28 May, 1985
The site is located at a grid point

Elevation: 223m
Farm name: Bobbiwaa

Site description

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

Topography: flat

Site comments

Fallow after wheat. A grey clay surface, well mulched. Very flat. No surface stones visible.

Site vegetation

The site was under wheat.

Profile description

Soil described by D. McGarry on 3 June, 1986. Drilled depth 263cm

Horizon	(cm)	(Sample; depth)
A_1p	0–8	(1; 0–8) Very dark greyish brown (10YR3/2, 10YR3/2 dry) light medium clay; moderate 2–5mm granular structure, with moderate 10–20mm subangular blocky structure; moderately firm; rough-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; pH 8.0; genetic boundary, abrupt, smooth change to
A_1	8–100	(2; 10–20) Very dark greyish brown (10YR3/2) medium clay; weak 20–50mm subangular blocky structure; very strong; smooth fracture; smooth-ped fabric; 2–5% 5–10mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.0;
A_1		(3; 30–40) Very dark greyish brown (10YR3/2) medium clay; <2% distinct fine yellowish brown (10YR5/4) patches of sediment, filling cracks; weak 20–50mm subangular blocky structure; moderately strong; nodular fracture; smooth-ped fabric; <2% fine calcareous nodules; <2% 5–10mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.5;

A_1		(4; 70–80) Very dark greyish brown (10YR3/2) heavy clay; <2% distinct fine yellowish brown (10YR5/4) patches of sediment, filling cracks; weak 10–20mm lenticular structure, with weak 10–20mm angular blocky structure; very firm; smooth fracture; 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; pH 8.7; genetic boundary, diffuse, smooth change to
B_2	100–167	(5; 120–130) Reddish brown (5YR4/4) light medium clay; 2–10% distinct medium dark grey (10YR4/1) patches of soil, filling cracks; weak 5–10mm cast granular structure, with apedal massive; moderately firm; smooth fracture; rough–ped fabric; <2% 0.075–1mm pores; pH 8.8; stratigraphic boundary, sharp, smooth change to
$2B_2$	167+	(6; 250–260) Brown (7.5YR5/4) medium clay; <2% distinct medium dark grey (10YR4/1) patches of sediment, filling cracks; moderate >100mm wedge structure, breaking to weak 20–50mm angular blocky structure; moderately firm; weak slickensides, smooth–ped and polished ped fabric; <2% fine calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; pH 9.0;

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

Comments

This profile is quite wet to 100cm, so may be masking structure. From 120cm, the coarse sand increases to 167 where there is a strong sedimentary break but not soil break, thus no buried soil (WTW). But this may equally well be a soil break (DMcG). MVpH.

Soil classification

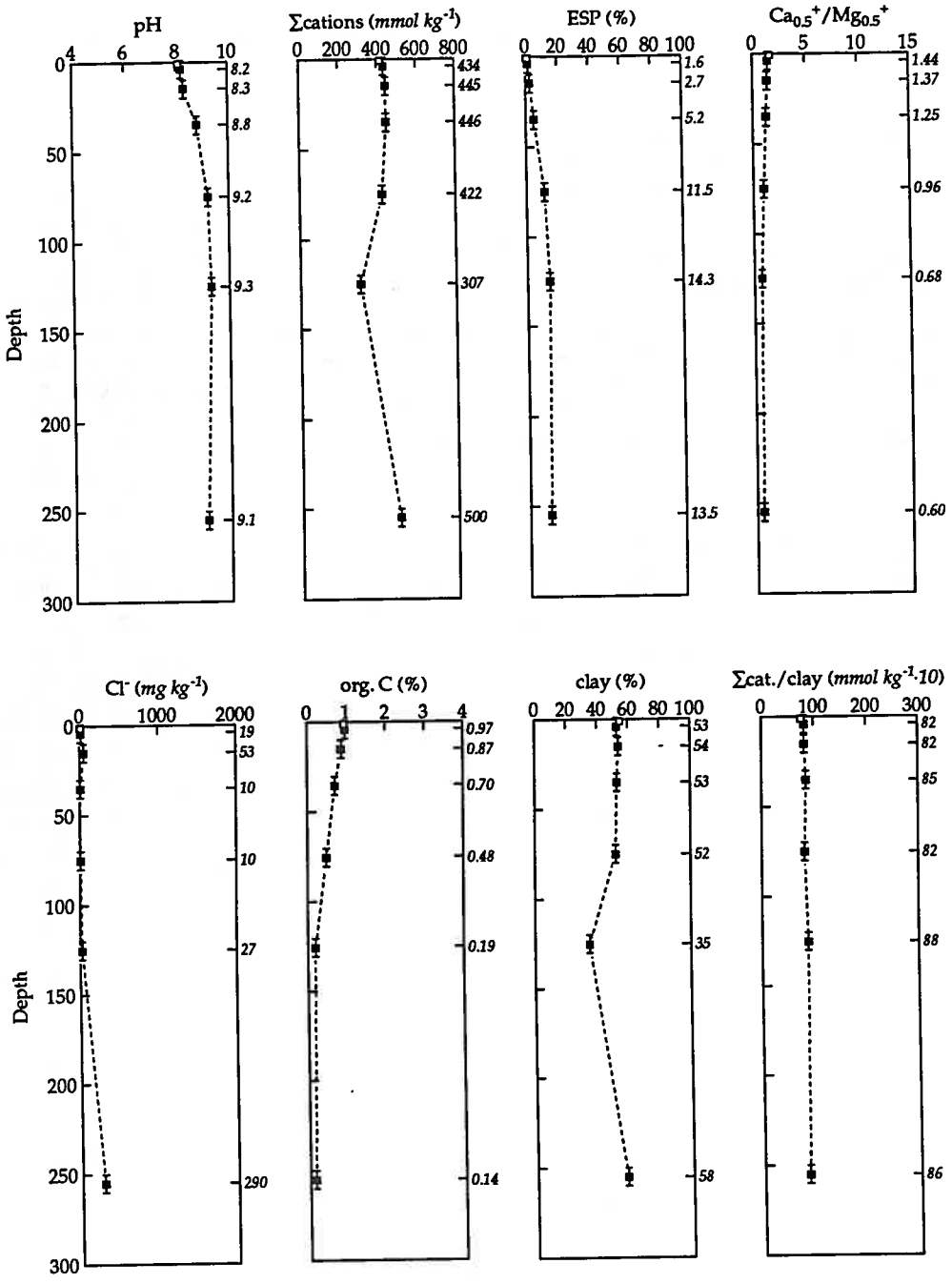
Principal profile form: Ug5.15
Great soil group: Grey clays
Soil taxonomy unit: Pellusterts

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_1p	0–2	8.1	14.3	0.94	0.1	27	17	55
1	A_1p	0–8	8.2	15.1	0.97	0.2	30	16	53
2	A_11	10–20	8.3	13.5	0.87	0.1	28	16	54
3	A_12	30–40	8.8	11.0	0.70	0.1	29	17	53
4	A_13	70–80	9.2	23.5	0.48	0.9	30	16	52
5	B_2	120–130	9.3	16.8	0.19	0.1	55	10	35
6	$2B_2$	250–260	9.1	48.5	0.14	0.9	26	15	58

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	–	–	242	149	21.0	3.6	<1	415	0.9
19	1.1	16	240	167	21.0	6.8	<1	434	1.6
53	2.1	7	243	177	14.1	11.9	<1	445	2.7
10	2.1	7	230	184	8.5	23.0	<1	446	5.2
10	2.1	19	178	185	9.9	48.7	<1	422	11.5
27	2.1	15	103	152	8.5	44.0	<1	307	14.3
290	<0.1	13	157	262	12.8	67.7	<1	500	13.5

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed168

Site location

Grid reference: 767500mE 6655800mN
Farmer: J.R. Armitage
Site described by D. McGarry on 28 May, 1985
The site is located at a grid point

Elevation: 230m
Farm name: Gruie

Site description

Slope: 0°
Landform: middle terrace
Surface dry when sampled
Strong surface crust, trampled
Use: native pasture
Visible cracks: width 1mm

Topography: flat

Site comments

Grasses too dry and eaten to identify. Surface soil is reddish–brown, and appears quite dispersive. No surface stone.

Site vegetation

The following species were noted:

Eucalyptus populnea, Aristida jerichoensis, Bassia quinquecuspis.

Profile description

Soil described by W. T. Ward on 31 January, 1986. Drilled depth 275cm

Horizon	(cm)	(Sample; depth)
A_1	0–90	(1; 0–10) Dark brown (7.5YR3/2, 10YR3/3 dry) light clay; moderate 20–50mm angular blocky structure; moderately strong; earthy fabric; <2% <5mm cracks; common very fine roots; pH 6.5;
A_1		(2; 10–20) Dark brown (7.5YR3/2) medium clay; strong 10–20mm subangular blocky structure; moderately strong; earthy fabric; 2–5% <5mm cracks; few very fine roots; pH 7.5;
A_1		(3; 30–40) Dark brown (7.5YR3/2) medium clay; strong 10–20mm subangular blocky structure; moderately strong; earthy fabric; <2% faint fine light brown (7.5YR6/4) calcareous nodules; <2% <5mm cracks; few very fine roots; pH 8.5;
A_1v		(4; 70–80) Dark brown (7.5YR3/2) medium heavy clay; <2% distinct fine dark

		yellowish brown (10YR4/4) patches of sediment, filling cracks; moderate 20–50mm subangular blocky structure; moderately strong; earthy fabric; <2% faint fine dark greyish brown (10YR4/2) calcareous nodules; <2% <5mm cracks; pH 8.5; genetic boundary, diffuse, smooth change to
B_2	90–220	(5; 120–130) Pinkish white (5YR8/2) medium clay; 2–10% distinct medium dark reddish brown (5YR2/2) organic stains; moderate 20–50mm angular blocky structure; moderately strong; earthy fabric; <2% faint fine pink (7.5YR8/4) calcareous nodules; <2% <5mm cracks; pH 8.8; genetic boundary, very diffuse, smooth change to
C	220+	(6; 250–260) Reddish brown (5YR4/4) medium clay; 20–50% prominent very coarse dark reddish brown (5YR3/2) organic stains; weak 50–100mm angular blocky structure; moderately strong; weak slickensides, smooth fracture; earthy and smooth-ped fabric; <2% faint medium dark brown (7.5YR4/2) calcareous nodules; <2% <5mm cracks; 2–5% 0.075–1mm pores; pH 8.8;

Parent rock: alluvial sediment, mixed texture, with lime

Comments

Second and third cores were labelled "ed 186", but at time of description, site 186 had not been sampled. Topsoil has dried out, powdery surface (weak fine granular) coexisting with moderate to strong angular blocky, but not enough to recognize two structures 0–10. Colour one, 250–260, is for parent material.

Soil classification

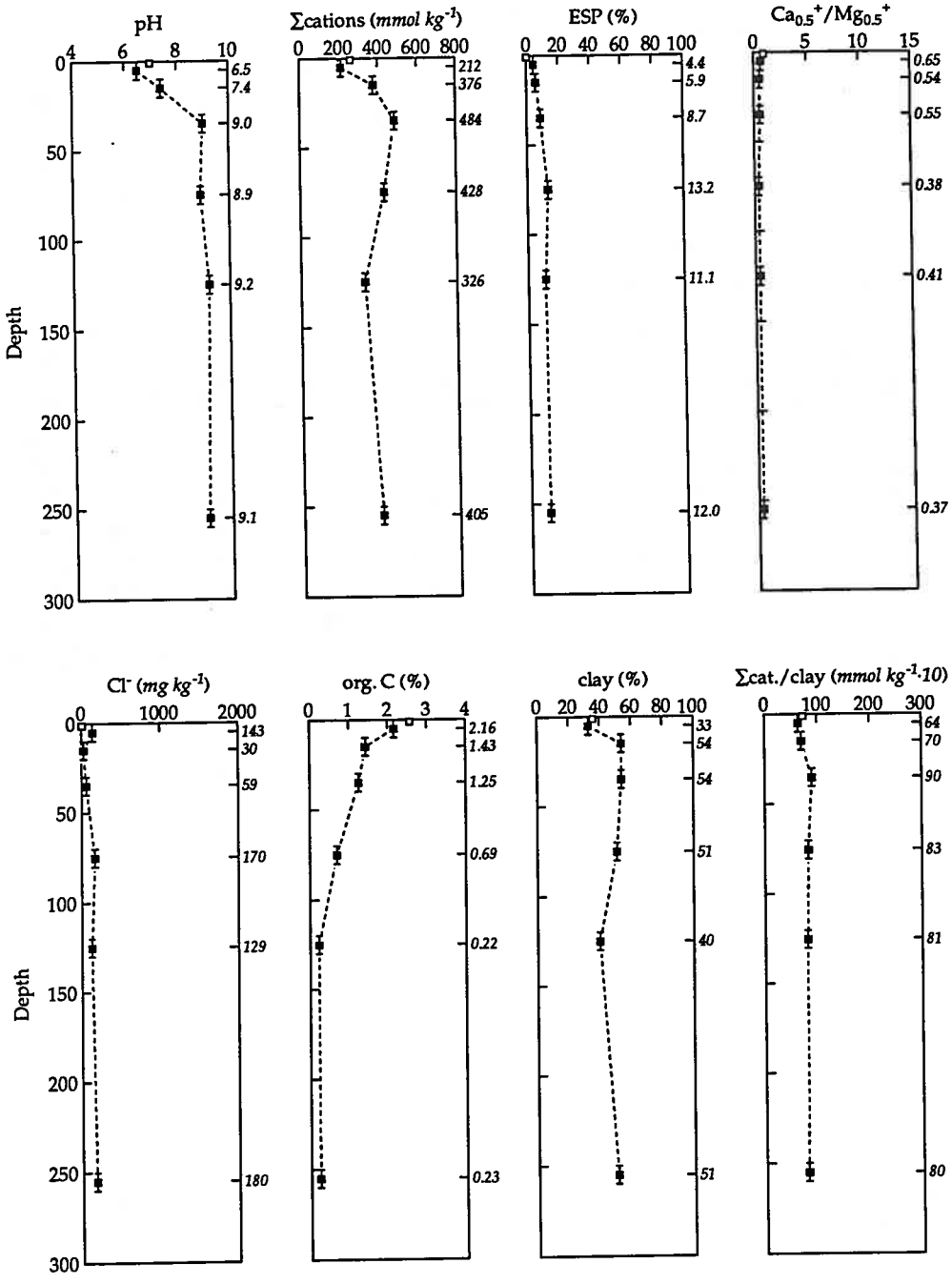
Principal profile form: Ug6.1
Great soil group: Brown clays

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	7.0	11.7	2.57	<0.1	38	22	36
1	$A_1$1	0–10	6.5	24.0	2.16	<0.1	42	21	33
2	$A_1$2	10–20	7.4	13.9	1.43	<0.1	25	19	54
3	$A_1$3	30–40	9.0	35.6	1.25	3.1	19	22	54
4	A_1v	70–80	8.9	32.2	0.69	0.5	28	19	51
5	B_2	120–130	9.2	32.8	0.22	1.7	36	22	40
6	C	250–260	9.1	26.9	0.23	0.7	11	37	51

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	–	–	114	122	24.2	<0.1	<1	260	<0.1
143	47.9	49	75	115	12.4	9.4	<1	212	4.4
30	25.2	6	122	224	8.2	22.0	<1	376	5.9
59	50.3	4	154	282	6.5	42.1	<1	484	8.7
170	<0.1	30	101	264	6.4	56.4	<1	428	13.2
129	2.0	19	83	201	5.6	36.3	<1	326	11.1
180	0.5	22	94	257	5.8	48.4	<1	405	12.0

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed169

Site location

Grid reference: 770200mE 6655800mN
Elevation: 238m
Farmer: M.H.(Mark) & R.E.W. Lampe
Farm name: Bobbiwaa
Site described by D. McGarry on 29 September, 1985
The site is located at a grid point

Site description

Slope: 0°
Topography: flat
Landform: middle terrace
Surface dry when sampled
Fine self-mulching surface, trampled
Use: native pasture
Visible cracks: width 1mm

Site comments

There are extremely few surface cracks perhaps due to infilling with the very fine surface mulch. Long red ridge approximately 2km from here, to the north–west, running NE to SW. Eucalyptus tessellaris occur on this ridge.

Site vegetation

The following species were noted:

Eucalyptus melanophloia, ?Stipa.

These specimens were observed but not identified:

106, 150.

Profile description

Soil described by G. M. Roberts on 10 July, 1985. Drilled depth 267cm

Horizon	(cm)	(Sample; depth)
A_1p	0–10	(1; 0–10) Dark greyish brown (10YR4/2, 10YR4/2 dry) heavy clay; moderate 10–20mm subangular blocky structure; moderately strong; earthy fabric; 5–10% <5mm cracks; <2% 0.075–1mm pores; common very fine roots; pH 7.0; plough sole, gradual, smooth change to
A_1x	10–70	(2; 10–20) Very dark grey (10YR3/1) heavy clay; weak 20–50mm subangular blocky structure, breaking to moderate 2–5mm subangular blocky structure; moderately strong; earthy and smooth–ped fabric; 2–5% <5mm cracks; <2% 0.075–1mm pores;

		common very fine roots; <2% 2–6mm rounded quartz fragments; pH 8.0;
A_1		(3; 30–40) Very dark grey (10YR3/1) medium heavy clay; weak 20–50mm subangular blocky structure, breaking to moderate 2–5mm subangular blocky structure; moderately strong; earthy and smooth-ped fabric; <2% faint fine white (10YR8/1) calcareous nodules; 2–5% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 2–6mm rounded quartz fragments; pH 8.5;
A_1		(4; 50–60) Very dark grey (10YR3/1) medium heavy clay; weak 20–50mm subangular blocky structure, breaking to moderate 2–5mm subangular blocky structure; moderately strong; earthy and smooth-ped fabric; <2% faint fine white (10YR8/1) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 2–6mm rounded quartz fragments; pH 8.7; genetic boundary, gradual, smooth change to
B_2	70–136	(5; 70–80) Dark greyish brown (10YR4/2) medium heavy clay; moderate 20–50mm subangular blocky structure, breaking to moderate 5–10mm angular blocky structure; moderately strong; weak slickensides, earthy and smooth-ped fabric; 2–10% faint medium white (10YR8/1) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 2–6mm rounded quartz fragments; pH 9.0;
B_2		(6; 120–130) Brown (7.5YR5/4) medium heavy clay; 20–50% faint medium dark brown (7.5YR4/2) organic stains; moderate 5–10mm angular blocky structure; moderately firm; weak slickensides, smooth-ped and earthy fabric; 20–50% coarse organic stains; <2% distinct fine pinkish white (7.5YR8/2) calcareous nodules; <2% fine manganese soft segregations; 2–5% <5mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 9.0; genetic boundary, clear, smooth change to
B_2k	136+	(7; 250–260) Brown (7.5YR5/4) medium clay; moderate >100mm wedge structure, breaking to strong 5–10mm angular blocky structure; moderately firm; strong slickensides, smooth-ped and polished ped fabric; 2–10% distinct medium very dark grey (10YR3/1) manganese stains; 10–20% prominent coarse white (10YR8/2) calcareous hollow nodules; 10–20% coarse calcareous nodules; 2–5% <5mm cracks; <2% 0.075–1mm pores; pH 9.0;

Comments

Large wide deep cracks down to 550mm. Profile has dull, massive appearance. There are two distinct bands of calcium carbonate at 180–190 and 255–267. Note extra sample (169.04) at 50–60cm and sampled without explanation.

Soil classification

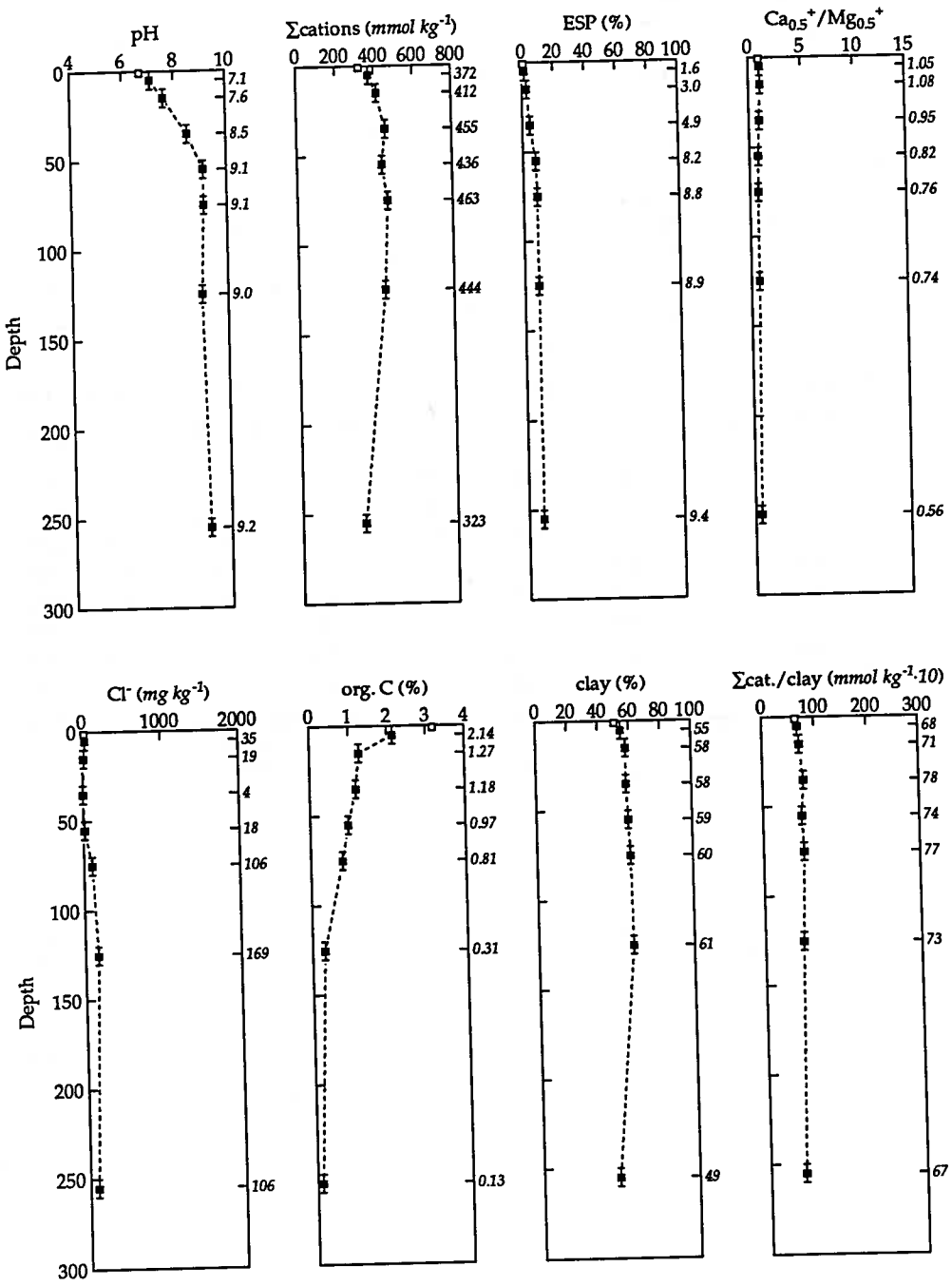
Principal profile form: Ug5.15
Great soil group: Brown clays

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_1p	0–2	6.7	16.3	3.18	<0.1	28	16	51
1	A_1p	0–10	7.1	15.7	2.14	0.1	27	15	55
2	A_1x	10–20	7.6	9.1	1.27	0.1	25	15	58
3	A_11	30–40	8.5	8.4	1.18	0.3	23	16	58
4	A_12	50–60	9.1	17.8	0.97	0.7	23	16	59
5	B_21	70–80	9.1	22.1	0.81	1.5	22	15	60
6	B_22	120–130	9.0	28.6	0.31	1.9	22	15	61
7	B_2k1	250–260	9.2	25.3	0.13	18.6	18	14	49

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	–	–	138	142	39.5	2.9	<1	323	0.9
35	6.9	23	173	165	27.6	6.0	<1	372	1.6
19	7.0	6	200	185	15.5	12.3	<1	412	3.0
4	2.4	3	205	216	12.5	22.4	<1	455	4.9
18	1.4	2	174	214	12.4	35.7	<1	436	8.2
106	1.2	6	176	231	14.6	40.7	<1	463	8.8
169	4.5	9	165	223	16.9	39.4	<1	444	8.9
106	0.9	2	101	180	11.3	30.5	<1	323	9.4

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed170

Site location

Grid reference: 772900mE 6655700mN
Farmer: Peter Wilson
Site described by D. McGarry on 9 September, 1985
The site is located at a grid point

Elevation: 250m
Farm name: Mayfield

Site description

Slope: 1° Slope direction: 158°
Landform: floodplain
Surface dry when sampled
Weak surface crust, trampled
Use: native pasture

Topography: gently sloping

Site comments

Surface cracks are very narrow (1cm) and penetrate no more than 2cm. Surface crust ranges from weak to moderate. Brown wash from low terrace, spread as modern alluvium over prior soil at 70cm depth. Query Tumbledown or River Red Gum.

Site vegetation

The following species were noted:

Eucalyptus camaldulensis, ?Stipa, Stipa ?scabra, Brassica tournefortii, Capsella bursa-pastoris, Psoralea tenax, Silybum marianum.

Profile description

Soil described by D. McGarry on 4 June, 1986. Drilled depth 287cm

Horizon	(cm)	(Sample; depth)
A_1	0–32	(1; 0–10) Dark brown (7.5YR3/2) light medium clay; <2% prominent medium black (N2/) charcoal fragments; strong 20–50mm angular blocky structure; very firm; smooth-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; common very fine roots; pH 7.5;
A_1		(2; 10–20) Dark brown (7.5YR3/2) light medium clay; 2–10% distinct fine brown (7.5YR5/4) patches of sediment, filling cracks; strong 20–50mm angular blocky structure; very firm; smooth-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; common very fine roots; pH 8.0; genetic boundary, abrupt, wavy change to
B_2	32–40	(3; 30–40) Dark brown (7.5YR3/2) light medium clay; 2–10% distinct fine light yellowish brown (10YR6/4) patches of sediment, filling cracks; <2% distinct

		medium black (10YR2/1) flecks produced by faunal mixing; moderate 20–50mm angular blocky structure; very firm; smooth–ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; common very fine roots; pH 8.5; stratigraphic boundary, abrupt, smooth change to
$2A_1$	40–200	(4; 70–80) Very dark grey (10YR3/1) light clay; 2–10% distinct fine dark brown (10YR3/3) patches of sediment, filling cracks; weak 20–50mm prismatic structure, breaking to weak 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;
$2A_1$		(5; 120–130) Very dark grey (10YR3/1) light medium clay; 2–10% distinct fine dark brown (10YR3/3) patches of sediment, filling cracks; weak 20–50mm wedge structure; moderately strong; smooth fracture; smooth–ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.3; genetic boundary, clear, smooth change to
$2B_2$	200+	(6; 250–260) Dark greyish brown (10YR4/2) medium clay; 10–20% prominent fine dark grey (10YR4/1) patches of soil, filling cracks; weak 20–50mm prismatic structure, breaking to weak 5–10mm angular blocky structure; moderately firm; smooth fracture; smooth–ped fabric; <2% distinct fine black (10YR2/1) manganese nodules; <2% fine calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; pH 8.8;

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

Comments

Washed–in material in layer 02 is silt. There is evidence of layering (newly added sediment) in the top 80cm of profile. A new sediment with a developed A and less well developed B2 breaks at 40cm to a buried A layer which is very dark. The top 40cm of the buried A (to 80cm in the profile) has some inwashed sand and faint (new) sedimentary features. An alluvial (WTW) soil showing recent (to 40cm) over slightly older alluvium on ?MVpH below 250–260. B2 is developing in alluvial parent. The top 20 cm of the profile has some new inwashed silt, mainly in cracks. Difficulty of interpretation and location of boundaries in top 40cm caused by new sediment being silt/clay so changes inferred from colour. An inherited sedimentary feature at 276–282 – a band of coarse sand.

Soil classification

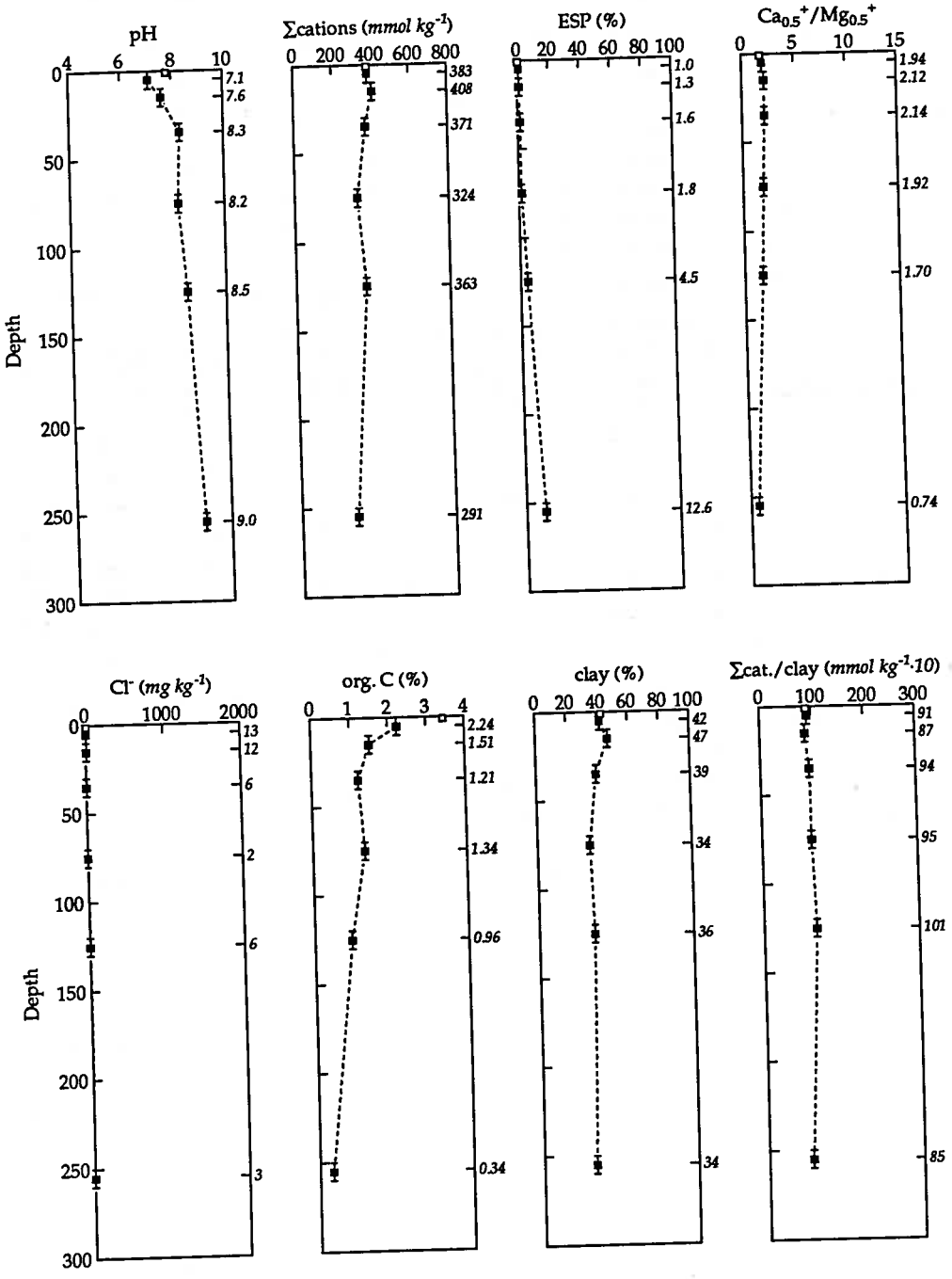
Principal profile form: Ug5.17
Great soil group: No suitable group
Soil taxonomy unit: Pellusterts

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	7.8	15.5	3.45	0.1	19	32	43
1	$A_1$1	0–10	7.1	20.0	2.24	0.1	24	30	42
2	$A_1$2	10–20	7.6	11.6	1.51	<0.1	17	33	47
3	B_2	30–40	8.3	8.2	1.21	0.1	32	26	39
4	$2A_1$1	70–80	8.2	5.4	1.34	<0.1	37	26	34
5	$2A_1$2	120–130	8.5	5.9	0.96	<0.1	40	23	36
6	$2B_2$	250–260	9.0	10.0	0.34	0.1	50	15	34

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	–	–	222	127	27.0	2.1	3	382	0.6
13	44.2	82	232	120	27.3	3.8	<1	383	1.0
12	20.1	84	264	124	14.5	5.5	<1	408	1.3
6	5.2	26	244	114	6.4	6.1	<1	371	1.6
2	1.0	36	207	107	4.1	5.9	<1	324	1.8
6	<0.1	29	216	127	3.8	16.2	<1	363	4.5
3	<0.1	31	106	143	5.0	36.6	<1	291	12.6

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed171

Site location

Grid reference: 775700mE 6655600mN
Farmer: A.O.(Gus) Falkiner
Site described by D. McGarry on 9 September, 1985
The site is located at a grid point

Elevation: 274m
Farm name: Murrumbilla

Site description

Slope: 6° Slope direction: 190°
Landform: mid-slope
Surface dry when sampled
Hard-setting surface, trampled
Use: native forest, wheat, cattle pasture
Visible cracks: width 1mm

Topography: easy sloping

Site comments

Large shear vane will not penetrate. Very hard just beneath surface, which is hardsetting rather than crusted. Note red paleosol in subsurface.

Site vegetation

The following species were noted:

Eucalyptus populnea, Geijera parviflora, Callitris columellaris, Eragrostis, Stipa verticellata, Stipa ?setacea, Bothriochloa decipiens, Hordeum leporinum, Stipa, Silybum marianum.

Profile description

Soil described by W. T. Ward on 4 December, 1986. Drilled depth 283cm

Horizon	(cm)	(Sample; depth)
A_1	0–30	(1; 0–10) Dark brown (7.5YR3/2, 10YR5/3 dry) light sandy clay loam; weak 5–10mm platy structure, with weak 20–50mm subangular blocky structure; very firm; granular fracture; smooth-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 5.5;
A_1		(2; 10–20) Dark brown (7.5YR3/2) light sandy clay loam; moderate 20–50mm subangular blocky structure; moderately weak; smooth-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 6.0; genetic boundary, abrupt, smooth change to
B_2	30–120	(3; 30–40) Yellowish red (5YR4/6) light medium clay; 10–20% distinct medium grey (5YR5/1) mottles; <2% distinct fine dark brown (7.5YR4/2) organic stains;

		moderate 20–50mm angular blocky structure; very firm; smooth–ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 7.0;
B_2		(4; 70–80) Strong brown (7.5YR5/6) sandy clay; 2–10% distinct medium grey (5YR5/1) mottles; <2% distinct fine dark brown (7.5YR4/2) organic stains; moderate >100mm prismatic structure, breaking to moderate 20–50mm angular blocky structure; moderately strong; smooth–ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; pH 8.5; genetic boundary, gradual, smooth change to
B_2v	120+	(5; 120–130) Brown (7.5YR5/4) sandy clay; 10–20% distinct medium reddish brown (2.5YR4/4) inherited stains; weak >100mm prismatic structure, breaking to weak 20–50mm platy structure; very strong; nodular fracture; smooth–ped fabric; <2% distinct medium pink (7.5YR7/4) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; <2% 2–6mm subangular quartz fragments; pH 9.0;
$2B_2o$		(6; 250–260) Dark red (10R3/6) sandy clay; 10–20% prominent coarse light brownish grey (10YR6/2) mottles; weak 20–50mm platy structure; very strong; nodular fracture; smooth–ped fabric; 2–10% prominent coarse white (10YR8/2) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; pH 8.5;

Parent rock: residual, mixed texture, with lime, clay

Comments

Colour for Horizon 2 is drainage mottle. Large cracks in subsoil faced with top soil sand, extends through 171.03, 171.04. Carbonate nodules appear below 80cm. Approx. 60% of core consists of red material. Horizon 5 has a fourth colour 7.5YR5/2, poor drainage. Prominent red colouring in subsoil again an indication of prior red weathering; the grey is in fissures Residual Jurassic alluvium. One or two small scattered pebbles in lower part of core.

Soil classification

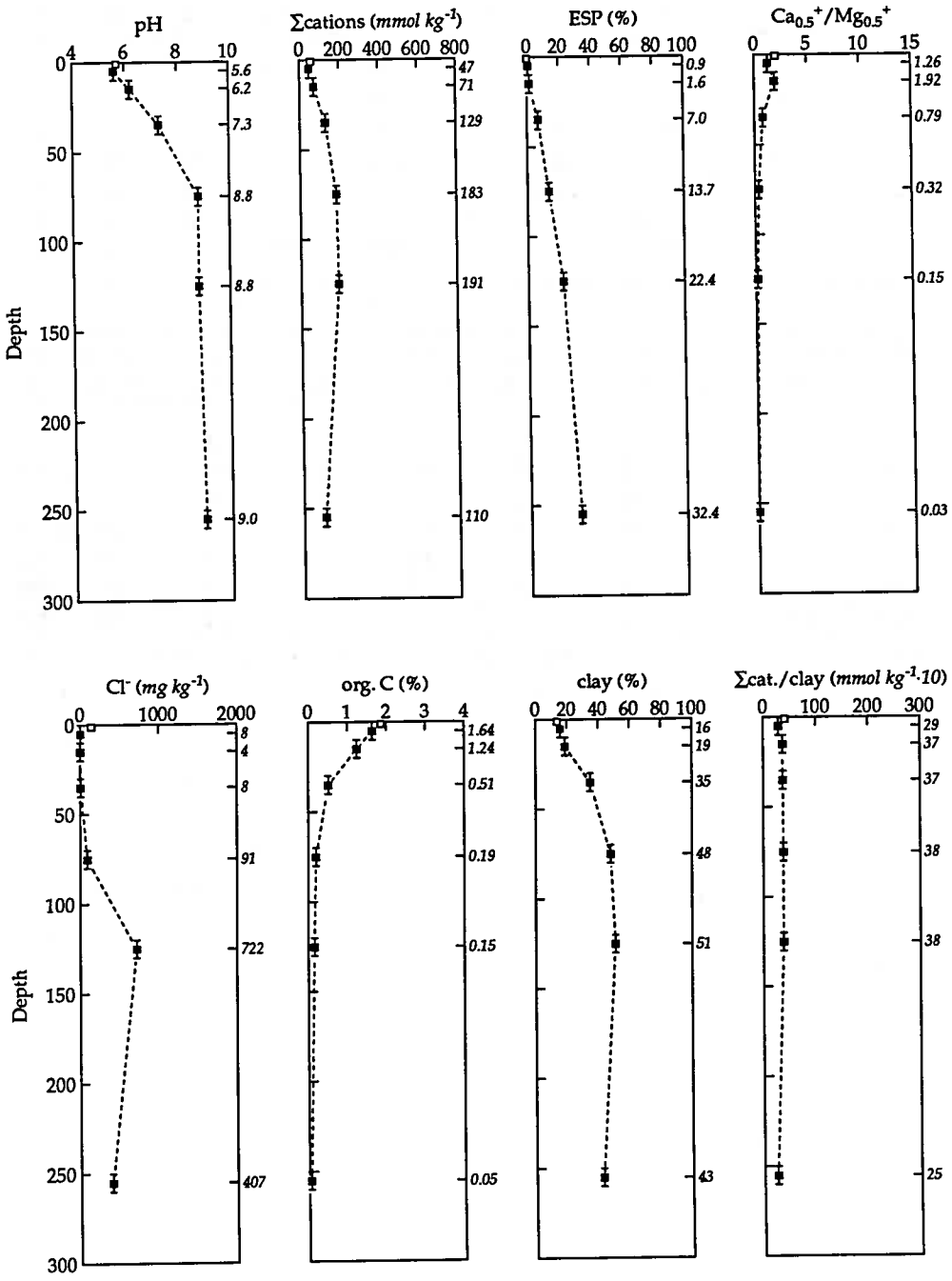
Principal profile form: Dy5.13
Great soil group: Solodic soils
Soil taxonomy unit: Haplustults

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	5.7	19.4	1.86	<0.1	77	6	14
1	$A_1$1	0–10	5.6	6.5	1.64	<0.1	76	5	16
2	$A_1$2	10–20	6.2	3.7	1.24	<0.1	74	5	19
3	$B_2$1	30–40	7.3	5.2	0.51	<0.1	60	4	35
4	$B_2$2	70–80	8.8	17.3	0.19	<0.1	47	4	48
5	B_2v	120–130	8.8	66.3	0.15	0.2	44	4	51
6	$2B_2$o	250–260	9.0	48.4	0.05	0.3	51	5	43

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 %
144	–	–	29	14	10.1	<0.1	3	56	<0.1
8	10.3	18	21	17	8.5	0.4	<1	47	0.9
4	2.5	11	41	22	6.8	1.1	<1	71	1.6
8	1.4	1	50	64	6.3	9.1	<1	129	7.0
91	0.4	<1	37	114	6.7	25.1	<1	183	13.7
722	<0.1	1	19	125	4.8	42.9	<1	191	22.4
407	<0.1	1	2	71	1.4	35.6	<1	110	32.4

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed172

Site location

Grid reference: 778400mE 6655500mN
Elevation: 299m
Farmer: I.O.(Ian) Falkiner
Farm name: Murrumbilla
Site described by D. McGarry on 10 July, 1985
The site is located at a grid point

Site description

Slope: 1° Slope direction: 180°
Topography: gently sloping
Landform: mid-slope
Surface dry when sampled
Soft surface, virgin state
Use: native forest
Visible cracks: width 1mm

Site comments

Very soft sandy surface, beneath which is a hard setting, dark grey layer. Depth of surface (dispersed?) sand is 0.1–2cm. The small tree is quinine, the deep subsoil is ? prior soil ferruginous horizon.

Site vegetation

The following species were noted:

Eucalyptus blakelyi, Acacia concurrens, Eucalyptus pilligaensis, Callitris columellaris, ?Clareodendron, Aristida caput-medusae, Aristida ramosa, Asteraceae, Hybanthus monopetalus.

Profile description

Soil described by D. McGarry on 6 June, 1986. Drilled depth 270cm

Horizon	(cm)	(Sample; depth)
A_1	0–20	(1; 0–10) Dark brown (7.5YR3/4) sand; apedal <2mm single–grained structure, with weak 5–10mm granular structure; very weak; sandy and earthy fabric; <2% 0.075–1mm pores; few very fine roots; pH 6.5;
A_1		(2; 10–20) Dark brown (10YR3/3) sand; weak 5–10mm angular blocky structure, with weak 2–5mm granular structure; very weak; smooth fracture; rough–ped fabric; <2% 0.075–1mm pores; few very fine roots; pH 5.8; genetic boundary, diffuse, smooth change to
A_2	20–65	(3; 30–40) Strong brown (7.5YR5/6) sand; apedal massive; very weak; smooth fracture; sandy fabric; <2% 0.075–1mm pores; few very fine roots; pH 6.0; genetic

boundary, clear, smooth change to

A_2	65–155	(4; 70–80) Yellowish red (5YR5/6) clayey sand; <2% distinct fine black (10YR2/1) charcoal fragments; apedal massive; very weak; smooth fracture; sandy fabric; <2% distinct medium red (2.5YR4/6) ferruginous tubules; <2% 0.075–1mm pores; few very fine roots; pH 6.0;
A_2		(5; 90–100) Red (2.5YR4/6) clayey sand; apedal massive; moderately weak; smooth fracture; sandy fabric; 20–50% distinct very coarse red (2.5YR4/6) ferruginous soft segregations; <2% 0.075–1mm pores; few very fine roots; pH 5.7;
A_2		(6; 120–130) Strong brown (7.5YR5/8) clayey sand; apedal massive; moderately weak; smooth fracture; sandy fabric; <2% distinct fine yellowish red (5YR4/6) ferruginous soft segregations; <2% 0.075–1mm pores; few very fine roots; pH 5.7;
A_2		(7; 145–155) Very pale brown (10YR7/3) clayey sand; apedal massive; moderately weak; sandy fabric; <2% distinct fine yellowish red (5YR5/6) ferruginous soft segregations; <2% 0.075–1mm pores; few very fine roots; pH 7.0; genetic boundary, sharp, smooth change to
B_2	155–214	(8; 155–165) Light grey (10YR7/2) clayey sand; apedal massive; moderately strong; smooth fracture; sandy fabric; 10–20% distinct coarse yellowish red (5YR5/6) ferruginous stains; <2% <5mm cracks; <2% 1–2mm pores; pH 6.5; stratigraphic boundary, sharp, smooth change to
$2B_2$	214+	(9; 250–260) Strong brown (7.5YR5/6) rock with clay; moderate 20–50mm angular blocky structure; moderately strong; smooth-ped fabric; <2% prominent fine black (N2/) manganese stains; <2% <5mm cracks; <2% 0.075–1mm pores; 2–10% >60mm angular tabular rock fragments; pH 8.5;

Parent rock: alluvial sediment, sandstone

Comments

0–3cm is 7.5YR4/4 sand, loose, single grain – i.e., lighter than 3–10cm. The A2 is very slightly bleached. Though 65–130 is brightened ferruginous material, it has formed in the A2. Sample.05 is very ferruginized (red) layer,.06 is below the bright red material,.07 is immediately (10cm) above the B2,.08 is the top of the B2. The break at 214 marks the break from grey/white (perhaps silicified) brittle sand (stone) above to structured clay (with soil attributes) below. At 245–250 there are plates of silicified sandstone and quartz gravels in a band, horizontal to the surface – similar to contact with Garawilla Volcanics.

Soil classification

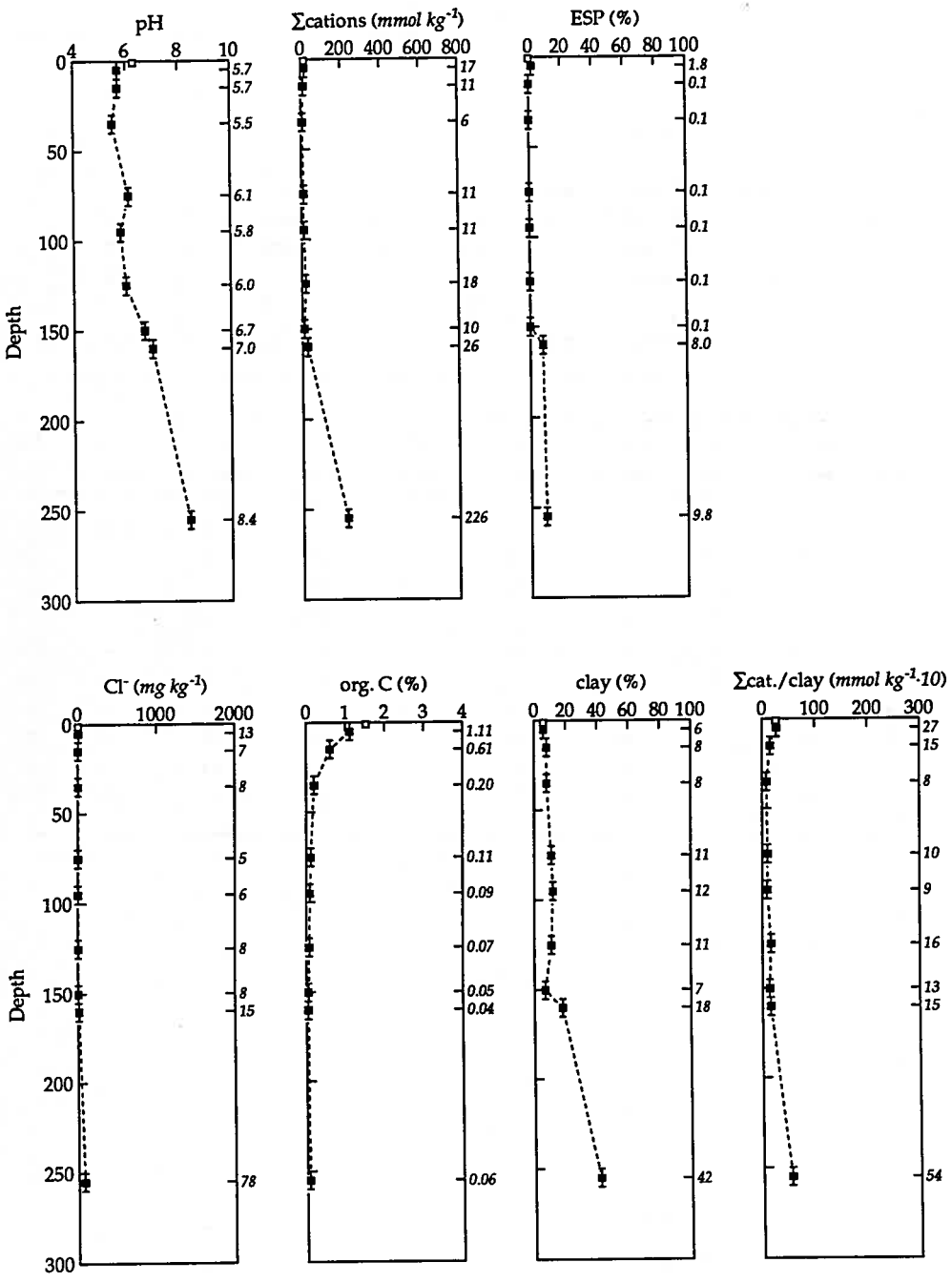
Principal profile form: Dg3.42
Great soil group: Soloths

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	6.3	1.6	1.53	<0.1	88	3	6
1	$A_1$1	0–10	5.7	8.7	1.11	<0.1	90	2	6
2	$A_1$2	10–20	5.7	3.8	0.61	<0.1	88	3	8
3	$A_2$1	30–40	5.5	1.6	0.20	<0.1	89	3	8
4	$A_2$2	70–80	6.1	1.1	0.11	<0.1	85	3	11
5	$A_2$3	90–100	5.8	1.1	0.09	<0.1	85	4	12
6	$A_2$4	120–130	6.0	1.3	0.07	<0.1	85	3	11
7	$A_2$5	145–155	6.7	1.9	0.05	<0.1	89	4	7
8	B_2	155–165	7.0	3.0	0.04	<0.1	75	7	18
9	$2B_2$	250–260	8.4	11.7	0.06	<0.1	53	6	42

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 %
7	–	–	9	3	2.7	<0.1	<1	15	<0.1
13	27.6	40	11	2	2.6	0.3	1	17	1.8
7	9.7	84	5	1	3.0	<0.1	2	11	<0.1
8	3.3	19	<1	1	2.2	<0.1	3	6	<0.1
5	0.8	2	<1	6	4.2	<0.1	1	11	<0.1
6	<0.1	1	<1	5	3.4	<0.1	2	11	<0.1
8	<0.1	1	7	4	4.5	<0.1	3	18	<0.1
8	<0.1	1	<1	6	3.6	<0.1	<1	10	<0.1
15	0.2	<1	<1	19	5.3	2.1	<1	26	8.0
78	<0.1	4	<1	179	25.0	22.2	<1	226	9.8

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed173

Site location

Grid reference: 781300mE 6655400mN
stock route
Site described by W. T. Ward on 18 September, 1985
The site is located at a grid point

Elevation: 309m
near Murrumbilla gate

Site description

Slope: 1° Slope direction: 340°
Landform: pediment
Surface moist when sampled
Hard-setting surface, virgin state
Use: native pasture, cattle pasture
Visible cracks: width 1mm

Topography: gently sloping

Site comments

Topography r1 to r2. Handshear: soft patches give 1.8. Handpen: soft parts give 1.6. The soft patches are small, adjoin grass clumps, and are sandy. Soil grades to red so we take an extra metre.

Site vegetation

The site included bare ground.

The following species were noted:

Eucalyptus populnea, Callitris columellaris, ?Clareodendron, Aristida, Aristida ramosa, Bothriochloa decipiens, Bassia quinquecuspis ssp. semiglabra, Lepidium bonariense, Bassia quinquecuspis var. villosa.

Profile description

Soil described by G. M. Roberts on 25 July, 1985. Drilled depth 367cm

Horizon	(cm)	(Sample; depth)
A_1	0–40	(1; 0–10) Dark brown (7.5YR4/4, 7.5YR4/4 dry) sandy loam; weak <2mm granular structure; sandy fabric; <2% <5mm cracks; <2% 0.075–1mm pores; common fine roots; pH 6.5;
A_1		(2; 10–20) Dark brown (7.5YR4/4) loamy sand; weak 10–20mm subangular blocky structure; sandy fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few fine roots; pH 6.0;

A_2n		(3; 30–40) Dark brown (7.5YR4/4) loamy sand; 2–10% distinct coarse dark reddish brown (5YR3/4) organic stains; apedal <2mm massive; sandy and earthy fabric; 2–10% prominent coarse very dark grey (N3/) iron–manganese nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; 2–10% 20–60mm rounded ironstone nodules; pH 7.5; genetic boundary, abrupt, smooth change to
B_2n	40–216	(4; 70–80) Yellowish brown (10YR5/6) sandy clay; <2% distinct medium light brownish grey (10YR6/2) stains of unknown origin; strong >100mm prismatic structure, breaking to moderate 20–50mm angular blocky structure; very firm; earthy and smooth–ped fabric; 2–10% distinct medium yellowish red (5YR5/6) ferruginous stains; 2–5% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.0;
B_2n		(5; 120–130) Brownish yellow (10YR6/6) sandy clay; strong >100mm prismatic structure, breaking to moderate 10–20mm angular blocky structure; very firm; earthy and smooth–ped fabric; 2–10% distinct coarse yellowish red (5YR5/6) ferruginous veins; 10–20% distinct coarse black (10YR2/1) manganese veins; <2% fine calcareous nodules; 2–5% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.7; genetic boundary, clear, smooth change to
B_2o	216+	(6; 250–260) Brownish yellow (10YR6/6) fine sandy clay; strong >100mm prismatic structure, breaking to moderate 5–10mm angular blocky structure; very firm; earthy 2–10% distinct coarse red (2.5YR4/6) ferruginous veins; 10–20% distinct coarse black (10YR2/1) manganese veins; 2–5% <5mm cracks; <2% 0.075–1mm pores; pH 8.5;
B_2o		(7; 320–330) Brownish yellow (10YR6/6) fine sandy clay; moderate >100mm prismatic structure, breaking to moderate 5–10mm angular blocky structure; very firm; earthy 2–10% distinct medium red (2.5YR4/6) ferruginous veins; <2% distinct medium black (10YR2/1) manganese veins; 2–5% <5mm cracks; <2% 0.075–1mm pores; pH 8.3;

Parent rock: colluvial sediment, sandstone

Comments

30–40 colour 2 an organic stain. Concretions in 30–40 include 5YR5/8. Some fine manganese occurs in 173.04 according to GMR, but is not in significant visible amounts. Mn stains become obvious at 90cm. Few mn/fe segregations also evident in upper part of B. Carbonate continues to about 200cm but not into reddish zone. The lower part of the B2 is differentiated by its reddish colour. Depth 173.07 should have been 350–360. Note conflict of calling site 173.03 an A2n without a horizon break from A1$2.

Soil classification

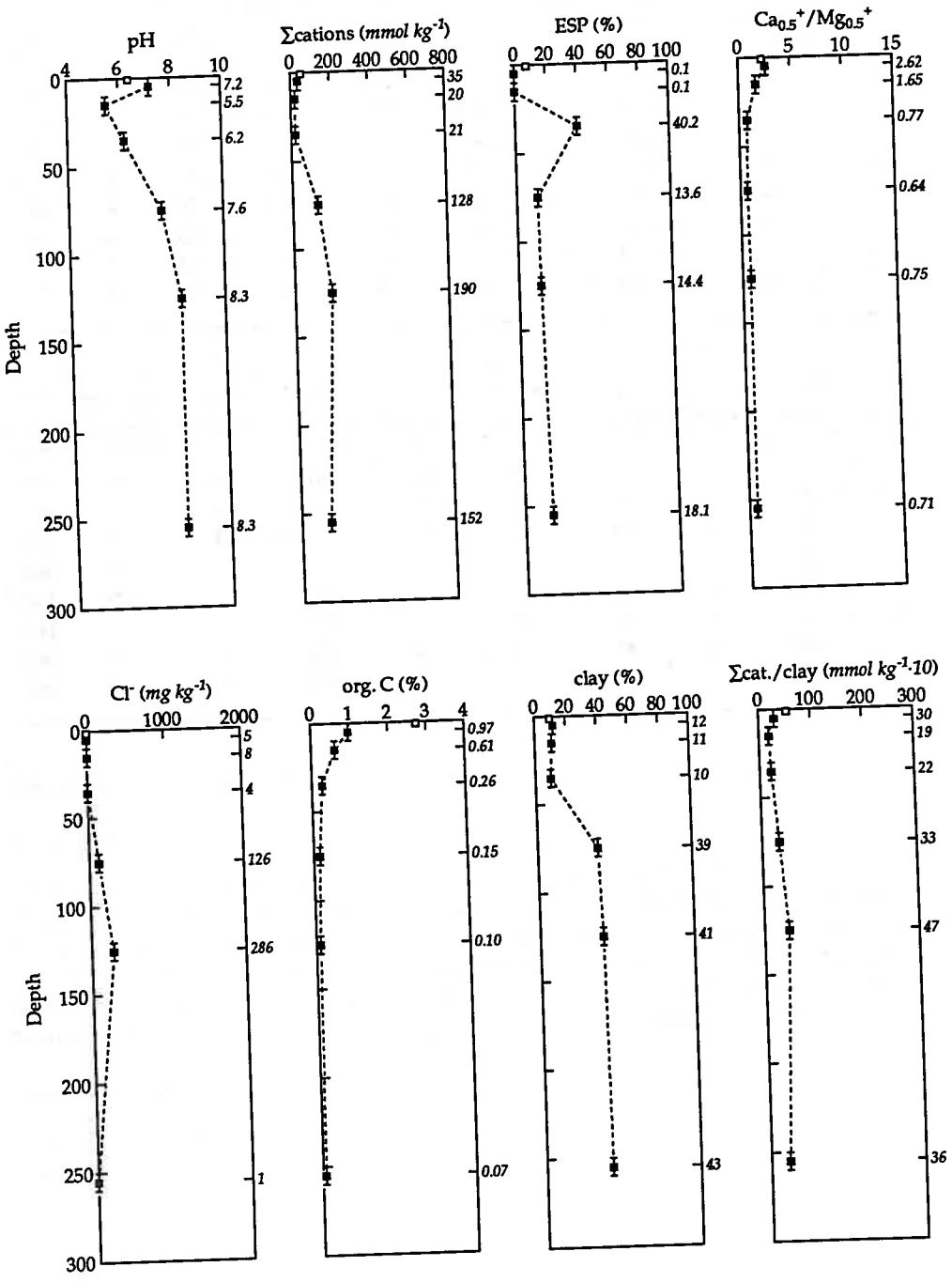
Principal profile form: Dy5.43
Great soil group: Solodic soils

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	6.4	4.7	2.74	<0.1	79	7	10
1	$A_1$1	0–10	7.2	3.8	0.97	<0.1	79	8	12
2	$A_1$2	10–20	5.5	4.7	0.61	<0.1	81	7	11
3	A_2n	30–40	6.2	1.6	0.26	<0.1	82	8	10
4	B_2n1	70–80	7.6	11.9	0.15	<0.1	56	6	39
5	B_2n2	120–130	8.3	22.4	0.10	<0.1	53	6	41
6	B_2o1	250–260	8.3	30.1	0.07	<0.1	53	4	43
7	B_2o2	320–330	8.3	23.9	0.03	<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 %
6	–	–	29	13	6.3	4.1	<1	52	7.9
5	<0.1	47	20	8	6.6	<0.1	<1	35	<0.1
8	<0.1	32	10	6	2.5	<0.1	1	20	<0.1
4	<0.1	21	5	7	0.6	8.6	<1	21	40.2
126	0.2	17	41	64	6.1	17.3	<1	128	13.6
286	0.1	28	66	88	8.3	27.4	<1	190	14.4
<1	<0.1	18	49	69	6.4	27.6	<1	152	18.1
27	1.0	17	30	62	4.5	22.2	<1	119	18.7

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed174

Site location

Grid reference: 783900mE 6655300mN
Elevation: 328m
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: 0°
Topography: flat
Landform: middle terrace
Surface moist when sampled
Fine self-mulching surface, cultivated
Use: wheat
Visible cracks: width 1mm

Site comments

Few, rounded basaltic rocks on surface. Coarse basaltic gravels at 183–185cm. Stopped drilling at 182cm. Dark, fine self mulching topsoil.

Site vegetation

The site was under wheat.

Profile description

Soil described by W. T. Ward on 15 December, 1986. Drilled depth 182cm

Horizon	(cm)	(Sample; depth)
A_1p	0–10	(1; 0–10) Dark brown (7.5YR3/2, 7.5YR3/2 dry) light medium clay; weak 20–50mm lenticular structure, with moderate 5–10mm granular structure; moderately firm; smooth-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.5; genetic boundary, diffuse, smooth change to
A_1	10+	(2; 10–20) Dark brown (7.5YR3/2) light medium clay; moderate 20–50mm lenticular structure; very firm; smooth-ped and polished ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 2–6mm rounded quartz fragments; pH 8.7;
A_1		(3; 30–40) Dark brown (7.5YR3/2) medium clay; <2% prominent fine brown (7.5YR5/4) patches of sediment, filling cracks; weak 20–50mm wedge structure, breaking to moderate 20–50mm angular blocky structure; very firm; granular fracture; smooth-ped and polished ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 2–6mm rounded rock fragments; pH 8.7;

A_1	(4; 70–80) Dark brown (7.5YR3/2) medium clay; weak 20–50mm wedge structure, breaking to moderate 20–50mm angular blocky structure; very firm; nodular fracture; smooth-ped and polished ped fabric; <2% faint fine dark brown (7.5YR4/2) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 9.0;
B_2v	(5; 120–130) Dark reddish brown (5YR3/3) light medium clay; <2% distinct medium dark brown (7.5YR3/2) flecks produced by faunal mixing; strong 20–50mm wedge structure, breaking to moderate 2–5mm angular blocky structure; very firm; weak slickensides, smooth-ped and polished ped fabric; <2% distinct fine reddish brown (5YR5/3) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 9.0;
B_2	(6; 170–180) Dark reddish grey (5YR4/2) medium clay; moderate 20–50mm wedge structure, breaking to weak 2–5mm angular blocky structure; very firm; weak slickensides, granular fracture; smooth-ped and polished ped fabric; <2% prominent coarse reddish brown (5YR5/4) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; 2–10% 20–60mm subrounded basalt fragments; pH 9.0;

Parent rock: alluvial sediment, clay

Comments

30–40cm has small fragments of basalt and quartz. Soil rests on rounded basalt stones at 180cm. Basalt gravels appear to have stopped further drilling.

Soil classification

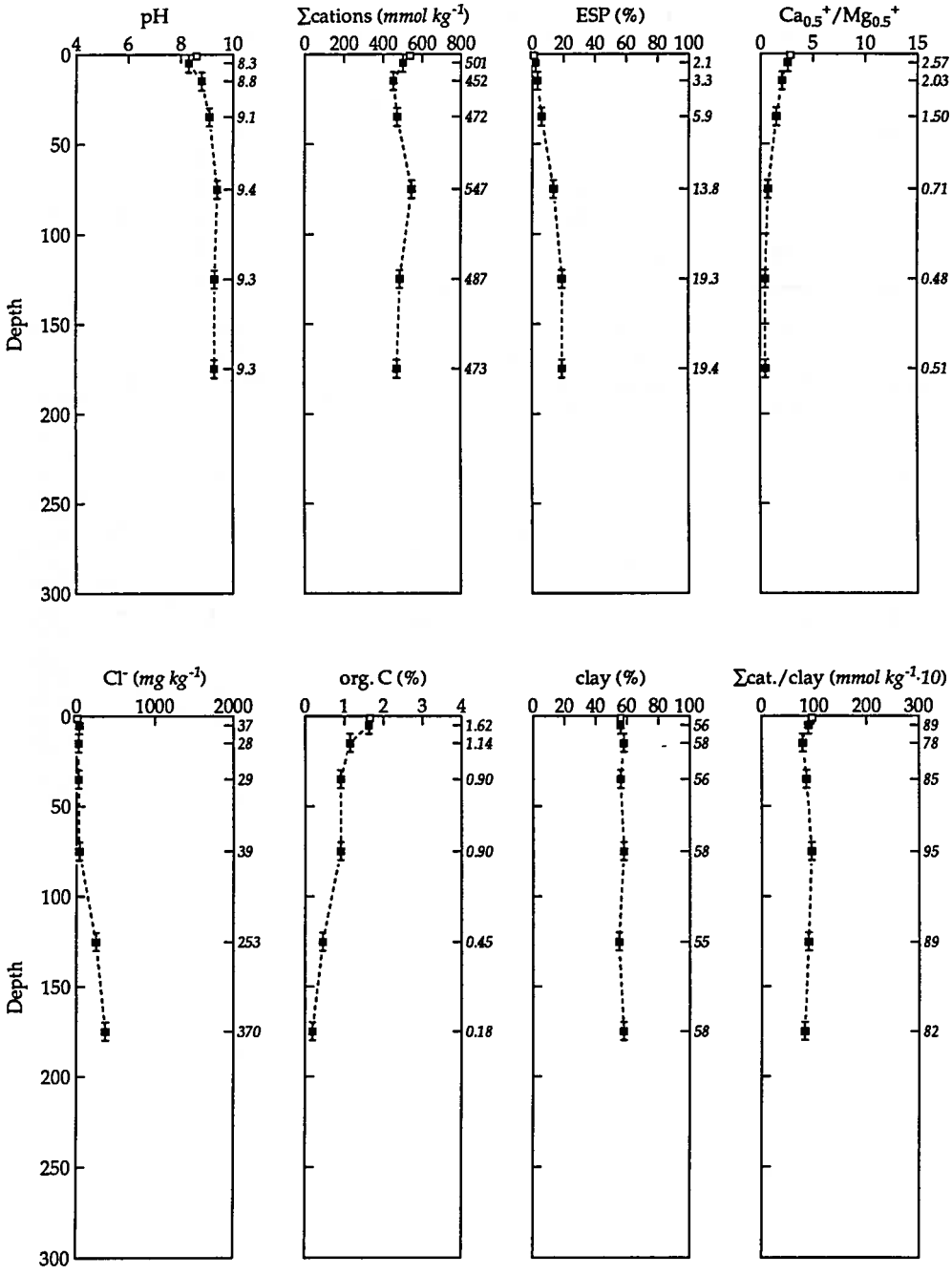
Principal profile form: Ug5.15
Great soil group: Brown clays
Soil taxonomy unit: Pellusterts

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_1p	0–2	8.6	12.9	1.65	0.1	25	16	56
1	A_1p	0–10	8.3	16.8	1.62	0.2	26	14	56
2	A_11	10–20	8.8	15.1	1.14	0.7	24	15	58
3	A_12	30–40	9.1	19.2	0.90	2.3	26	15	56
4	A_13	70–80	9.4	32.9	0.90	3.3	22	16	58
5	B_2v	120–130	9.3	54.8	0.45	2.9	26	16	55
6	B_2	170–180	9.3	63.8	0.18	2.8	20	18	58

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	–	–	379	135	19.4	4.7	<1	537	0.9
37	23.1	13	343	133	14.2	10.3	<1	501	2.1
28	7.3	3	288	142	6.9	15.1	<1	452	3.3
29	2.8	<1	264	175	5.5	27.9	<1	472	5.9
39	1.4	<1	193	271	7.8	75.3	<1	547	13.8
253	1.0	10	125	260	8.1	94.0	<1	487	19.3
370	0.5	15	125	247	9.0	91.7	<1	473	19.4

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed175

Site location

Grid reference: 786700mE 6655200mN
Farmer: R.L.(Bob) Burrell
Site described by D. McGarry on 12 June, 1985
The site is located at a grid point

Elevation: 366m
Farm name: Woodlands

Site description

Slope: 1° Slope direction: 170°
Landform: middle terrace
Surface moist when sampled
Weak surface crust, virgin state
Use: native pasture, wheat
Visible cracks: width 1mm

Topography: gently sloping

Site comments

A very weak surface crust. In some places (50%) the surface is quite solid (i.e., close to hard set), though this could be due to puddling. A sedimentary break at 163cm. No fertilizer has ever been used.

Site vegetation

The following species were noted:

Elaeodendron australe, Geijera parviflora, Eucalyptus albens, Stipa verticellata, Hordeum leporinum, Brassica tournefortii, Bassia quinquecuspis var. villosa, Opuntia stricta.

These specimens were observed but not identified:

245.

Profile description

Soil described by M. E. Heape on 11 February, 1986. Drilled depth 276cm

Horizon	(cm)	(Sample; depth)
A_1	0–45	(1; 0–10) Dark reddish brown (5YR3/3, 10YR4/3 dry) clay loam; moderate 5–10mm subangular blocky structure; moderately weak; earthy fabric; <2% <5mm cracks; <2% 0.075–1mm pores; common very fine roots; pH 7.5;
A_1		(2; 10–20) Dark reddish brown (5YR3/3) clay loam; moderate 5–10mm subangular blocky structure; moderately weak; earthy fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 7.5;

A_1		(3; 30–40) Dark reddish brown (5YR3/2) clay loam; moderate 20–50mm granular structure; very weak; earthy fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.0; genetic boundary, gradual, smooth change to
B_2	45–160	(4; 70–80) Dark reddish brown (5YR3/4) medium clay; <2% faint coarse dark reddish brown (5YR3/2) organic stains; moderate 20–50mm subangular blocky structure; very firm; earthy fabric; <2% <5mm cracks; <2% >5mm pores; few coarse roots; <2% 20–60mm subrounded basalt fragments; pH 8.0;
B_2		(5; 120–130) Reddish brown (5YR4/4) medium clay; moderate 5–10mm platy structure, breaking to moderate 5–10mm subangular blocky structure; very firm; earthy fabric; <2% <5mm cracks; few very fine roots; 2–10% 6–20mm subangular basalt fragments; pH 8.5; stratigraphic boundary, sharp, smooth change to
$2B_2k$	160+	(6; 250–260) Reddish brown (5YR4/4) heavy clay; moderate 10–20mm platy structure, breaking to moderate 10–20mm subangular blocky structure; moderately strong; earthy fabric; <2% prominent medium pink (7.5YR7/4) calcareous nodules; <2% distinct fine dark reddish brown (5YR3/2) manganese stains; <2% <5mm cracks; <2% 6–20mm subangular basalt fragments; pH 8.5;

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

Comments

70–80 looks like B in profile but colour change is definitely not enough. Soil too shattered for tensile strength. Possibly ?a young soil, notice lack of lime in soil above discontinuity and shallow depth of A horizon. The soil below the break is darker than soil above and has lime nodules. 2 x 10–20 samples, 10–20a contains some 0–10 horizon, 10–20b is all 10–20 and is the only one being analysed at present.

Soil classification

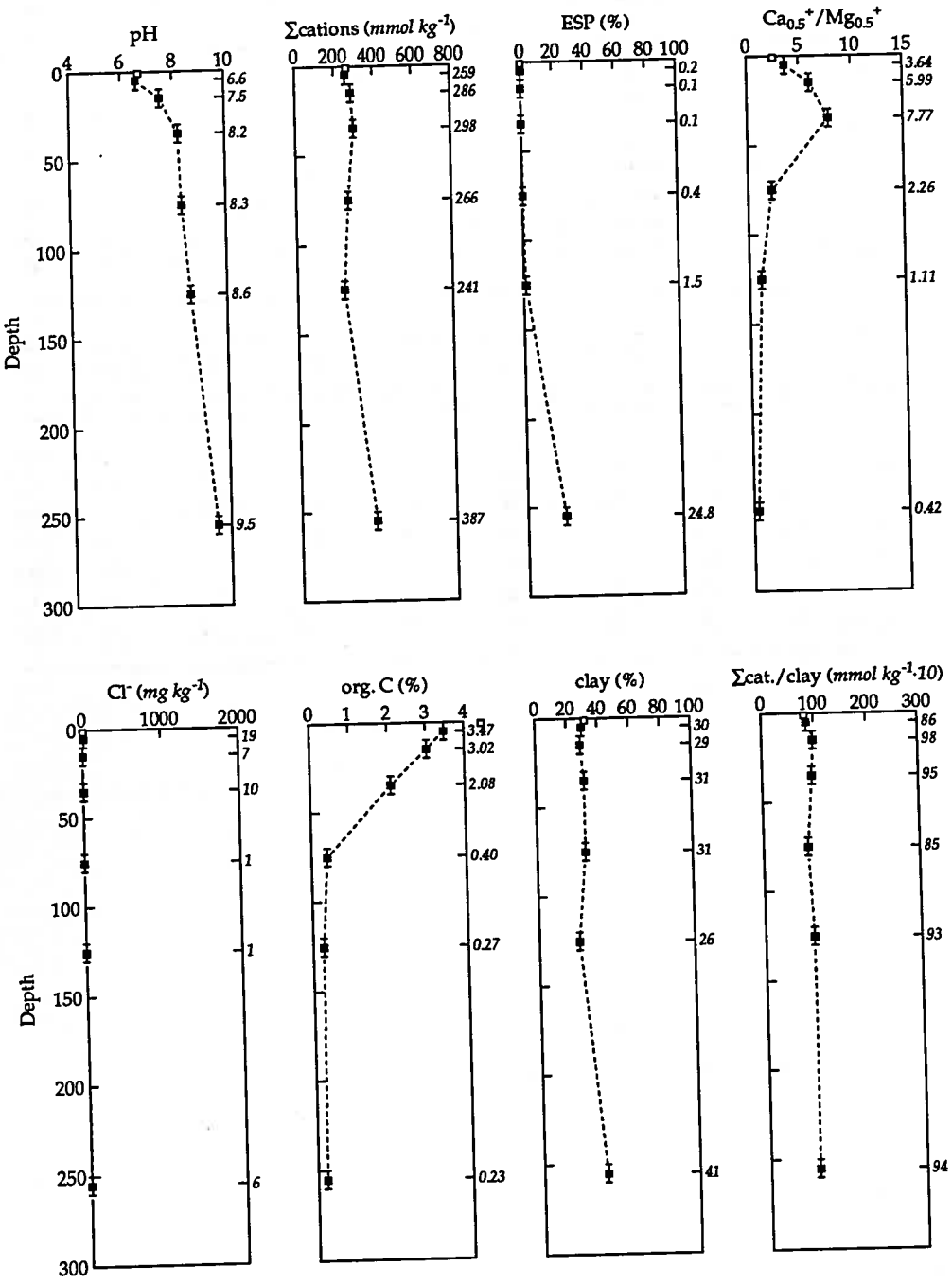
Principal profile form: Dr4.13
Great soil group: Brown clays

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	6.7	10.3	4.45	<0.1	11	49	32
1	$A_1$1	0–10	6.6	29.6	3.47	<0.1	26	38	30
2	$A_1$2	10–20	7.5	15.9	3.02	<0.1	35	31	29
3	$A_1$3	30–40	8.2	16.3	2.08	0.6	36	28	31
4	$B_2$1	70–80	8.3	12.4	0.40	0.2	48	20	31
5	$B_2$2	120–130	8.6	12.2	0.27	0.4	53	20	26
6	$2B_2$k	250–260	9.5	39.5	0.23	3.1	29	27	41

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	–	–	166	66	31.9	0.1	<1	264	<0.1
19	64.7	135	180	49	29.6	0.4	<1	259	0.2
7	15.6	104	226	38	21.8	0.4	<1	286	0.1
10	8.4	104	253	33	12.9	0.2	<1	298	<0.1
<1	<0.1	49	178	79	8.1	1.0	<1	266	0.4
<1	<0.1	43	121	109	6.5	3.5	<1	241	1.5
6	<0.1	10	85	201	5.1	96.2	<1	387	24.8

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed176

Site location

Grid reference: 741300mE 6654100mN
Elevation: 195m
Farmer: Phillip Wall
Farm name: Athelstone
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: low terrace
Surface dry when sampled
Coarse self-mulching surface, cultivated
Use: wheat
Visible cracks: width 1mm

Site comments

Soil surface shows reddish brown–brown patches in cultivated field.

Site vegetation

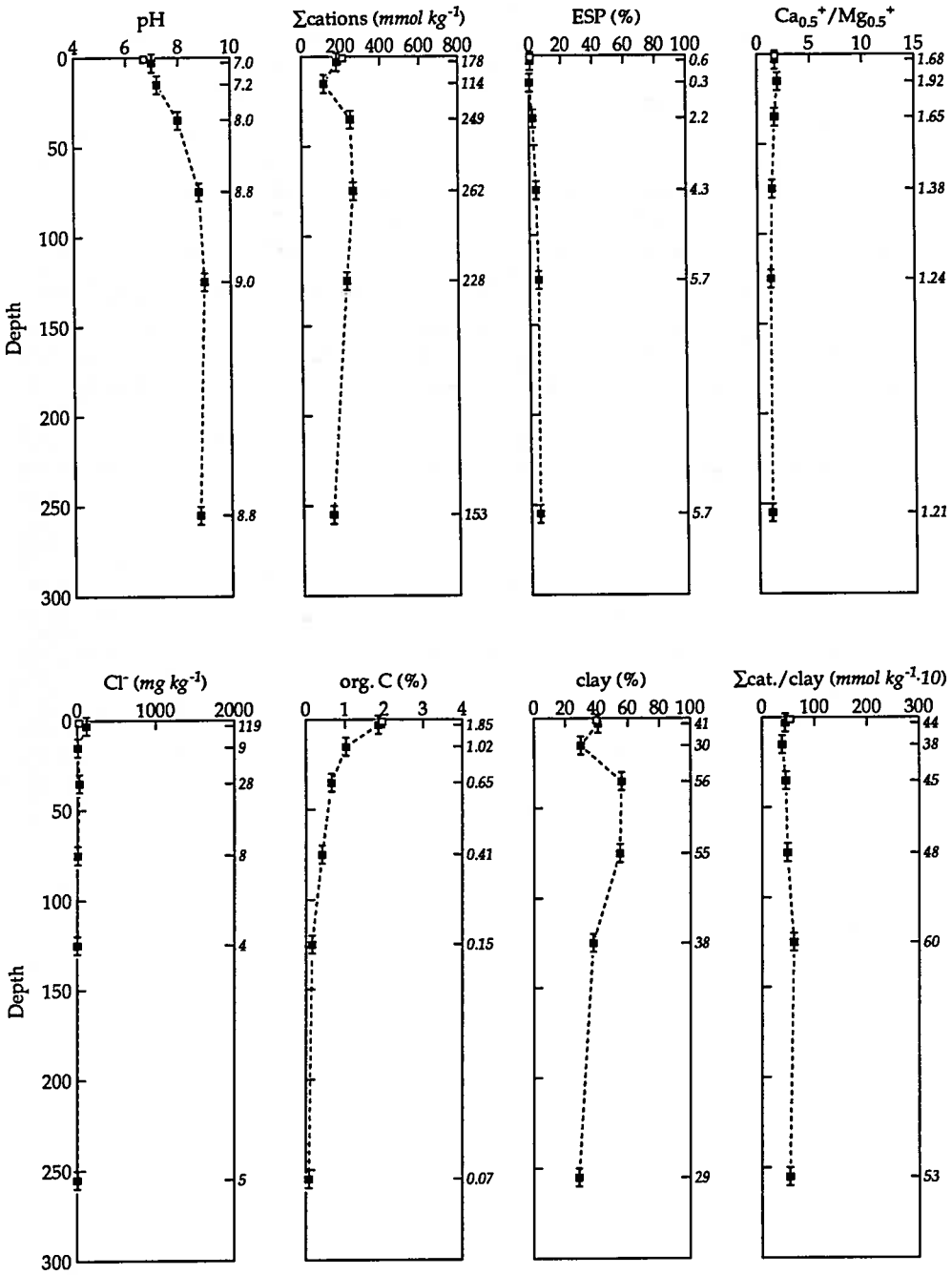
The site was under wheat, and included bare ground.

Profile description

Soil described by G. M. Roberts on 2 September, 1985. Drilled depth 281cm

Horizon	(cm)	(Sample; depth)
A_1p	0–6	(1; 0–6) Dark brown (7.5YR3/2, 10YR5/3 dry) clay loam; weak 2–5mm subangular blocky structure; moderately firm; granular fracture; earthy fabric; 5–10% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 6.0; plough sole, sharp, smooth change to
A_1	6–30	(2; 10–20) Dark brown (7.5YR3/2, 7.5YR4/2 dry) sandy clay loam; 10–20% distinct very coarse light grey (10YR7/2) patches of soil, filling cracks; moderate 5–10mm angular blocky structure; very firm; earthy and smooth-ped fabric; 2–5% 5–10mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 7.5;
B_2	30–110	(3; 30–40) Dark reddish brown (5YR3/2) medium heavy clay; strong 10–20mm angular blocky structure, breaking to strong 5–10mm wedge structure; moderatel firm; moderate slickensides, smooth-ped and earthy fabric; 2–5% 5–10mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 8.0;
B_2		(4; 70–80) Yellowish red (5YR4/6) medium heavy clay; moderate 10–20mm angul

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed177

Site location

Grid reference: 744050mE 6654000mN
Elevation: 195m
Farmer: R.A.(Richard) Williams
Farm name: Merinda
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 comments

Difficult core recovery. This site has higher clay content than site 176.

Site vegetation

The site was under wheat, and included bare ground.

Profile description

Soil described by G. M. Roberts on 29 August, 1985. Drilled depth 296cm

Horizon	(cm)	(Sample; depth)
A_1p	0–10	(1; 0–10) Dark greyish brown (10YR4/2, 10YR4/2 dry) medium clay; weak 5–10mm subangular blocky structure, breaking to weak <2mm subangular blocky structure; moderately firm; rough fracture; earthy and smooth-ped fabric; <2% distinct medium very pale brown (10YR8/3) calcareous nodules; 5–10% 5–10mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 9.0; plough sole, clear, smooth change to
A_1	10–150	(2; 10–20) Dark greyish brown (10YR4/2, 10YR4/2 dry) medium heavy clay; moderate 20–50mm lenticular structure, breaking to moderate 5–10mm wedge structure; moderately firm; weak slickensides, 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		(3; 30–40) Dark greyish brown (10YR4/2, 10YR4/2 dry) medium heavy clay; moderate 20–50mm lenticular structure, breaking to moderate 5–10mm wedge structure; moderately firm; 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 9.0;
A_1		(4; 70–80) Dark greyish brown (10YR4/2) medium clay; moderate 20–50mm angular blocky structure, breaking to moderate 5–10mm angular blocky structure; moderately firm; weak slickensides, smooth-ped and polished ped fabric; <2% <5mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 9.0;
A_1		(5; 120–130) Very dark greyish brown (10YR3/2) medium clay; moderate 20–50mm lenticular structure, breaking to moderate 5–10mm angular blocky structure; moderately firm; weak slickensides, smooth-ped and polished ped fabric; <2% <5mm cracks; 2–5% 0.075–1mm pores; pH 9.0; genetic boundary, gradual, smooth change to
B_2	150+	(6; 250–260) Dark yellowish brown (10YR4/4) medium clay; 10–20% distinct medium dark grey (10YR4/1) patches of soil, filling cracks; weak >100mm subangular blocky structure, breaking to weak 5–10mm subangular blocky structure; moderately firm; nodular fracture; smooth-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; pH 9.0;

Parent rock: alluvial sediment, clay

Comments

Very few fine calcium carbonate segregations found from 150–250.

Soil classification

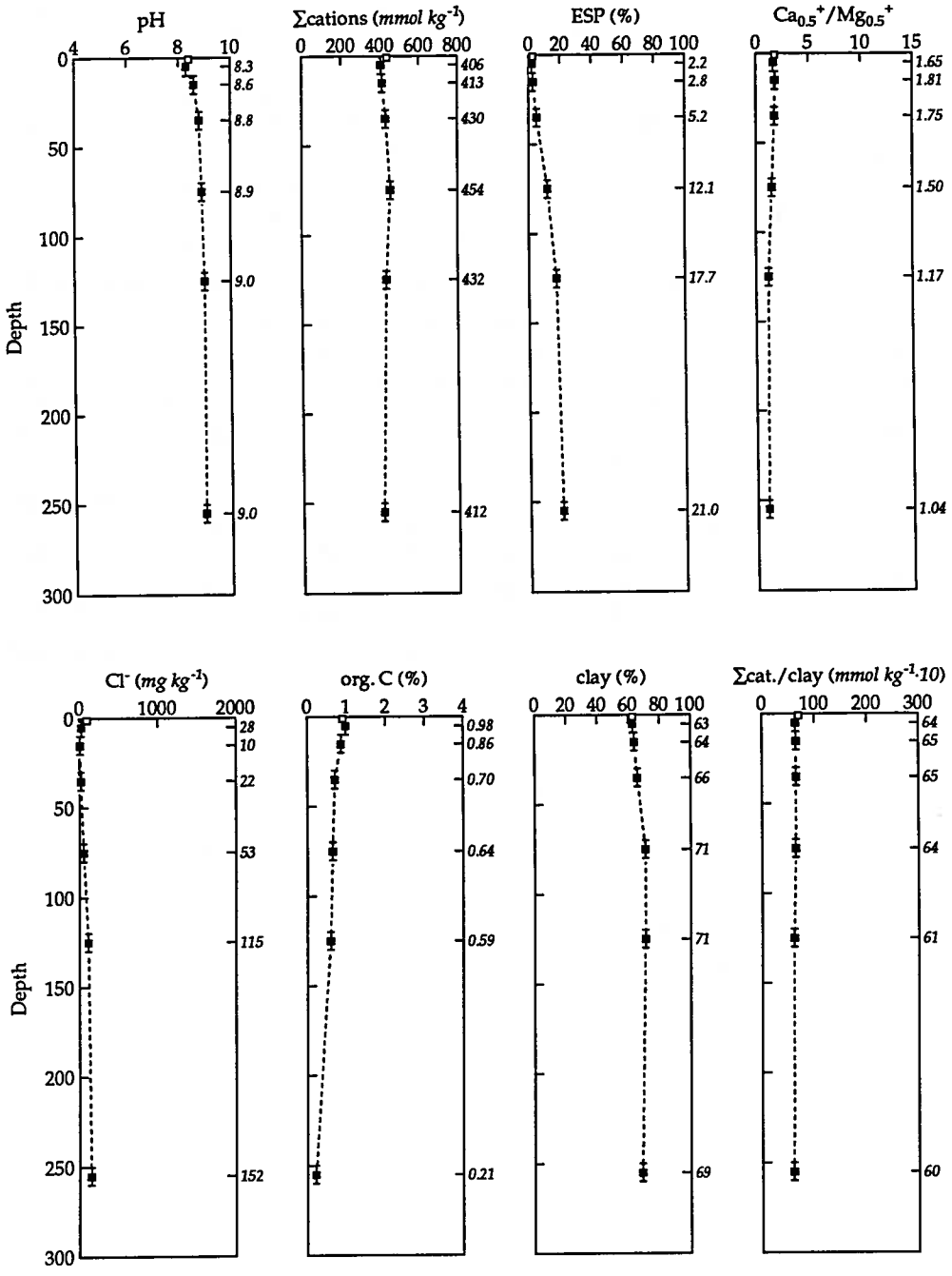
Principal profile form: Ug5.15
Great soil group: Brown clays

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_1p	0–2	8.4	27.3	0.91	0.1	18	18	63
1	A_1p	0–10	8.3	12.9	0.98	<0.1	16	19	63
2	A_11	10–20	8.6	9.6	0.86	0.1	16	18	64
3	A_12	30–40	8.8	12.0	0.70	0.3	13	20	66
4	A_13	70–80	8.9	18.9	0.64	0.4	8	20	71
5	A_14	120–130	9.0	29.3	0.59	0.8	7	20	71
6	B_2	250–260	9.0	40.9	0.21	0.8	9	21	69

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 %
99	–	–	261	146	17.4	11.9	<1	436	2.7
28	3.0	31	239	145	13.3	9.0	<1	406	2.2
10	14.3	30	251	139	12.3	11.6	<1	413	2.8
22	13.1	24	255	146	8.0	22.2	<1	430	5.2
53	5.6	44	234	156	8.7	55.1	<1	454	12.1
115	1.6	55	185	159	11.4	76.5	<1	432	17.7
152	2.7	34	162	155	8.3	86.3	<1	412	21.0

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed178

Site location

Grid reference: 746800mE 6653900mN
Farmer: R.C.(Ron) Swansbra
Site described by G. M. Roberts on 23 June, 1985
The site is located at a grid point

Elevation: 197m
Farm name: Lochelgin

Site description

Slope: 2° Slope direction: 270°
Landform: floodplain
Surface dry when sampled
Fine self-mulching surface, trampled
Use: cattle pasture, irrigated cotton, wheat
Visible cracks: width 1mm, 2 per metre, depth 600mm

Topography: easy sloping

Site comments

This site is heavily timbered and grassed and is often flooded – the position is on a lower level floodplain. The surface has been eroded and is irregular.

Site vegetation

The following species were noted:

Eucalyptus camaldulensis, Paspalidium.

These specimens were observed but not identified:

96.

Profile description

Soil described by G. M. Roberts on 26 August, 1985. Drilled depth 278cm

Horizon	(cm)	(Sample; depth)
A_1f	0–8	(1; 0–8) Very dark greyish brown (10YR3/2, 10YR3/2 dry) medium heavy clay; moderate 2–5mm subangular blocky structure; moderately strong; earthy and smooth-ped fabric; 5–10% 5–10mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 7.5; stratigraphic boundary, abrupt, smooth change to
A_1f	8–40	(2; 10–20) Very dark greyish brown (10YR3/2) medium heavy clay; moderate 10–20mm subangular blocky structure, breaking to moderate 2–5mm subangular blocky structure; very firm; earthy and smooth-ped fabric; 2–5% 5–10mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 7.5;

A_1		(3; 30–40) Very dark greyish brown (10YR3/2) medium heavy clay; moderate 20–50mm subangular blocky structure, breaking to moderate 5–10mm angular blocky structure; very firm; smooth-ped and earthy fabric; 2–5% 5–10mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 8.0; genetic boundary, diffuse, smooth change to
A_1	40–215	(4; 70–80) Very dark greyish brown (10YR3/2) medium heavy clay; weak 50–100mm subangular blocky structure; very firm; nodular fracture; smooth-ped and earthy fabric; <2% 5–10mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 7.5;
A_1		(5; 120–130) Very dark greyish brown (10YR3/2) medium heavy clay; weak 50–100mm subangular blocky structure; moderately strong; weak slickensides, nodular fracture; smooth-ped fabric; 2–5% 10–20mm cracks; 2–5% 0.075–1mm pores; few very fine roots; pH 8.3;
B_2	215+	(6; 250–260) Dark brown (7.5YR4/3) medium clay; 10–20% faint coarse very pale brown (10YR7/4) patches of soil, filling cracks; weak 50–100mm subangular blocky structure, breaking to moderate 5–10mm subangular blocky structure; very firm; nodular fracture; smooth-ped and earthy fabric; <2% 5–10mm cracks; 2–5% 0.075–1mm pores; pH 8.5; genetic boundary, abrupt, smooth change to

Parent rock: alluvial sediment, clay

Comments

This site subject to frequent high flooding but no layering from recent flooding can be seen. There is plenty of faunal activity in upper part.

Soil classification

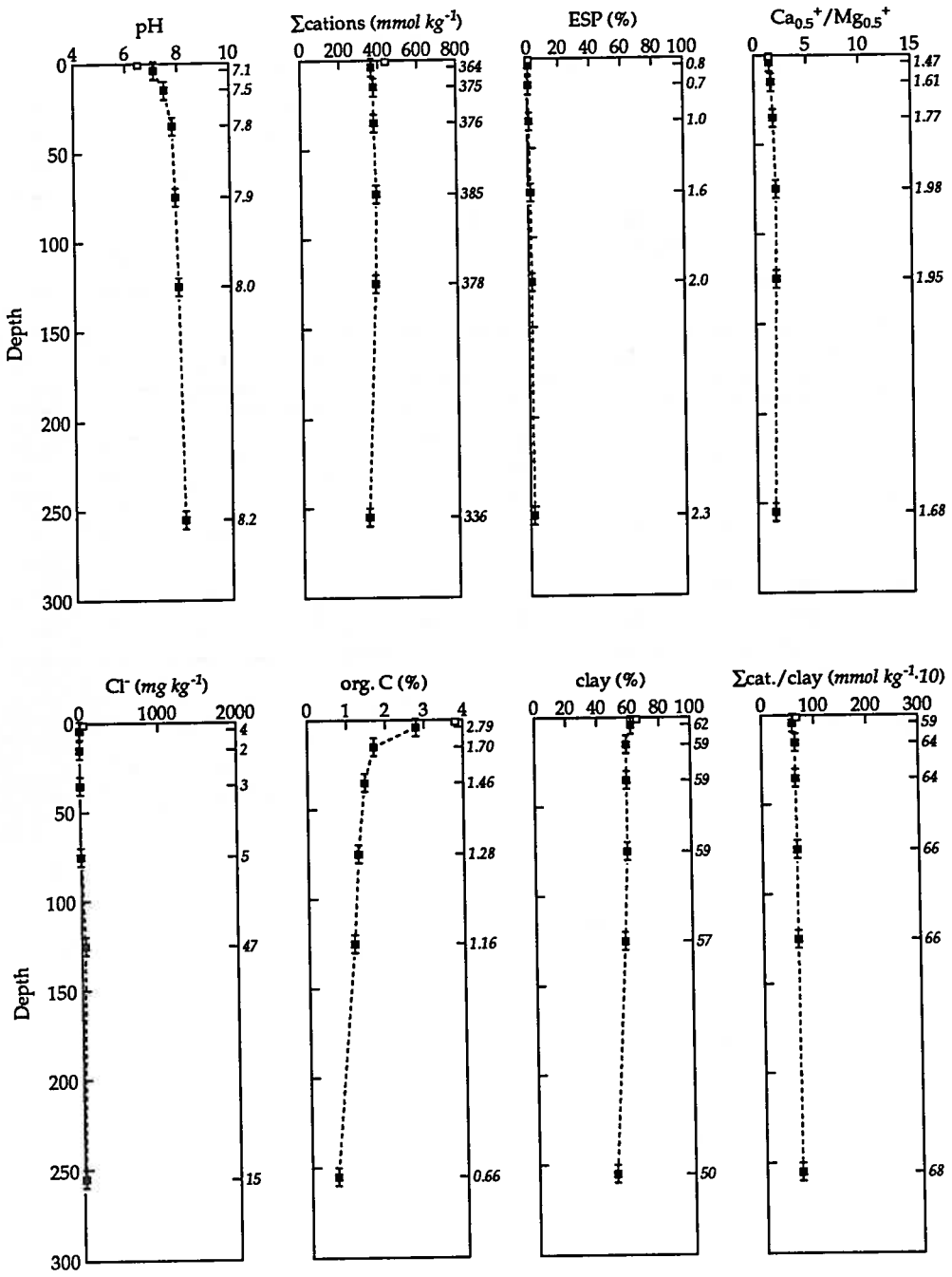
Principal profile form: Ug5.15
Great soil group: Alluvial soils

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_1f1	0–2	6.5	25.1	3.80	<0.1	2	26	66
1	A_1f1	0–8	7.1	11.9	2.79	<0.1	5	28	62
2	A_1f2	10–20	7.5	7.6	1.70	<0.1	10	28	59
3	$A_1$1	30–40	7.8	5.4	1.46	0.1	11	27	59
4	$A_1$2	70–80	7.9	4.9	1.28	<0.1	12	28	59
5	$A_1$3	120–130	8.0	6.1	1.16	<0.1	11	30	57
6	B_2	250–260	8.2	6.1	0.66	<0.1	17	33	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 %
53	–	–	235	166	32.2	4.2	<1	438	1.0
4	2.5	228	206	140	15.3	2.9	<1	364	0.8
2	0.4	128	225	140	7.9	2.5	<1	375	0.7
3	<0.1	65	234	132	6.3	3.6	<1	376	1.0
5	<0.1	55	249	126	4.5	6.0	<1	385	1.6
47	1.8	80	242	124	4.6	7.4	<1	378	2.0
15	1.0	88	203	121	4.3	7.7	<1	336	2.3

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed179

Site location

Grid reference: 749600mE 6653900mN
Farmer: W.J.(Bill) Cathcart
Site described by G. M. Roberts on 24 March, 1985
The site is located at a grid point

Elevation: 198m
Farm name: Wild Willows

Site description

Slope: 2° Slope direction: 060°
Landform: low terrace
Surface dry when sampled
Soft surface
Use: native pasture, native forest, cattle pasture
Visible cracks: width 2mm, 1 per metre, depth 340mm

Topography: gently undulating

Site comments

This has been cleared but not used extensively because of frequent flooding. Wheat. (Also not[e] wiregrass at site).

Site vegetation

The following species were noted:

Eucalyptus camaldulensis.

Profile description

Soil described by W. T. Ward on 26 June, 1986. Drilled depth 261cm

Horizon	(cm)	(Sample; depth)
A_1	0–95	(1; 0–10) Very dark grey (10YR3/1, 10YR5/2 dry) light medium clay; moderate 10–20mm subangular blocky structure, with moderate 2–5mm granular structure; moderately firm; smooth-ped fabric; 2–5% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 7.0;
A_1		(2; 10–20) Very dark grey (10YR3/1) light clay; moderate 50–100mm angular blocky structure; very firm; smooth-ped fabric; <2% 5–10mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 7.8;
A_1		(3; 30–40) Very dark grey (10YR3/1) medium clay; weak 50–100mm prismatic structure, breaking to moderate 20–50mm angular blocky structure; very firm; smooth-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.0;

A_1		(4; 70–80) Dark grey (10YR4/1) medium clay; weak >100mm wedge structure, breaking to moderate 20–50mm angular blocky structure; very firm; weak slickensides, smooth fracture; smooth–ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.5; genetic boundary, gradual, smooth change to
B_2	95–150	(5; 120–130) Dark greyish brown (10YR4/2) light clay; 20–50% prominent medium dark grey (10YR4/1) organic stains; weak 20–50mm prismatic structure, breaking to moderate 10–20mm angular blocky structure; very firm; smooth fracture; smooth–ped fabric; <2% <5mm cracks; few very fine roots; pH 9.0; stratigraphic boundary, clear, smooth change to
2AC	150+	(6; 250–260) Brown (10YR5/3) fine sandy clay; 2–10% distinct fine dark grey (10YR4/1) organic stains; weak >100mm prismatic structure; moderately strong; smooth fracture; smooth–ped fabric; <2% 2–6mm subangular rock fragments; pH 8.0;

Parent rock: alluvial sediment, clay, sand

Comments

At 150 to 160 there is a sandy alluvial lens, passing at 175cm to darker, still prismatic, buried horizon. The fragments at 250–260 are possibly baked clay – see also site 199. Alluvial soil (WTW). 120–130 could be AC.

Soil classification

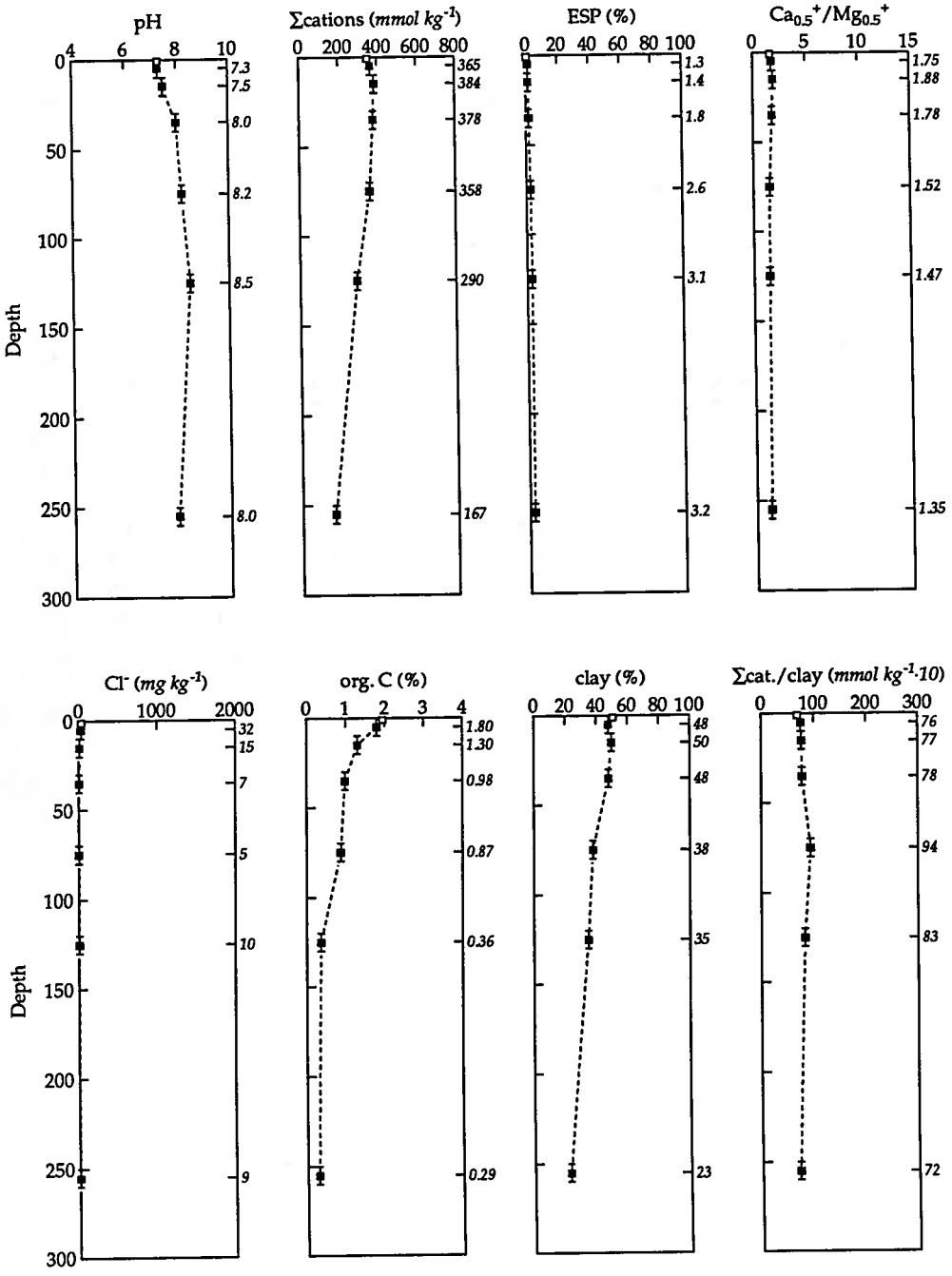
Principal profile form: Ug5.17
Great soil group: Prairie soils
Soil taxonomy unit: Ustifluvents

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$1	0–2	7.3	7.8	1.95	<0.1	21	25	51
1	$A_1$1	0–10	7.3	16.6	1.80	0.1	27	22	48
2	$A_1$2	10–20	7.5	6.8	1.30	<0.1	24	24	50
3	$A_1$3	30–40	8.0	4.6	0.98	<0.1	25	25	48
4	$A_1$4	70–80	8.2	5.8	0.87	<0.1	46	14	38
5	B_2	120–130	8.5	7.4	0.36	0.1	44	20	35
6	2AC	250–260	8.0	4.4	0.29	<0.1	64	13	23

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 %
37	–	–	208	127	13.7	1.8	<1	350	0.5
32	5.1	77	224	128	8.2	4.6	<1	365	1.3
15	3.8	40	244	130	5.3	5.3	<1	384	1.4
7	0.8	39	235	132	4.6	6.7	<1	378	1.8
5	0.4	61	207	136	5.1	9.4	<1	358	2.6
10	0.1	53	165	112	4.0	9.0	<1	290	3.1
9	0.1	46	91	68	3.2	5.3	<1	167	3.2

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed180

Site location

Grid reference: 752300mE 6653800mN
stock route
Site described by M. Korevaar on 6 July, 1985
The site is located at a grid point

Elevation: 202m
at Yarral

Site description

Slope: 0°
Landform: middle terrace
Surface dry when sampled
Coarse self-mulching surface
Use: irrigated cotton, stock route

Topography: flat

Profile description

Soil described by M. Korevaar on 6 March, 1985. Drilled depth 300cm

Horizon	(cm)	(Sample; depth)
A_1	0–8	(1; 0–8) Very dark greyish brown (10YR3/2, 10YR4/1 dry) medium heavy clay; moderate 10–20mm subangular blocky structure; moderately strong; rough-ped fabric; 2–5% <5mm cracks; <2% 1–2mm pores; few fine roots; pH 6.0; genetic boundary, clear, smooth change to
A_1	8–40	(2; 10–20) Very dark greyish brown (10YR3/2, 10YR4/1 dry) medium heavy clay; moderate 50–100mm subangular blocky structure, breaking to moderate 10–20mm subangular blocky structure; moderately strong; rough-ped fabric; 2–5% 5–10mm cracks; <2% 1–2mm pores; few fine roots; pH 6.5;
A_1		(3; 30–40) Very dark grey (10YR3/1, 10YR4/1 dry) medium heavy clay; moderate 50–100mm subangular blocky structure, breaking to moderate 10–20mm subangular blocky structure; moderately strong; rough-ped fabric; 2–5% 5–10mm cracks; 2–5% 1–2mm pores; few fine roots; pH 7.0; genetic boundary, gradual, smooth change to
A_1	40–78	(4; 70–78) Very dark greyish brown (10YR3/2) medium clay; 20–50% distinct coarse dark greyish brown (10YR4/2) flecks produced by faunal mixing; weak >100mm angular blocky structure, breaking to weak 20–50mm angular blocky structure; moderately strong; weak slickensides, nodular fracture; smooth-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.7; genetic boundary, diffuse, smooth change to
B_2k	78–120	(5; 100–110) Brown (10YR4/3) medium heavy clay; weak 50–100mm subangular blocky structure; moderately strong; nodular fracture; rough-ped fabric; 2–10%

prominent medium very pale brown (10YR8/3) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; common very fine roots; pH 8.3; genetic boundary, diffuse, smooth change to

C_2 120+ (6; 120–130) Brown (10YR4/3) fine sandy clay; weak 20–50mm angular blocky structure; moderately strong; nodular fracture; rough-ped fabric; 2–10% prominent medium very pale brown (10YR8/3) calcareous nodules; 2–10% distinct coarse very dark greyish brown (10YR3/2) organic stains; <2% <5mm cracks; few very fine roots; pH 8.1;

C_2 (7; 250–260) Dark yellowish brown (10YR4/4) silty clay loam; apedal massive; moderately weak; nodular fracture; earthy fabric; 2–10% distinct coarse dark greyish brown (10YR4/2) organic stains; <2% <5mm cracks; <2% 1–2mm pores; pH 7.8;

Soil classification

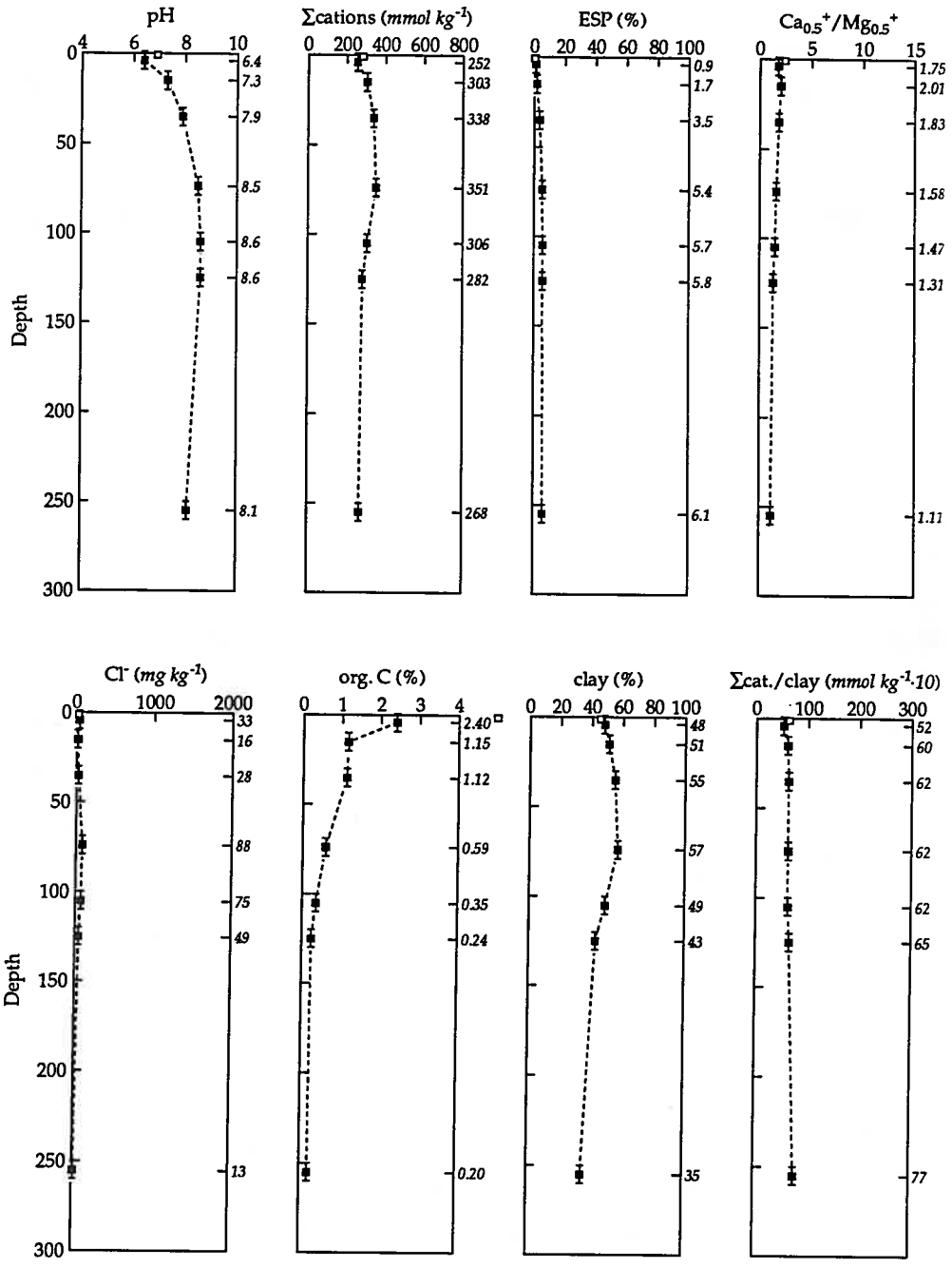
Principal profile form: Ug6.1
Great soil group: Brown clays

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	6.9	20.4	4.99	0.1	24	22	45
1	$A_1$1	0–8	6.4	10.2	2.40	<0.1	22	26	48
2	$A_1$2	10–20	7.3	5.7	1.15	<0.1	21	26	51
3	$A_1$3	30–40	7.9	8.7	1.12	<0.1	19	24	55
4	$A_1$4	70–78	8.5	17.2	0.59	0.1	19	23	57
5	B_2k	100–110	8.6	25.8	0.35	4.7	23	22	49
6	C_2	120–130	8.6	22.4	0.24	1.2	35	20	43
7	$C_2$2	250–260	8.1	8.7	0.20	<0.1	42	23	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 %
20	–	–	168	70	41.6	<0.1	<1	280	<0.1
33	11.6	234	141	81	27.6	2.3	<1	252	0.9
16	0.5	100	192	96	10.0	5.3	<1	303	1.7
28	0.2	82	206	112	7.9	11.9	<1	338	3.5
88	0.2	81	198	125	8.9	18.9	<1	351	5.4
75	0.2	31	167	114	7.7	17.5	<1	306	5.7
49	0.2	26	148	113	5.6	16.4	<1	282	5.8
13	0.3	31	130	117	3.9	16.4	<1	268	6.1

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed181

Site location

Grid reference: 755200mE 6653750mN
Farmer: A.J.(Fred) Perry
Site described by D. Page on 2 April, 1985
The site is located at a grid point

Elevation: 203m
Farm name: Wentworth

Site description

Slope: 0°
Landform: low terrace, subject to ponding
Surface dry when sampled
Cultivated
Use: irrigated cotton
Visible cracks: width 1mm

Topography: flat

Site comments

Ripping has brought up large clods 10" to 1 foot diameter, see photo. 30 degrees mag. to Wentworth homestead.

Site vegetation

The site was under cotton.

Profile description

Soil described by W. T. Ward on 30 June, 1986. Drilled depth 261cm

Horizon	(cm)	(Sample; depth)
A_1p	0–10	(1; 0–10) Dark brown (7.5YR3/2, 10YR3/3 dry) light medium clay; moderate 2–5mm granular structure, with weak 2–5mm subangular blocky structure; very strong; smooth-ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.8; plough sole, abrupt, smooth change to
A_1	10–50	(2; 10–20) Dark brown (7.5YR3/2) medium clay; weak 20–50mm subangular block structure; very firm; smooth-ped fabric; <2% distinct fine very pale brown (10YR7/3) calcareous soft segregations; <2% 5–10mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 2–6mm subrounded quartz fragments; pH 8.8;
A_1		(3; 30–40) Dark brown (7.5YR3/2) medium heavy clay; moderate 20–50mm subangular blocky structure; very firm; smooth-ped fabric; <2% distinct fine very pale brown (10YR7/3) calcareous soft segregations; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.8; genetic boundary, gradual, smooth change to

B_2	50–180	(4; 70–80) Brown (10YR4/3) medium clay; <2% faint fine dark grey (10YR4/1) flecks produced by faunal mixing; weak 50–100mm angular blocky structure; very firm; nodular fracture; smooth–ped fabric; <2% distinct fine light grey (10YR7/2) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.8;
B_2		(5; 120–130) Dark brown (7.5YR4/4) light clay; <2% distinct fine dark grey (10YR4/1) cutans; weak 50–100mm prismatic structure, breaking to moderate 50–100mm angular blocky structure; very firm; nodular fracture; smooth–ped fabric; <2% distinct fine very pale brown (10YR7/3) calcareous soft segregations; <2% distinct fine dark grey (10YR4/1) manganese stains; <2% <5mm cracks; <2% 0.075–1mm pores; pH 9.0; genetic boundary, diffuse, smooth change to
C	180+	(6; 250–260) Brown (7.5YR5/4) medium clay; <2% distinct fine dark brown (7.5YR4/2) flecks produced by faunal mixing; weak 50–100mm prismatic structure, breaking to moderate 20–50mm angular blocky structure; very firm; weak slickensides, nodular fracture; smooth–ped and polished ped fabric; <2% distinct fine light grey (10YR7/2) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm pores; pH 9.0;

Parent rock: alluvial sediment, mixed texture, with lime

Comments

Weak effervescence with acid in fine earth 0–10. Carbonate is mostly soft, but there are some nodules especially at 200 plus.

Soil classification

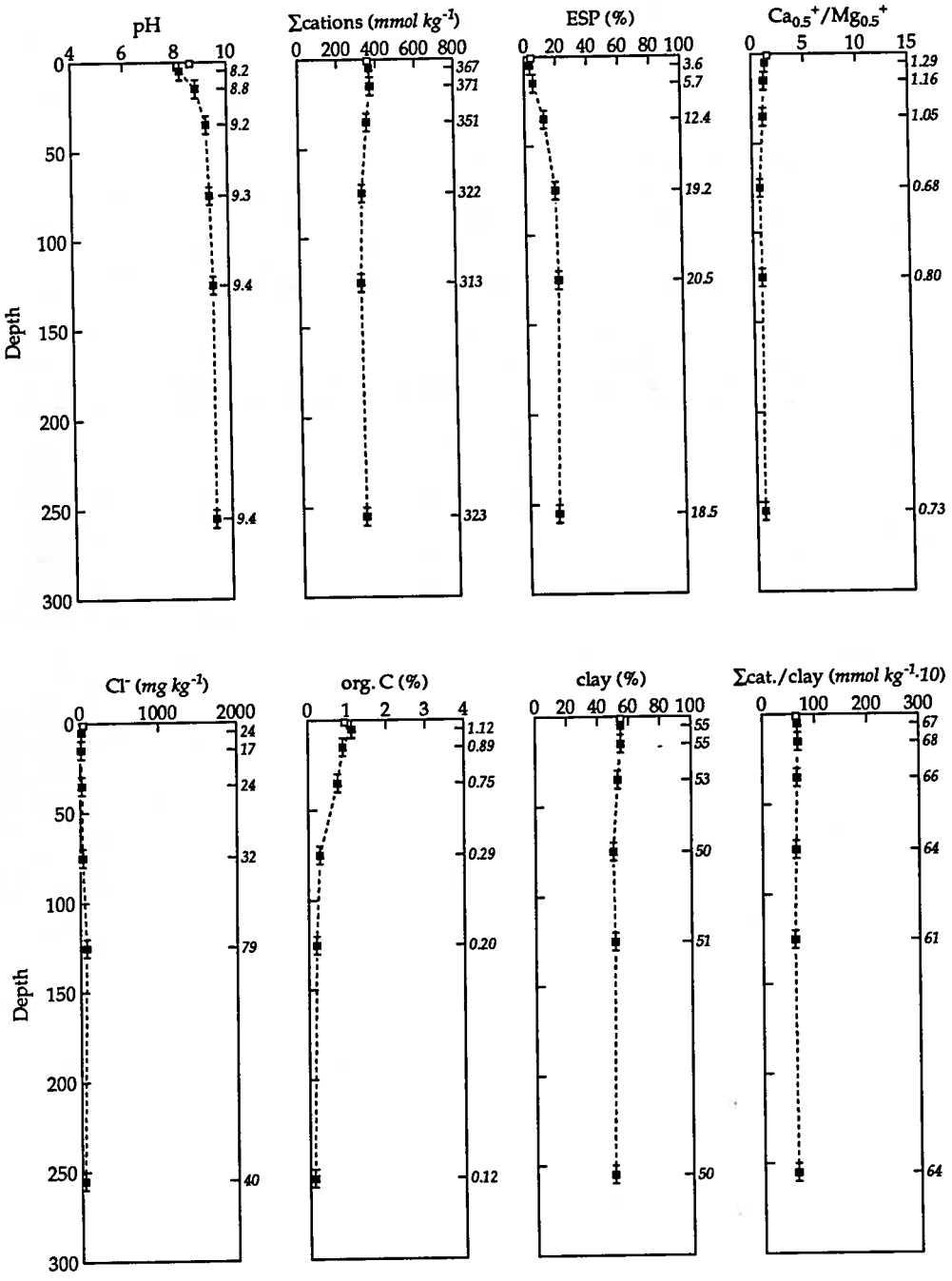
Principal profile form: Ug5.15
Great soil group: Brown clays
Soil taxonomy unit: Haplumbrepts

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_1p	0–2	8.6	24.7	0.94	0.6	21	22	55
1	A_1p	0–10	8.2	24.2	1.12	0.5	22	21	55
2	A_1	10–20	8.8	18.7	0.89	0.7	21	22	55
3	A_1	30–40	9.2	27.9	0.75	2.2	20	23	53
4	B_2	70–80	9.3	31.9	0.29	0.5	22	27	50
5	B_2	120–130	9.4	32.6	0.20	1.1	24	23	51
6	C	250–260	9.4	32.3	0.12	1.2	27	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 %
43	–	–	202	131	9.3	16.5	<1	358	4.6
24	0.3	9	195	151	7.2	13.3	<1	367	3.6
17	0.9	5	186	159	5.3	21.0	<1	371	5.7
24	1.6	2	156	148	4.0	43.6	<1	351	12.4
32	0.4	11	103	152	4.4	61.8	<1	322	19.2
79	6.3	15	109	136	4.3	64.1	<1	313	20.5
40	4.3	10	110	149	5.1	59.8	<1	323	18.5

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed182

Site location

Grid reference: 757800mE 6653700mN
Elevation: 205m
Farmer: Clive Jones
Farm name: Thornbro
Site described by G. M. Roberts on 25 April, 1985
The site is located at a grid point

Site description

Slope: 0°
Topography: flat
Landform: middle terrace
Surface dry when sampled
Fine self-mulching surface, trampled
Visible cracks: width 1mm

Site vegetation

The following species were noted:

Eucalyptus populnea, Geijera parviflora, Casuarina cunninghamiana, Panicum ?decompositum, Bassia quinquecuspis.

Profile description

Soil described by G. M. Roberts on 26 April, 1985. Drilled depth 274cm

Horizon	(cm)	(Sample; depth)
A_1	0–30	(1; 0–10) Very dark grey (10YR3/1, 10YR3/2 dry) light clay; weak 20–50mm subangular blocky structure; moderately firm; granular fracture; earthy fabric; 2–5% <5mm cracks; <2% 0.075–1mm pores; common very fine roots; pH 8.7;
A_1		(2; 10–20) Very dark greyish brown (10YR3/2, 10YR4/2 dry) light medium clay; weak 50–100mm subangular blocky structure; moderately strong; rough fracture; earthy fabric; 5–10% 5–10mm cracks; <2% 2–5mm pores; few very fine roots; pH 8.8; genetic boundary, clear, smooth change to
B_1	30–70	(3; 30–40) Dark greyish brown (10YR4/2) medium clay; moderate 20–50mm angular blocky structure; rigid; smooth-ped and earthy fabric; <2% distinct fine very pale brown (10YR8/3) calcareous nodules; 2–5% 5–10mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 9.0; genetic boundary, clear, smooth change to
B_21	70–180	(4; 70–80) Brown (10YR4/3) medium clay; weak 50–100mm subangular blocky structure; moderately strong; rough fracture; earthy fabric; <2% distinct fine very pale brown (10YR8/3) calcareous nodules; <2% <5mm cracks; <2% 0.075–1mm

pores; few very fine roots; pH 9.0;

$B_2$2 — (5; 120–130) Brown (10YR4/3) medium clay; <2% distinct fine light yellowish brown (10YR6/4) patches of sediment, filling cracks; weak 50–100mm subangular blocky structure; moderately firm; rough fracture; earthy fabric; <2% fine manganese nodules; <2% fine calcareous soft segregations; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.7; genetic boundary, diffuse, smooth change to

$B_2$3 180+ — (6; 250–260) Brown (10YR4/3) light medium clay; 2–10% distinct medium brownish yellow (10YR6/6) mottles; weak 50–100mm subangular blocky structure; very firm; nodular fracture; smooth-ped and earthy fabric; <2% distinct fine black (10YR2/1) manganese nodules; <2% fine calcareous soft segregations; <2% <5mm cracks; <2% 0.075–1mm pores; pH 8.0;

Soil classification

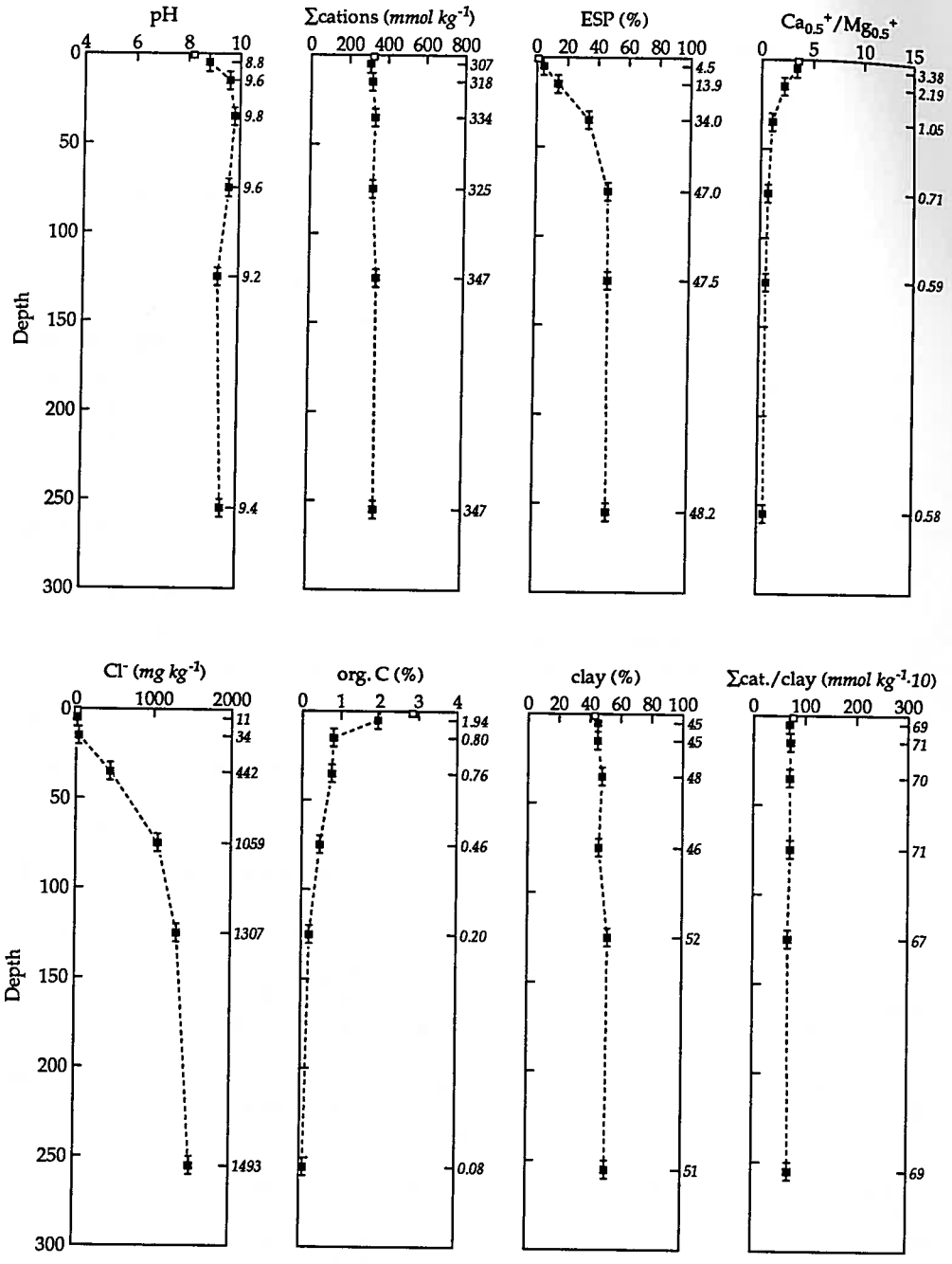
Principal profile form: Ug5.15
Great soil group: Brown clays

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	0–2	8.2	22.3	2.84	1.9	27	24	43
1	A_1	0–10	8.8	19.5	1.94	1.2	34	17	45
2	A_1	10–20	9.6	28.4	0.80	4.7	32	17	45
3	B_1	30–40	9.8	67.2	0.76	4.3	28	19	48
4	$B_2$1	70–80	9.6	133.7	0.46	2.5	29	21	46
5	$B_2$2	120–130	9.2	156.7	0.20	0.1	23	25	52
6	$B_2$3	250–260	9.4	145.4	0.08	0.2	33	15	51

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 %
14	–	–	233	66	21.4	2.9	<1	323	0.9
11	6.3	44	214	64	14.8	13.8	<1	307	4.5
34	15.9	7	184	84	6.5	44.4	<1	318	13.9
442	3.4	8	110	105	6.0	113.6	<1	334	34.0
1059	0.2	18	69	98	5.3	152.9	<1	325	47.0
1307	0.2	22	66	111	4.9	164.8	<1	347	47.5
1493	0.2	15	64	110	5.9	167.1	<1	347	48.2

Soil chemistry profiles



Namoi Valley soil study: Edgeroi Sheet

Site ed183

Site location

Grid reference: 760700mE 6653700mN
Elevation: 209m
Farmer: G. Darling
Farm name: Midgee
Site described by G. M. Roberts on 26 May, 1985
The site is located at a grid point

Site description

Slope: 0°
Topography: flat
Landform: middle terrace
Surface dry when sampled
Weak surface crust, trampled
Use: cattle pasture
Visible cracks: width 1mm

Site comments

Surface cracks filled by cattle trampling. Few waterworn gravels up to 6cm diameter on surface. Composition silcrete, basalt, volcanic (? rhyolite), heavily iron–coated.

Site vegetation

The site included bare ground.

Profile description

Soil described by G. M. Roberts on 1 May, 1985. Drilled depth 267cm

Horizon	(cm)	(Sample; depth)
A_1	0–0	(1; 0–10) Dark greyish brown (10YR4/2, 10YR5/2 dry) medium clay; weak 20–50mm subangular blocky structure; very strong; rough fracture; earthy fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 6.5;
A_1	0–80	(2; 10–20) Very dark grey (10YR3/1) medium heavy clay; weak 20–50mm subangular blocky structure; very strong; rough fracture; smooth–ped fabric; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; pH 8.8;
A_1		(3; 30–40) Dark grey (10YR4/1) medium heavy clay; weak 20–50mm subangular blocky structure; very strong; rough fracture; smooth–ped and earthy fabric; <2% fine iron–manganese nodules; <2% <5mm cracks; <2% 0.075–1mm pores; few very fine roots; <2% 2–6mm rounded tabular quartz fragments; pH 8.8;
A_1		(4; 70–80) Very dark grey (10YR3/1) medium heavy clay; <2% distinct fine pale brown (10YR6/3) patches of sediment, filling cracks; weak 20–50mm platy