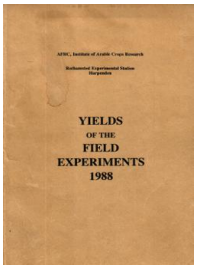
ROTHAMSTED RESEARCH

Yields of the Field Experiments 1988

Full Table of Content



Annuals - Winter and Spring Wheat **

Rothamsted Research

Rothamsted Research (1989) *Annuals - Winter and Spring Wheat ** ;* Yields Of The Field Experiments 1988, pp 149 - 167 **- DOI: https://doi.org/10.23637/ERADOC-1-43**

88/R/WW/4

GRAIN TONNES/HECTARE

***** Tables of means *****

N TIME SOWDATE	SINGLE	DIVIDED	Mean
21 SEPT	6.85	7.19	7.02
26 OCT	8.13	8.44	8.28
Mean	7.49	7.81	7.65

N TIME SOILFUNG	SINGLE	DIVIDED	Mean
NONE	7.46	7.84	7.65
NUARIMOL	7.52	7.79	7.66
Mean	7.49	7.81	7.65

N TIME SEEDRESS	SINGLE	DIVIDED	Mean
ORGANO M	7.31	7.66	7.48
TRIADIME	7.68	7.97	7.83
Mean	7.49	7.81	7.65

N TIME AUTUMN N	SINGLE	DIVIDED	Mean
0	7.19	7.63	7.41
60	7.80	8.00	7.90
Mean	7.49	7.81	7.65

N FORM SOWDATE	SUL AMM	AMM NITR	Mean
21 SEPT	7.17	6.87	7.02
26 OCT	8.33	8.24	8.28
Mean	7.75	7.56	7.65

N FORM SOILFUNG	SUL AMM	AMM NITR	Mean
NONE	7.72	7.58	7.65
NUARIMOL	7.78	7.54	7.66
Mean	7.75	7.56	7.65

N FORM SEEDRESS	SUL AMM	AMM NITR	Mean
ORGANO M	7.40	7.56	7.48
TRIADIME	8.09	7.56	7.83
Mean	7.75	7.56	7.65

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/4

GRAIN TONNES/HECTARE

***** Tables of means *****

N FORM	SUL AMM	AMM NITR	Mean
AUTUMN N			
0	7.44	7.37	7.41
60	8.05	7.74	7.90
Mean	7.75	7.56	7.65

N FORM	SUL AMM	AMM NITR	Mean
N TIME			
SINGLE	7.53	7.45	7.49
DIVIDED	7.97	7.66	7.81
Mean	7.75	7.56	7.65

SOILFUNG	NONE		NUARIMOL	
SOWDATE SEEDRESS	ORGANO M	TRIADIME	ORGANO M	TRIADIME
21 SEPT	6.32	7.29	6.90	7.58
26 OCT	8.44	8.54	8.26	7.89

SOILFUNG	NONE		NUARIMOL	
SOWDATE AUTUMN N	0	60	0	60
21 SEPT	6.05	7.56	7.19	7.29
26 OCT	8.41	8.57	7.99	8.17

SEEDRESS	ORGANO M		TRIADIME	
SOWDATE AUTUMN N	0	60	0	60
21 SEPT	6.11	7.10	7.12	7.75
26 OCT	8.18	8.53	8.22	8.21

SEEDRESS	ORGANO M		TRIADIME	
SOILFUNG AUTUMN N	0	60	0	60
NONE	6.81	7.95	7.65	8.18
NUARIMOL	7.48	7.68	7.69	7.78

SOILFUNG	NONE		NUARIMOL	
SOWDATE N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED
21 SEPT	6.76	6.85	6.94	7.53
26 OCT	8.16	8.82	8.11	8.05

SEEDRESS	ORGANO M		TRIADIME	
SOWDATE N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED
21 SEPT	6.47	6.74	7.23	7.64
26 OCT	8.14	8.57	8.12	8.31

SEEDRESS	ORGANO M		TRIADIME	
SOILFUNG N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED
NONE	7.28	7.49	7.64	8.19
NUARIMOL	7.33	7.82	7.71	7.76

AUTUMN N	0		60	
SOWDATE N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED
21 SEPT	6.39	6.85	7.32	7.53
26 OCT	7.99	8.41	8.27	8.47

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/4

GRAIN TONNES/HECTARE

***** Tables of means *****

AUTUMN N	0		60	
SOILFUNG N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED
NONE	6.98	7.48	7.95	8.19
NUARIMOL	7.40	7.77	7.65	7.80

AUTUMN N	0		60	
SEEDRESS N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED
ORGANO M	7.04	7.26	7.58	8.06
TRIADIME	7.34	8.00	8.02	7.94

SOILFUNG	NONE		NUARIMOL	
SOWDATE N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
21 SEPT	6.93	6.68	7.40	7.07
26 OCT	8.51	8.48	8.15	8.00

SEEDRESS	ORGANO M		TRIADIME	
SOWDATE N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
21 SEPT	6.58	6.64	7.76	7.11
26 OCT	8.23	8.47	8.43	8.00

SEEDRESS	ORGANO M		TRIADIME	
SOILFUNG N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
NONE	7.28	7.48	8.16	7.67
NUARIMOL	7.52	7.63	8.03	7.44

AUTUMN N	0		60	
SOWDATE N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
21 SEPT	6.58	6.66	7.76	7.09
26 OCT	8.31	8.09	8.35	8.39

AUTUMN N	0		60	
SOILFUNG N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
NONE	7.23	7.23	8.21	7.92
NUARIMOL	7.66	7.52	7.90	7.56

AUTUMN N	0		60	
SEEDRESS N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
ORGANO M	7.04	7.25	7.76	7.87
TRIADIME	7.84	7.50	8.35	7.61

N TIME	SINGLE		DIVIDED	
SOWDATE N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
21 SEPT	6.96	6.75	7.38	7.00
26 OCT	8.11	8.16	8.55	8.32

SINGLE		DIVIDED		
SOILFUNG N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
NONE	7.49	7.44	7.95	7.72
NUARIMOL	7.58	7.47	7.98	7.60

N TIME	SINGLE		DIVIDED	
SEEDRESS N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
ORGANO M	7.20	7.41	7.61	7.71
TRIADIME	7.86	7.50	8.33	7.62

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/4

GRAIN TONNES/HECTARE

***** Tables of means *****

	N TIME	SINGLE		DIVIDED	
AUTUMN N	N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
0		7.17	7.20	7.72	7.54
60		7.89	7.70	8.22	7.78

*** Standard errors of differences of means ***

Margins of two factor tables	0.192
Two factor tables	0.271
Three factor tables	0.384

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.768	10.0

GRAIN MEAN DM% 84.4

PLOT AREA HARVESTED 0.00271

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/5

WINTER WHEAT

APHICIDE, N AND FUNGICIDE

Object: To determine the economic thresholds for cereal aphids with different levels of inputs - Sawyers II.

Sponsor: N. Carter.

Design: 3 randomised blocks of 12 plots.

Whole plot dimensions: 3.0 x 12.0.

Treatments: All combinations of:-

1. **APHICIDE** — Aphicide:

   NONE — None
   PIRIMICA — Pirimicarb applied at 0.14 kg in 260 l on 6 May, 1988, in 200 l on 20 May and in 260 l on 6 June, 20 June and 12 July

2. **N RATE** — Nitrogen fertilizer (kg N) as 'Nitram' on 22 Apr, 1988:

   105
   140
   175

3. **FUNGCIDE** — Fungicides:

   NONE — None
   31+39+65 — Fungicide sprays at growth stages 31, 39 and 65:
   G.S. 31 - Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l on 21 Apr, 1988
   G.S. 40 - Propiconazole at 0.12 kg and tridemorph at 0.25 kg in 200 l on 20 May
   G.S. 65 - Fenpropimorph at 0.75 kg with chlorothalonil at 1.0 kg in 260 l on 20 June

Basal applications: Weedkillers: Chlortoluron at 3.5 kg in 200 l. Mecoprop at 3.0 kg in 200 l. Growth regulator: Chlormequat at 1.3 kg in 260 l.

Seed: Avalon, sown at 180 kg.

Cultivations, etc.:- Deep-tine cultivated: 5 Oct, 1987. Heavy spring-tine cultivated, spring-tine cultivated, rotary harrowed, seed sown: 6 Oct. Chlortoluron applied: 8 Nov. Mecoprop applied: 25 Apr, 1988. Growth regulator applied: 6 May. Combine harvested: 23 Aug. Previous crops: W. barley 1986, potatoes 1987.

NOTE: Aphids were counted from mid-May until late July. Plant dry weights were measured at anthesis. Disease assessments were made in late June and late July. Components of yield were measured.

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/5

GRAIN TONNES/HECTARE

***** Tables of means *****

N RATE	105	140	175	Mean
APHICIDE				
NONE	7.79	8.29	8.49	8.19
PIRIMICA	8.44	8.83	9.15	8.81
Mean	8.12	8.56	8.82	8.50

FUNGCIDE	NONE	31+39+65	Mean
APHICIDE			
NONE	7.85	8.54	8.19
PIRIMICA	8.55	9.06	8.81
Mean	8.20	8.80	8.50

FUNGCIDE	NONE	31+39+65	Mean
N RATE			
105	7.94	8.29	8.12
140	8.25	8.88	8.56
175	8.41	9.23	8.82
Mean	8.20	8.80	8.50

	FUNGCIDE	NONE	31+39+65
APHICIDE	N RATE		
NONE	105	7.56	8.02
	140	7.86	8.73
	175	8.13	8.86
PIRIMICA	105	8.33	8.55
	140	8.63	9.04
	175	8.70	9.60

*** Standard errors of differences of means ***

APHICIDE	N RATE	FUNGCIDE	APHICIDE N RATE
0.135	0.166	0.135	0.235

APHICIDE FUNGCIDE	N RATE FUNGCIDE	APHICIDE N RATE FUNGCIDE
0.192	0.235	0.332

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	22	0.406	4.8

GRAIN MEAN DM% 83.5

PLOT AREA HARVESTED 0.00331

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/6

WINTER WHEAT

CONTROL OF EYESPOT AND SEPTORIA

Object: To test effects of different strategies on disease control and yield under different degrees of risk from eyespot and Septoria - Bylands/Black Horse I.

Sponsors: A. Goulds, B.D.L. Fitt.

Associate Sponsors: J.F. Jenkyn, D.J. Royle (LARS).

Design: 3 whole plots divided into 40 sub-plots arranged as 4 replicates of 10 treatments.

Whole plot dimensions: 9.0 x 12.0.

Treatments: All combinations of:-

Whole plots

1. **VARIETY**		Variety:
	AVALON	Avalon
	LONGBOW	Longbow
	RENDEZVO	Rendezvous

Sub plots

2. **FUNGCIDE**		Fungicides applied according to growth stage or disease forecast:
	0	None
	F1	Prochloraz to Avalon on 21 Apr, 1988 (G.S.30/31), to Longbow on 11 May (G.S.32/33) and to Rendezvous on 20 May (G.S.37). Rendezvous also received propiconazole on 7 June (G.S.57/59) and benodanil on 26 May (G.S.41) and 14 June (G.S.59)
	F2	Prochloraz on 17 May (G.S.37) and propiconazole on 16 June (G.S.67)
	F3	Prochloraz on 21 Apr (duplicated)
	F4	Prochloraz on 21 Apr, propiconazole on 25 May (G.S.39)
	F5	Prochloraz on 21 Apr, propiconazole on 7 June
	F6	Prochloraz on 20 May (duplicated)
	F7	Prochloraz on 20 May, propiconazole on 7 June

NOTES: (1) **FUNGCIDE** F1 was applied in accordance with ADAS eyespot forecast except that the variety RENDEZVO did not reach the target and on this variety the treatment was replaced by those shown.
(2) Prochloraz was applied at 0.40 kg in 200 l.
(3) Propiconazole was applied at 0.12 kg in 200 l on 25 May and 16 June and in 260 l on 7 June.
(4) Benodanil was applied at 1.0 kg in 220 l.

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/6

Basal applications: Manures: Chalk at 5.0 t. 'Nitram' at 120 kg and later at 480 kg. Weedkillers: Paraquat at 0.60 kg ion in 200 l. Isoproturon at 2.5 kg in 200 l. Fluroxypyr at 0.20 kg with clopyralid at 0.07 kg and bromoxynil at 0.34 kg in 200 l. Fungicide: Tridemorph at 0.52 kg in 200 l. Insecticide: Fonofos at 1.4 kg in 200 l.

Seed: Varieties, sown at 190 kg.

Cultivations, etc.:- Chalk applied: 15 Sept, 1987. Paraquat applied: 28 Sept. Ploughed: 13 Oct. Rotary harrowed, seed sown: 14 Oct. Isoproturon applied: 7 Nov. Insecticide applied: 14 Jan, 1988. First N applied: 29 Feb. Second N applied: 21 Apr. Remaining weedkillers applied: 25 Apr. Fungicide applied: 5 July. Combine harvested: 30 Aug. Previous crops: W. oilseed rape 1986, w. wheat 1987.

NOTE: Eyespot was assessed on plants at weekly intervals from early April until the beginning of August.

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/6 AVALON

GRAIN TONNES/HECTARE

***** Tables of means *****

FUNGCIDE	
0	7.32
F1	8.05
F2	8.78
F3	8.18
F4	8.99
F5	8.54
F6	7.97
F7	8.35
Mean	8.23

*** Standard errors of differences of means ***

FUNGCIDE	
0.319	min.rep
0.276	max-min
0.225	max.rep

	FUNGCIDE
max.rep	F3 v F6
max-min	F3 or F6 v any of remainder
min.rep	any of remainder

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	29	0.451	5.5

GRAIN MEAN DM% 84.2

PLOT AREA HARVESTED 0.00331

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/6 LONGBOW

GRAIN TONNES/HECTARE

***** Tables of means *****

FUNGCIDE	
O	7.79
F1	8.61
F2	9.14
F3	8.79
F4	9.44
F5	9.58
F6	8.20
F7	9.34
Mean	8.79

*** Standard errors of differences of means ***

FUNGCIDE	
0.375	min.rep
0.325	max-min
0.265	max.rep

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	29	0.531	6.0

GRAIN MEAN DM% 84.6

PLOT AREA HARVESTED 0.00331

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/6 RENDEZVOUS

GRAIN TONNES/HECTARE

***** Tables of means *****

FUNGCIDE	
O	7.88
F1	8.82
F2	9.58
F3	8.46
F4	8.91
F5	9.10
F6	8.82
F7	9.03
Mean	8.79

*** Standard errors of differences of means ***

FUNGCIDE	
0.289	min.rep
0.250	max-min
0.204	max.rep

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	29	0.408	4.6

GRAIN MEAN DM% 84.6

PLOT AREA HARVESTED 0.00331

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/8

WINTER WHEAT

CONTROL OF MBC-RESISTANT EYESPOT

Object: To investigate the control of MBC-resistant eyespot by methyl N-(3,5,dichlorophenyl) - carbamate (MDPC) - Sawyers II.

Sponsors: G.L. Bateman, D.W. Hollomon (LARS).

Design: 3 randomised blocks of 8 plots.

Whole plot dimensions: 3.0 x 10.0.

Treatments: All combinations of:-

1. **INOCULUM** Type of inoculum applied:

RESI	MBC-resistant eyespot
SENS	MBC-sensitive eyespot

2. **FUNGCIDE** Type of fungicide applied:

NONE	None
CAR	Carbendazim at 0.25 kg
CAR+MDPC	Carbendazim at 0.25 kg + MDPC at 1.0 kg
MDPC	MDPC at 1.0 kg

NOTES: (1) The inoculum was colonised on autoclaved oat seed and broadcast just after emergence.
(2) Fungicide treatments were applied in 220 l on 17 Apr, 1988.

Basal applications: Manures: 'Nitram' at 400 kg. Weedkillers: Chlortoluron at 3.5 kg in 200 l. Mecoprop at 3.0 kg in 200 l.

Seed: Avalon, sown at 180 kg.

Cultivations, etc.:- Deep-tine cultivated: 5 Oct, 1987. Heavy spring-tine cultivated, spring-tine cultivated, rotary harrowed, seed sown: 6 Oct. Chlortoluron applied: 8 Nov. N applied: 22 Apr, 1988. Mecoprop applied: 25 Apr. Combine harvested: 23 Aug. Previous crops: W. wheat 1986, potatoes 1987.

NOTE: Eyespot was assessed at the beginning of April and in July.

https://doi.org/10.23637/ERADOC-1-43 *pp 13*

88/R/WW/8

GRAIN TONNES/HECTARE

***** Tables of means *****

FUNGCIDE INOCULUM	NONE	CAR	CAR+MDPC	MDPC	Mean
RESI	8.43	8.38	8.24	8.32	8.35
SENS	7.88	7.81	8.37	8.15	8.05
Mean	8.16	8.10	8.31	8.23	8.20

*** Standard errors of differences of means ***

INOCULUM	FUNGCIDE	INOCULUM FUNGCIDE
0.144	0.204	0.289

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	14	0.353	4.3

GRAIN MEAN DM% 83.4

SUB PLOT AREA HARVESTED 0.00201 (1st block) or 0.00273 (other blocks)

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/10

WINTER WHEAT

AUTUMN PYRETHROID AND POLYPHAGOUS PREDATORS

Object: To assess the effects of pyrethroids on populations of non-target beneficial insects and the consequences of any such effects on summer aphid populations - Black Horse I N.

Sponsors: N. Carter, W. Powell.

Associate Sponsor: D. Cooper (MAFF).

Design: 3 blocks of 4 plots.

Whole plot dimensions: 8.0 x 60.0.

Treatments:

INS BARR	Insecticide and polythene barriers:
0 0	No insecticides, no barriers
0 BARR	No insecticide, with polythene barriers
DE BARR	Deltamethrin on 24 Oct, 1987, with barriers
DL BARR	Deltamethrin on 13 Nov, with barriers

NOTES: (1) Deltamethrin was applied at 0.0062 kg in 200 l.
(2) The polythene barriers were erected around the plots, to prevent movement of ground insects, in early October, 1987.

Basal applications: Manures: Chalk at 5.0 t. 'Nitram' at 120 kg and later at 480 kg. Weedkillers: Chlortoluron at 3.5 kg in 200 l. Fluroxypyr at 0.20 kg with clopyralid at 0.07 kg and bromoxynil at 0.34 kg in 200 l. Fungicides: Carbendazim at 0.25 kg and maneb at 1.6 kg in 200 l.

Seed: Mercia, sown at 180 kg.

Cultivations, etc.:- Disced: 9 Sept, 1987. Chalk applied: 15 Sept. Heavy spring-tine cultivated, spring-tine cultivated: 24 Sept. Seed sown: 26 Sept. Chlortoluron applied: 3 Oct. First N applied: 29 Feb, 1988. Remaining weedkillers applied: 14 Apr. Second N applied: 21 Apr. Fungicides applied: 20 June. Combine harvested: 18 Aug. Previous crops: W. barley 1986, w. oilseed rape 1987.

NOTE: Ground insect numbers were estimated from pitfall traps from October to July. Aphid samples were taken in autumn and fortnightly from April until late July. Plant samples were taken for shoot borer estimates in April and visual assessments of BYDV made in mid-June.

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/10

GRAIN TONNES/HECTARE

***** Tables of means *****

INS BARR	0 0	0 BARR	DE BARR	DL BARR	MEAN
	6.51	6.38	6.60	6.58	6.52

*** Standard errors of differences of means ***

INS BARR
0.095

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	6	0.116	1.8

GRAIN MEAN DM% 85.7

PLOT AREA HARVESTED 0.00353

https://doi.org/10.23637/ERADOC-1-43

88/R/WW/12

WINTER WHEAT

CONTROL OF VOLUNTEERS

Object: To compare methods of volunteer control in cereal crops - Summerdells II.

Sponsors: R. Moffitt, D.G. Christian.

Design: 3 replicates of 6 x 3 criss-cross.

Column plot dimensions: 6.0 x 23.0.

Treatments: All combinations of:-

1. **PRIMCULT** Primary cultivations:

NONE	None until just before sowing
DYNDRIVE	'Bomford Dynadrive'
DISC	Disc
PLOUGH	Plough
ROTAVATE	Rotary cultivate
TINE	Tine

2. **PRSOWCON** Pre-sowing volunteer control:

GLYPHOS	Glyphosate at 0.27 kg in 200 l on 24 Oct, 1987
PARAQUAT	Paraquat at 0.60 kg ion in 200 l on 24 Oct
ROT HARR	Rotary harrow on 7 Nov

NOTES: (1) Primary cultivation treatments were carried out on 18 Aug, 1987, disc and tine treatments were cultivated twice, the others once.
(2) All plots were disced twice and rotary harrowed on 7 Nov.
(3) The 'Bomford Dynadrive' has a frame similar to a rotary cultivator but it has two rotating shafts containing flat, slightly twisted, spade shape tines. The front shaft drives the rear, it is fitted with twice the number of blades and rotates at about one third the speed of the rear shaft.

Basal applications: Manures: (0:18:36) at 690 kg. 'Nitram' at 120 kg and later at 480 kg. Weedkillers: Fluroxypyr at 0.20 kg with clopyralid at 0.07 kg and bromoxynil at 0.34 kg in 200 l.

Seed: Mercia, sown at 180 kg.

Cultivations, etc.:- PK applied: 24 Aug, 1987. Seed sown: 7 Nov. First N applied: 2 Mar, 1988. Second N applied: 22 Apr. Weedkillers applied: 26 Apr. Combine harvested: 5 Sept. Previous crops: W. barley 1986 and 1987.

NOTE: Volunteer plants were counted in autumn 1987, before the new crop emerged and at anthesis. Numbers of barley grains in harvested produce were counted.

https://doi.org/10.23637/ERADOC-1-43 *pp 17*

88/R/WW/12

GRAIN TONNES/HECTARE

***** Tables of means *****

PRIMCULT	NONE	DYNDRIVE	DISC	PLOUGH	ROTAVATE	TINE	Mean
PRSOWCON							
GLYPHOS	6.08	5.87	5.47	6.37	5.61	5.84	5.87
PARAQUAT	6.36	6.23	6.04	6.36	6.16	6.10	6.21
ROT HARR	5.86	5.95	5.71	6.56	5.69	5.89	5.94
Mean	6.10	6.02	5.74	6.43	5.82	5.95	6.01

*** Standard errors of differences of means ***

	PRIMCULT	**PRSOWCON**	**PRIMCULT PRSOWCON**
	0.317	0.072	0.347
Except when comparing means with the same level(s) of			
PRIMCULT			0.171
PRSOWCON			0.346

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	10	0.389	6.5
BLOCK.WP2	4	0.088	1.5
BLOCK.WP1.WP2	20	0.208	3.5

GRAIN MEAN DM% 84.2

SUB PLOT AREA HARVESTED 0.00217

https://doi.org/10.23637/ERADOC-1-43

88/R/WS/1

SPRING WHEAT

METHODS OF INOCULATING TAKE-ALL

Object: To compare a range of inoculation methods for establishing differences in take-all severity with even distribution of infection - Hoosfield.

Sponsors: G.L. Bateman, D. Hornby, P.B. Barraclough.

Design: 3 randomised blocks of 9 plots.

Whole plot dimensions: 3.0 x 12.0.

Treatments: Combinations of:-

1. **CULTINOC** Cultivation sequence and method of inoculation:

MULTNIL	Multiple cultivation, no inoculum
MULTBPL	Multiple cultivation, inoculum broadcast before ploughing on 29 Mar, 1988
MULTDR4	Multiple cultivation, inoculum applied by fertilizer drill at 10 cm on 18 Apr
MULTDR2	Multiple cultivation, inoculum applied by fertilizer drill at 5 cm on 18 Apr
MULTCDR	Multiple cultivation, inoculum combine drilled with seed on 19 Apr
SIMPNIL	Simplified cultivation, no inoculum
SIMPRG6	Simplified cultivation, inoculum broadcast before rotagrubbing to 15 cm on 18 Apr
SIMPRV4	Simplified cultivation, inoculum broadcast before rotavating to 10 cm on 18 Apr
SIMPRV2	Simplified cultivation, inoculum broadcast before rotavating to 5 cm on 18 Apr

NOTES: (1) Inoculum were colonised on autoclaved oat seed.
(2) The Multiple cultivation sequence was: plough, fertilizer drill to 10 cm, fertilizer drill to 5 cm, rotary harrow to 5 cm, drill at 4 cm.
(3) The Simplified cultivation sequence was: plough, rotagrub or rotavate as above, drill at 4 cm.
(4) All plots were flat rolled and rotary harrowed to 5 cm (twice) on 14 Apr, 1988 and rotary harrowed to 10 cm on 18 Apr.

Basal applications: Manures: 'Nitram' at 480 kg. Weedkillers: Clopyralid at 0.05 kg and bromoxynil at 0.24 kg with fluroxypyr at 0.20 kg in 200 l. Fungicides: Propiconazole at 0.12 kg and tridemorph at 0.25 kg in 200 l.

Seed: Alexandria, sown at 240 kg.

Cultivations, etc.:- Ploughed: 29 Mar, 1988. Seed sown: 19 Apr. N applied: 28 Apr. Weedkillers applied: 14 June. Fungicides applied: 8 July. Combine harvested: 16 Sept. Previous crops: S. barley 1986, sunflowers 1987.

https://doi.org/10.23637/ERADOC-1-43 *pp 19*

88/R/WS/1

NOTE: Take-all was assessed at fortnightly intervals from the end of May until mid-August. Soil cores were taken in May to check the distribution of the inoculum in the soil.

GRAIN TONNES/HECTARE

***** Tables of means *****

CULTINOC	
MULTNIL	6.78
MULTBPL	6.26
MULTDR4	4.73
MULTDR2	4.46
MULTCDR	3.87
SIMPNIL	6.77
SIMPRG6	3.98
SIMPRV4	4.31
SIMPRV2	3.80
Mean	5.00

*** Standard errors of differences of means ***

CULTINOC
0.377

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	16	0.462	9.2

GRAIN MEAN DM% 79.9

PLOT AREA HARVESTED 0.00255

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