ROTHAMSTED RESEARCH

Yields of the Field Experiments 1979

Full Table of Content

Barley

Rothamsted Research

Rothamsted Research (1980) *Barley ;* Yields Of The Field Experiments 1979, pp 289 - 318 **- DOI: https://doi.org/10.23637/ERADOC-1-45**

79/R/B/1

WINTER BARLEY

SOWING DATES, MILDEW CONTROL & GROWTH STUDY

Object: To study the effects of sowing date and mildew control on the incidence of mildew, growth and yield of winter barley - Long Hoos I/II.

Sponsors: A. Bainbridge, J.F. Jenkyn, M.E. Finney, J.N. Gallagher.

Design: 2 blocks of 24 plots with confounding.

Whole plot dimensions: 2.13 x 9.14.

Treatments: All combinations of:-

1. SOW DATE — Dates of sowing:

   6 OCT
   13 OCT
   20 OCT
   1 NOV
   15 NOV
   29 NOV

2. TRIFORIN — Triforine:

   NONE — None
   SEEDRESS — Seed dressed at 2.7 g a.i. per kg of seed

3. TRIDEMOR(1) — Tridemorph in early spring:

   NONE — None
   SPRAYED — Sprayed on 26 Apr, 1979

4. TRIDEMOR(2) — Tridemorph in late spring:

   NONE — None
   SPRAYED — Sprayed on 1 June

NOTES: (1) Tridemorph was applied at 0.53 kg in 340 l
(2) The guard areas between sides of each plot were sown to winter barley, variety Athene, and used for the experiment 'N & Growth Regulator' (see 79/R/B/5).

Basal applications: Manures: (0:20:20) at 310 kg. 'Nitro-Chalk' at 370 kg. Weedkillers: Mecoprop at 2.5 l in 220 l. Irrigation: 25 mm.

Seed: Hoppel, sown at 180 kg.

Cultivations, etc.:- Ploughed: 22 Sept, 1978. Rolled: 27 Sept. PK applied, rotary harrowed: 4 Oct. Irrigation applied: 9 Nov. N applied: 3 May, 1979. Weedkiller applied: 9 May. All plots except SOW DATE 29 NOV harvested: 6 Aug. SOW DATE 29 NOV harvested: 15 Aug. Previous crops: Spring barley 1977, Winter beans 1978.

NOTE: Seedling emergence counts were made in April. Tillers and grains per ear were counted in July. Disease assessments were made in June and July.

https://doi.org/10.23637/ERADOC-1-45

79/R/B/1

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

TRIFORIN SOW DATE	NONE	SEEDRESS	MEAN
6 OCT	7.82	7.88	7.85
13 OCT	8.03	8.03	8.03
20 OCT	7.93	7.82	7.87
1 NOV	7.82	8.32	8.07
15 NOV	7.03	7.56	7.29
29 NOV	5.83	5.52	5.68
MEAN	7.41	7.52	7.47

TRIDEMOR(1) SOW DATE	NONE	SPRAYED	MEAN
6 OCT	7.35	8.34	7.85
13 OCT	7.84	8.23	8.03
20 OCT	7.74	8.00	7.87
1 NOV	7.95	8.19	8.07
15 NOV	7.36	7.22	7.29
29 NOV	5.90	5.45	5.68
MEAN	7.36	7.57	7.47

TRIDEMOR(1) TRIFORIN	NONE	SPRAYED	MEAN
NONE	7.30	7.52	7.41
SEEDRESS	7.42	7.63	7.52
MEAN	7.36	7.57	7.47

TRIDEMOR(2) SOW DATE	NONE	SPRAYED	MEAN
6 OCT	7.85	7.84	7.85
13 OCT	7.91	8.16	8.03
20 OCT	7.67	8.07	7.87
1 NOV	7.97	8.17	8.07
15 NOV	7.27	7.32	7.29
29 NOV	5.28	6.08	5.68
MEAN	7.32	7.61	7.47

TRIDEMOR(2) TRIFORIN	NONE	SPRAYED	MEAN
NONE	7.24	7.58	7.41
SEEDRESS	7.41	7.64	7.52
MEAN	7.32	7.61	7.47

TRIDEMOR(2) TRIDEMOR(1)	NONE	SPRAYED	MEAN
NONE	7.18	7.54	7.36
SPRAYED	7.47	7.68	7.57
MEAN	7.32	7.61	7.47

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79/R/B/1

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	SOW DATE	TRIFORIN	TRIDEMOR(1)	TRIDEMOR(2)
SED	0.222	0.128	0.128	0.128

TABLE	SOW DATE TRIFORIN	SOW DATE TRIDEMOR(1)	TRIFORIN TRIDEMOR(1)	SOW DATE TRIDEMOR(2)
SED	0.314	0.314	0.181	0.314

TABLE	TRIFORIN TRIDEMOR(2)	TRIDEMOR(1) TRIDEMOR(2)
SED	0.181	0.181

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	20	0.444	6.0

GRAIN MEAN DM% 85.4

PLOT AREA HARVESTED 0.00150

https://doi.org/10.23637/ERADOC-1-45

79/W/B/2

WINTER & SPRING BARLEY

MILDEW SENSITIVITY TO ETHIRIMOL

Object: To study the effects of dressing barley seed with ethirimol on the subsequent sensitivity of mildew and on the yield of winter and spring barley - Warren Field I.

Sponsor: D.W. Hollamon.

Design: Winter barley: 4 blocks of 4 plots split into 2
Spring barley: 4 blocks of 4 plots

Whole plot dimensions: 8.53 x 8.53.

Treatments:

To WINTER BARLEY All combinations of:-

Whole plots

1. SEEDRESS		Seed dressing to winter barley:
	WO	None
	WE	Ethirimol
2. FUNG SB		Fungicide applied to adjacent plots of spring barley:
	S OT	No fungicides to one adjacent plot, tridemorph to the other
	S ET	Ethirimol seed dressing to one adjacent plot, tridemorph to the other

Sub plots

3. POSITION		Position of winter barley plots in relation to spring barley plots testing seed dressing (S O & S E below):
	NORTH	
	SOUTH	

To SPRING BARLEY All combinations of:-

1. SEEDRESS		Seed dressing to spring barley:
	SO	None
	SE	Ethirimol
2. FUNG WB		Fungicide applied to both adjacent plots of winter barley:
	W O	None
	W E	Ethirimol seed dressing

https://doi.org/10.23637/ERADOC-1-45

79/W/B/2

NOTES: (1) Plot dimensions were 8.53 x 8.53 and plots were arranged in sets of three - a central spring barley plot with flanking plots of winter barley. Sides of sets of three plots were separated by 'plots' of spring barley of the same dimensions sprayed with tridemorph, ends of plots were separated by strips of spring barley 9.14 wide sprayed with tridemorph.
(2) Tridemorph was applied at 0.53 kg in 250 l.

Basal applications: Manures: (0:20:20) at 310 kg, N at 100 kg as 'Nitro-Chalk'. Weedkillers: Mecoprop with bromoxynil and ioxynil ('Brittox' at 2.5 kg in 250 l). Bromoxynil with ioxynil ('Oxytril CM' at 0.7 kg in 250 l).

Seed: Winter barley, Hoppel sown at 170 kg.
Spring barley, Wing sown at 160 kg.

Cultivations, etc.:- Heavy spring-tine cultivated: 11 Sept, 1978. Deep-tine cultivated: 18 Sept. PK applied: 30 Oct. Disced twice: 13 Nov, 14 Nov. Winter barley sown: 15 Nov. Heavy spring-tine cultivated for spring sowing: 17 Apr, 1979. Spring-tine cultivated with crumbler attached: 18. Apr. Spring barley sown: 19 Apr. N applied to all plots: 20 Apr. 'Brittox' applied to winter barley: 15 May. 'Oxytril CM' applied to spring barley: 5 June. Tridemorph applied: 18 June. Winter barley combine harvested: 15 Aug. Spring barley combine harvested: 21 Aug. Previous crops: Potatoes 1977, winter wheat 1978.

NOTE: Leaf samples were taken for mildew (Erysiphe graminis) measurements during June.

SPRING BARLEY

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

FUNG WB / SEEDRESS	W 0	W E	MEAN
S0	5.37	5.28	5.32
SE	5.58	5.59	5.58
MEAN	5.47	5.43	5.45

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	SEEDRESS	FUNG WB	SEEDRESS FUNG WB
SED	0.216	0.216	0.306

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	9	0.432	7.9

GRAIN MEAN DM% 81.4

PLOT AREA HARVESTED 0.00243

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79/W/B/2

WINTER BARLEY

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

FUNG SB	S OT	S ET	MEAN
SEEDRESS			
WO	5.75	5.71	5.73
WE	5.92	5.91	5.91
MEAN	5.83	5.81	5.82

POSITION	NORTH	SOUTH	MEAN
SEEDRESS			
WO	5.76	5.70	5.73
WE	5.66	6.16	5.91
MEAN	5.71	5.93	5.82

POSITION	NORTH	SOUTH	MEAN
FUNG SB			
S OT	5.78	5.89	5.83
S ET	5.64	5.98	5.81
MEAN	5.71	5.93	5.82

FUNG SB	S OT		S ET	
POSITION	NORTH	SOUTH	NORTH	SOUTH
SEEDRESS				
WO	5.96	5.53	5.56	5.87
WE	5.59	6.24	5.73	6.09

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	SEEDRESS	FUNG SB	SEEDRESS FUNG SB
SED	0.196	0.196	0.277

TABLE	SEEDRESS* POSITION	FUNG SB* POSITION	SEEDRESS* FUNG SB POSITION
SED	0.229	0.229	0.324

* ONLY WHEN COMPARING MEANS WITH SAME LEVEL OF POSITION

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	9	0.392	6.7
BLOCK.WP.SP	12	0.336	5.8

GRAIN MEAN DM% 84.1

SUB PLOT AREA HARVESTED 0.00243

https://doi.org/10.23637/ERADOC-1-45

79/R/B/5

WINTER BARLEY

N & GROWTH REGULATOR

Object: To study the effects of a growth regulator and rates and times of applying nitrogen on the yield of winter barley - Long Hoos I/II.

Sponsors: F.V. Widdowson, J.F. Jenkyn.

Design: 4 randomised blocks of 13 plots.

Whole plot dimensions: 2.13 x 9.14.

Treatments: All combinations of:-

1. E N TIME — Times of applying early nitrogen:

   FEB/MAR — 30 kg of total early N applied 1 Mar, 1979, remainder 2 Apr.
   MAR — All early N applied 2 Apr.

2. E N RATE — Total early nitrogen rate (kg N):

   60
   90

3. L N G — Late nitrogen (kg N) and growth regulator:

   NONE — None
   30 APR — 30 kg applied 25 Apr. No growth regulator
   30 APR+G — 30 kg applied 25 Apr. Mepiquat chloride + ethephon (as 'Terpal' applied at 2.5 l) in 280 l

plus one extra plot:

   90F/M+G — 90 kg N total applied: 30 kg N 1 Mar, 60 kg N 2 Apr. Mepiquat chloride + ethephon applied at above rate on 25 May

NOTES: (1) Planned dates of applying early nitrogen treatments were not achieved because of wet weather.
(2) The guard areas between sides of each plot were sown to winter barley, variety Hoppel, and used for the experiment 'Sowing Dates, Mildew Control and Growth Study' (see 79/R/B/1).

Basal applications: Manures: (0:20:20) at 310 kg. Weedkillers: Mecoprop at 2.5 l in 220 l. Irrigation: 25 mm water.

Seed: Athene, sown at 160 kg.

Cultivations, etc.:- Ploughed: 22 Sept, 1978. Rolled: 27 Sept. PK applied, rotary harrowed: 4 Oct. Seed sown: 6 Oct. Irrigated: 9 Nov. Weedkiller applied: 9 May, 1979. Harvested: 6 Aug. Previous crops: Spring barley 1977, Winter beans 1978.

NOTE: Soil samples were taken in spring to a depth of 90 cm to determine mineral N content. Nitrogen percentages of grain were measured. Leaf disease and crop height were assessed in late June.

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79/R/B/5

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

E N RATE	60	90	MEAN
E N TIME			
FEB/MAR	8.30	8.67	8.49
MAR	8.46	8.98	8.72
MEAN	8.38	8.82	8.60

L N G	NONE	30 APR	30 APR+G	MEAN
E N TIME				
FEB/MAR	7.90	8.63	8.93	8.49
MAR	8.44	8.65	9.05	8.72
MEAN	8.17	8.64	8.99	8.60

L N G	NONE	30 APR	30 APR+G	MEAN
E N RATE				
60	7.77	8.44	8.93	8.38
90	8.57	8.84	9.06	8.82
MEAN	8.17	8.64	8.99	8.60

	L N G	NONE	30 APR	30 APR+G
E N TIME	E N RATE			
FEB/MAR	60	7.58	8.45	8.88
	90	8.23	8.80	8.99
MAR	60	7.97	8.42	8.98
	90	8.92	8.88	9.13

90F/M+G 8.62

GRAND MEAN 8.60

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	E N TIME	E N RATE	L N G	E N TIME E N RATE
SED	0.119	0.119	0.146	0.168

TABLE	E N TIME L N G	E N RATE L N G	E N TIME E N RATE L N G & 90F/M+G
SED	0.206	0.206	0.291

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	36	0.412	4.8

GRAIN MEAN DM% 86.3

PLOT AREA HARVESTED 0.00195

https://doi.org/10.23637/ERADOC-1-45

79/R/B/6

WINTER BARLEY

TIMES OF APPLYING TRIDEMORPH & DEMETON-S-METHYL

Object: To study the effects of times of applying tridemorph and demeton-s-methyl on the incidence of mildew, aphids and aphid-borne viruses and on the yield of winter barley - Scout.

Sponsors: A. Bainbridge, M.E. Finney, J.F. Jenkyn, R.T. Plumb.

Design: 3 randomised blocks of 10 plots.

Whole plot dimensions: 2.13 x 6.10.

Treatments: All combinations of:-

1. TRI A Tridemorph in autumn (17 Nov, 1978):

   NONE
   SPRAYED

2. TRI ES Tridemorph in early spring (26 Apr, 1979):

   NONE
   SPRAYED

3. TRI LS Tridemorph in late spring (1 June):

   NONE
   SPRAYED

plus two extra treatments:

DEMETON	Times of applying demeton-s-methyl:
AUTUMN	17 Nov, 1978
SPRING	1 June, 1979

NOTES: (1) Tridemorph was applied at 0.53 kg in 340 l.
(2) Demeton-s-methyl was applied at 0.25 kg in 340 l

Basal applications: Manures: FYM at 20 t. (10:23:23) at 250 kg combine drilled. 'Nitro-Chalk' at 380 kg. Weedkillers: Paraquat at 0.42 kg ion in 220 l. Methabenzthiazuron at 2.35 kg in 220 l.

Seed: Sonja, sown at 190 kg.

Cultivations, etc.:- FYM applied: 25 Aug, 1978. Ploughed: 7 Sept. Paraquat applied: 3 Oct. Seed sown: 5 Oct. Methabenzthiazuron applied: 12 Oct. N applied: 17 Apr, 1979. Harvested: 5 Aug. Previous crops: Winter barley 1977 and 1978.

NOTES: (1) Seedling emergence counts were made in November and in April.
(2) Foliar diseases were assessed in November, June and July. Tillers and grains per ear were counted in July.

https://doi.org/10.23637/ERADOC-1-45 *pp 10*

79/R/B/6

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

TRI ES / TRI A	NONE	SPRAYED	MEAN
NONE	6.63	6.93	6.78
SPRAYED	6.91	6.81	6.86
MEAN	6.77	6.87	6.82

TRI LS / TRI A	NONE	SPRAYED	MEAN
NONE	6.73	6.83	6.78
SPRAYED	6.93	6.79	6.86
MEAN	6.83	6.81	6.82

TRI LS / TRI ES	NONE	SPRAYED	MEAN
NONE	6.64	6.90	6.77
SPRAYED	7.02	6.72	6.87
MEAN	6.83	6.81	6.82

TRI A	TRI LS / TRI ES	NONE	SPRAYED
NONE	NONE	6.49	6.78
	SPRAYED	6.98	6.88
SPRAYED	NONE	6.80	7.02
	SPRAYED	7.06	6.56

DEMETON	AUTUMN	SPRING	MEAN
	6.85	6.84	6.85

GRAND MEAN 6.82

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	DEMETON	TRI A	TRI ES	TRI LS
SED	0.251	0.126	0.126	0.126

TABLE	TRI A TRI ES	TRI A TRI LS	TRI ES TRI LS	TRI A TRI ES TRI LS & DEMETON
SED	0.178	0.178	0.178	0.251

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	18	0.308	4.5

GRAIN MEAN DM% 85.8

PLOT AREA HARVESTED 0.00130

https://doi.org/10.23637/ERADOC-1-45

79/R/B/7 and 79/W/B/7

SPRING BARLEY

VARIETIES AND N

Object: To study the yields of some of the newer varieties of barley; a growth regulator and three rates of nitrogen are also tested - Rothamsted (R) Bylands and Woburn (W) Far Field I.

Sponsor: R. Moffitt.

Design: 3 randomised blocks of 10 x 4 criss cross.

Whole plot dimensions: 4.27 x 27.1.

Treatments: All combinations of:-

Column plots

1. VARIETY	Varieties (all seed purchased from standard commercial sources, seed vigour not tested except as stated):	
	ATHOS	Athos
	DRAM	Dram
	GEORG	Georgie
	GEORG H	Georgie, high vigour seed ex R.H.M.
	GEORG L	Georgie, low vigour seed ex R.H.M.
	GOLDMARK	Goldmarker
	JUPITER	Jupiter
	MAGNUM	Magnum
	MINAK	Minak
	PORTHOS	Porthos

Row plots

2. N GR	Nitrogen fertiliser (kg N) and growth regulator:	
	38	38
	75	75
	113	113
	113 M+E	113 + mepiquat chloride and ethephon (as 'Terpal' at 2.45 kg in 220 l (R), in 250 l (W))

Basal applications:
Bylands (R): Manures: (0:20:20) at 310 kg, combine drilled. Weedkillers: Mecoprop at 1.6 kg and bromoxynil with ioxynil (as 'Oxytril CM' at 1.4 kg) in 220 l. Fungicide: Tridemorph at 0.53 kg in 220 l.
Far Field I (W): Manures: (0:20:20) at 310 kg, combine drilled.
Weedkillers: Bromoxynil with ioxynil ('Oxytril CM' at 2.1 kg in 250 l).

Seed: Bylands (R): Varieties sown at 160 kg.
Far Field I (W): Varieties sown at 160 kg.

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79/R/B/7 and 79/W/B/7

Cultivations, etc.:-
Bylands (R): Subsoiled, tines 100 cm apart and 45 cm deep: 15 Nov, 1978. Ploughed: 21 Dec. Rotary harrowed, seed sown: 27 Apr, 1979. N applied: 17 May. Weedkiller applied: 4 June. Fungicide applied: 12 June. Growth regulator applied: 21 June. Combine harvested: 29 Aug. Previous crops: Wheat 1977, barley 1978.
Far Field I (W): Heavy spring-tine cultivated three times: 7 Sept, 1978, 30 Oct, 8 Nov. Subsoiled, tines 140 cm apart and 60 cm deep: 30 Oct. Spring-tine cultivated twice, with crumbler attached: 17 Apr, 1979, 18 Apr. N applied: 18 Apr. Spring-tine cultivated: 19 Apr. Seed sown: 20 Apr. Weedkiller applied: 5 June. Growth regulator applied: 18 June. Combine harvested: 22 Aug. Previous crops: Beans 1977, barley 1978.

79/R/B/7

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

N GR	38	75	113	113 M+E	MEAN
VARIETY					
ATHOS	2.86	3.53	3.79	3.53	3.43
DRAM	3.24	3.95	4.02	3.75	3.74
GEORG	3.28	3.26	4.03	3.91	3.62
GEORG H	3.23	3.32	3.96	3.09	3.40
GEORG L	3.16	3.90	3.80	3.65	3.63
GOLDMARK	2.87	3.74	3.52	3.76	3.47
JUPITER	3.11	3.39	3.77	3.52	3.45
MAGNUM	2.09	2.72	3.16	2.78	2.69
MINAK	1.79	2.52	2.94	2.75	2.50
PORTHOS	2.95	3.61	3.66	3.34	3.39
MEAN	2.86	3.39	3.66	3.41	3.33

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	VARIETY	N GR	VARIETY N GR
SED	0.195	0.194	0.394
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
VARIETY			0.385
N GR			0.360

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.VARIETY	18	0.238	7.2
BLOCK.N GR	6	0.238	7.1
BLOCK.VARIETY.N GR	54	0.429	12.9

GRAIN MEAN DM% 83.2

SUB PLOT AREA HARVESTED 0.00130

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79/W/B/7

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

N GR / VARIETY	38	75	113	113 M+E	MEAN
ATHOS	3.92	5.31	5.95	5.70	5.22
DRAM	3.72	4.26	4.26	5.28	4.38
GEORG	4.44	5.85	6.26	5.96	5.63
GEORG H	4.25	5.57	5.77	5.88	5.37
GEORG L	4.52	5.63	5.77	5.97	5.47
GOLDMARK	4.61	5.80	6.53	6.52	5.87
JUPITER	4.19	5.75	5.66	5.97	5.39
MAGNUM	3.99	5.34	5.67	5.75	5.19
MINAK	4.24	5.38	5.62	5.50	5.18
PORTHOS	3.89	5.13	5.93	6.08	5.26
MEAN	4.18	5.40	5.74	5.86	5.29

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	VARIETY	N GR	VARIETY N GR
SED	0.134	0.100	0.239
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
VARIETY			0.224
N GR			0.227

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.VARIETY	18	0.164	3.1
BLOCK.N GR	6	0.123	2.3
BLOCK.VARIETY.N GR	54	0.259	4.9

GRAIN MEAN DM% 83.7

SUB PLOT AREA HARVESTED 0.00173

https://doi.org/10.23637/ERADOC-1-45

79/R/B/8 and 79/W/B/8

SPRING BARLEY

PYTHIUM CONTROL

Object: To study the effects of two fungicides and two methods of application on the incidence of Pythium on roots and on the yield of spring barley - Rothamsted (R) Gt. Harpenden I and Woburn (W) Stackyard C.

Sponsor: G.A. Salt.

Design: 3 randomised blocks of 6 plots.

Whole plot dimensions: 4.27 x 9.14.

Treatments: All combinations of:-

1. FUNGCIDE — Fungicides:

ALIETTE	'Aliette' (Aluminium tris (ethyl phosphonate))
CGA	'CGA 48988' (DL-methyl N-(2,6 dimethyl phenyl)-N-(2-methoxyacetyl)alaninate

2. FUNGMETH — Method of applying fungicides:

FOLIAR	Foliar spray
SEEDBED	Rotavated into the seedbed

plus one extra treatment, duplicated:

NONE

NOTES: (1) 'Aliette' was applied at 15 kg in the seedbed and at 0.68 kg as a foliar spray.
(2) 'CGA 48988' was applied at 1.5 kg in the seedbed and at 0.07 kg as a foliar spray.

Basal applications:
Gt. Harpenden I (R): Manures: (25:0:16) at 450 kg, combine drilled. Weedkillers: Bromoxynil with ioxynil ('Oxytril CM' at 1.4 kg) and mecoprop at 1.7 kg in 220 l.
Stackyard C (W): Manures: (25:0:16) at 450 kg. Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 4.9 kg in 250 l).

Seed: Porthos, dressed with ethirimol, sown at 160 kg at both sites.

Cultivations, etc.:-
Gt. Harpenden I (R): Ploughed: 3 Aug, 1978. Deep-tine cultivated: 10 Aug. Heavy spring-tine cultivated twice: 24 Aug, 7 Sept. Spring-tine cultivated: 30 Apr, 1979. Seedbed treatments applied, spike rotary cultivated all plots, seed sown: 3 May. Weedkillers applied: 4 June. Foliar treatments applied: 12 June. Combine harvested: 5 Sept. Previous crops: Ryegrass 1977, 1978.

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79/R/B/8 and 79/W/B/8

Stackyard C (W): Ploughed: 22 Nov, 1978. Spring-tine cultivated with crumbler attached, three times: 17 Apr, 1979, 30 Apr, 8 May. NK applied: 27 Apr. Seedbed treatments applied, rotary cultivated, all plots sown: 8 May. Weedkillers applied: 6 June. Foliar treatments applied: 18 June. Combine harvested: 6 Sept. Previous crops: Fallow 1977, 1978.

NOTE: Crop samples were taken in July for assessment of infection by Pythium spp. and other soilborne fungi.

79/R/B/8 GT. HARPENDEN I(R)

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

FUNGCIDE FUNGMETH	ALIETTE	CGA	MEAN
FOLIAR	4.39	4.15	4.27
SEEDBED	4.53	4.46	4.49
MEAN	4.46	4.31	4.38

NONE 4.48

GRAND MEAN 4.42

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	FUNGCIDE	FUNGMETH	FUNGCIDE FUNGMETH & NONE
SED	0.213	0.213	0.302 0.261*

* FOR COMPARISONS INVOLVING NONE ONLY

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	11	0.370	8.4

GRAIN MEAN DM% 86.0

PLOT AREA HARVESTED 0.00195

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79/W/B/8 STACKYARD C(W)

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

FUNGCIDE FUNGMETH	ALIETTE	CGA	MEAN
FOLIAR	2.20	2.41	2.31
SEEDBED	2.51	2.37	2.44
MEAN	2.36	2.39	2.37

NONE 2.59

GRAND MEAN 2.45

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	FUNGCIDE	FUNGMETH	FUNGCIDE FUNGMETH & NONE
SED	0.280	0.280	0.396 0.343*

* FOR COMPARISONS INVOLVING NONE ONLY

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	6	0.396	16.2

GRAIN MEAN DM% 84.0

PLOT AREA HARVESTED 0.00260

https://doi.org/10.23637/ERADOC-1-45

79/R/B/9

SPRING BARLEY

SOWING DATES AND PATHOGEN CONTROL

Object: To study the effects of aphid, virus and fungus control on pathogens and yield of barley sown on two dates - Claycroft.

Sponsors: J.F. Jenkyn, R.T. Plumb.

Design: Half replicate in 2 blocks of 16 plots.

Whole plot dimensions: 6.40 x 18.3.

Treatments: Combinations of:-

1. SOW DATE	Dates of sowing:	
	17 APR	17 April, 1979
	8 MAY	8 May
2. FUNGCIDE(1)	Fungicidal seed dressing:	
	NONE	None
	ETHIRIMO	Ethirimol
3. FUNGCIDE(2)	Foliar fungicide:	
	NONE	None
	TRIDEMOR	Tridemorph at 0.53 kg in 220 l on 18 June, 1979
4. APHICIDE(1)	Aphicide to seedbed:	
	NONE	None
	PHORATE	Phorate at 5.0 kg
5. APHICIDE(2)	Foliar aphicide:	
	NONE	None
	DIMETH	Dimethoate at 0.084 kg in 220 l on 5 June, 1979
6. APHICIDE(3)	Foliar aphicide:	
	NONE	None
	DIMETH	Dimethoate at 0.34 kg in 220 l on 11 July, 1979

Basal applications: Manures: (20:14:14) at 440 kg, combine drilled. Weedkillers: Bromoxynil and ioxynil (as 'Oxytril CM' at 2.1 kg) and mecoprop at 1.7 kg in 220 l.

Seed: Wing, sown at 160 kg.

Cultivations, etc.:- Subsoiled, tines 100 cm apart and 45 cm deep: 31 Oct, 1978. Ploughed: 2 Nov. Spring-tine cultivated: 16 Apr, 1979. Early-sown plots power harrowed, seed sown: 17 Apr. Late-sown plots power harrowed, seed sown: 8 May. Weedkillers applied: 1 June. Early-sown plots combine harvested: 26 Aug. Late-sown plots combine harvested: 5 Sept. Previous cropping: Beans 1977, wheat 1978.

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NOTE: Seedling emergence, leaf diseases, numbers of grains per ear and plant populations were assessed.

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

FUNGCIDE(1)	NONE	ETHIRIMO	MEAN
SOW DATE			
17 APR	5.47	5.66	5.57
8 MAY	4.58	4.63	4.61
MEAN	5.02	5.15	5.09

FUNGCIDE(2)	NONE	TRIDEMOR	MEAN
SOW DATE			
17 APR	5.53	5.60	5.57
8 MAY	4.25	4.97	4.61
MEAN	4.89	5.28	5.09

FUNGCIDE(2)	NONE	TRIDEMOR	MEAN
FUNGCIDE(1)			
NONE	4.85	5.19	5.02
ETHIRIMO	4.93	5.37	5.15
MEAN	4.89	5.28	5.09

APHICIDE(1)	NONE	PHORATE	MEAN
SOW DATE			
17 APR	5.50	5.64	5.57
8 MAY	4.76	4.46	4.61
MEAN	5.13	5.05	5.09

APHICIDE(1)	NONE	PHORATE	MEAN
FUNGCIDE(1)			
NONE	4.91	5.14	5.02
ETHIRIMO	5.35	4.95	5.15
MEAN	5.13	5.05	5.09

APHICIDE(1)	NONE	PHORATE	MEAN
FUNGCIDE(2)			
NONE	4.93	4.85	4.89
TRIDEMOR	5.32	5.24	5.28
MEAN	5.13	5.05	5.09

APHICIDE(2)	NONE	DIMETH	MEAN
SOW DATE			
17 APR	5.65	5.48	5.57
8 MAY	4.71	4.50	4.61
MEAN	5.18	4.99	5.09

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GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

APHICIDE(2) FUNGCIDE(1)	NONE	DIMETH	MEAN
NONE	5.18	4.87	5.02
ETHIRIMO	5.18	5.12	5.15
MEAN	5.18	4.99	5.09

APHICIDE(2) FUNGCIDE(2)	NONE	DIMETH	MEAN
NONE	5.01	4.77	4.89
TRIDEMOR	5.35	5.21	5.28
MEAN	5.18	4.99	5.09

APHICIDE(2) APHICIDE(1)	NONE	DIMETH	MEAN
NONE	5.33	4.93	5.13
PHORATE	5.04	5.05	5.05
MEAN	5.18	4.99	5.09

APHICIDE(3) SOW DATE	NONE	DIMETH	MEAN
17 APR	5.48	5.65	5.57
8 MAY	4.43	4.79	4.61
MEAN	4.95	5.22	5.09

APHICIDE(3) FUNGCIDE(1)	NONE	DIMETH	MEAN
NONE	4.90	5.15	5.02
ETHIRIMO	5.01	5.29	5.15
MEAN	4.95	5.22	5.09

APHICIDE(3) FUNGCIDE(2)	NONE	DIMETH	MEAN
NONE	4.78	5.00	4.89
TRIDEMOR	5.13	5.43	5.28
MEAN	4.95	5.22	5.09

APHICIDE(3) APHICIDE(1)	NONE	DIMETH	MEAN
NONE	5.09	5.17	5.13
PHORATE	4.82	5.27	5.05
MEAN	4.95	5.22	5.09

APHICIDE(3) APHICIDE(2)	NONE	DIMETH	MEAN
NONE	5.04	5.32	5.18
DIMETH	4.87	5.12	4.99
MEAN	4.95	5.22	5.09

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GRAIN TONNES/HECTARE

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	SOW DATE	FUNGCIDE(1)	FUNGCIDE(2)	APHICIDE(1)
SED	0.151	0.151	0.151	0.151

TABLE	APHICIDE(2)	APHICIDE(3)	SOW DATE FUNGCIDE(1)	SOW DATE FUNGCIDE(2)
SED	0.151	0.151	0.214	0.214

TABLE	FUNGCIDE(1) FUNGCIDE(2)	SOW DATE APHICIDE(1)	FUNGCIDE(1) APHICIDE(1)	FUNGCIDE(2) APHICIDE(1)
SED	0.214	0.214	0.214	0.214

TABLE	SOW DATE APHICIDE(2)	FUNGCIDE(1) APHICIDE(2)	FUNGCIDE(2) APHICIDE(2)	APHICIDE(1) APHICIDE(2)
SED	0.214	0.214	0.214	0.214

TABLE	SOW DATE APHICIDE(3)	FUNGCIDE(1) APHICIDE(3)	FUNGCIDE(2) APHICIDE(3)	APHICIDE(1) APHICIDE(3)
SED	0.214	0.214	0.214	0.214

TABLE	APHICIDE(2) APHICIDE(3)
SED	0.214

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
WP	10	0.428	8.4

GRAIN MEAN DM% 83.2

PLOT AREA HARVESTED 0.00260

https://doi.org/10.23637/ERADOC-1-45

79/R/B/10

SPRING BARLEY

MILDEW CONTROL IN A SERIALLY BALANCED DESIGN

Object: To study the effects of two fungicides and the effects of interference between plots on the incidence of mildew and on yield - Claycroft.

Sponsors: J.F. Jenkyn, G.V. Dyke.

Design: 9 'blocks' of 4 plots (+ 2 flanking plots).

Whole plot dimensions: 3.91 x 9.14.

Treatments:

FUNGCIDE	Fungicides:
NONE	None
TRIADIME	Triadimefon
TRIDEMOR	Tridemorph (duplicated)

NOTES: (1) Treatments were applied to 38 plots in one line on the field. The design was derived from a serially-balanced one for four treatments, in which each of the 36 possible sets of 3 adjacent treatments occur exactly once (but omitting sets with the same treatment on 2 successive plots), by equating 2 of the treatments. This results in 2 sets of 3 adjacent plots treated alike, 2 sets of 2. The effects of treatments to neighbouring plots (lefthand neighbour - LHN, righthand neighbour - RHN) are estimated in the analysis. In this experiment 'left' was west, 'right' was east. The analysis presented assumes a Fourier curve with 4 terms, 2 sine and 2 cosine to represent positional variation.

(2) Fungicides were applied on 18 June, 1979, tridemorph at 0.53 kg in 340 l, triadimefon at 0.13 kg in 340 l. The surrounding crop was sprayed with tridemorph at 0.53 kg in 220 l on the same date.

Basal applications: Manures: (20:14:14) at 440 kg, combine drilled. Weedkillers: Mecoprop, bromoxynil and ioxynil (as 'Brittox' at 2.5 kg in 220 l).

Seed: Julia, sown at 160 kg.

Cultivations, etc.:- Subsoiled, tines 100 cm apart and 45 cm deep: 31 Oct, 1978. Ploughed: 2 Nov. Spring-tine cultivated: 16 Apr, 1979. Sown: 17 Apr. Weedkillers applied: 18 May. Harvested: 26 Aug. Previous crops: Beans and potatoes 1977, wheat 1978.

NOTE: Leaf diseases were assessed on two occasions. 1000 grain weights were measured.

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GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

GRAND MEAN 6.54

FUNGCIDE	NONE	TRIADIME	TRIDEMOR
	6.48	6.62	6.52

LHN / FUNGCIDE	NONE	TRIADIME	TRIDEMOR
NONE		6.49	6.47
TRIADIME	6.38		6.74
TRIDEMOR	6.50	6.49	6.57

RHN / FUNGCIDE	NONE	TRIADIME	TRIDEMOR
NONE		6.57	6.43
TRIADIME	6.46		6.70
TRIDEMOR	6.46	6.45	6.65

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	FUNGCIDE	FUNGCIDE LHN	FUNGCIDE RHN	
SED	0.111	0.205	0.204	MIN REP
	0.096	0.178	0.176	MAX-MIN
		0.145	0.144	MAX REP

MAX REP FOR COMPARISONS WHERE BOTH MEANS HAVE A LEVEL TRIDEMOR FOR ANY FACTOR
MIN REP FOR COMPARISONS WHERE BOTH MEANS DO NOT HAVE A LEVEL TRIDEMOR FOR ANY FACTOR
MAX-MIN FOR ANY COMPARISONS NOT COVERED ABOVE

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
WP	21	0.234	3.6

GRAIN MEAN DM% 80.9

PLOT AREA HARVESTED 0.00195

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79/R/B/11

SPRING BARLEY

CONTROLLED DROP APPLICATION OF TRIDEMORPH

Object: To compare controlled drop application with conventional spraying on the deposition of spray material, control of mildew and on the yield of spring barley - Claycroft.

Sponsors: F.T. Phillips, A.J. Arnold, P. Etheridge.

Design: 3 randomised blocks of 11 plots.

Whole plot dimensions: 4.27 x 24.4.

Treatments: All combinations of:-

1. SPRAYER	Sprayer and drop density:
CDA 1	Controlled drop application sprayer, standard drop density
CDA 2	Controlled drop application sprayer, twice standard drop density
HYDRAUL	Hydraulic sprayer
2. TRI RATE	Rates of applying tridemorph (on 12 June, 1979):
1	Standard, 525 g
1/2	Half standard, 263 g
1/4	Quarter standard, 132 g
EXTRA	plus two extra plots
NONE	Unsprayed
CDA R 1	Controlled drop application sprayer, reduced drop density, applying standard rate tridemorph

NOTES: (1) CDA sprayer applied tridemorph in 19 l.
(2) Hydraulic sprayer applied tridemorph in 340 l.

Basal applications: Manures: (20:14:14) at 440 kg, combine drilled. Weedkillers: Bromoxynil with ioxynil (as 'Oxytril CM' at 2.1 kg) and mecoprop at 1.6 kg in 220 l.

Seed: Wing, sown at 160 kg.

Cultivations, etc.:- Subsoiled, tines 100 cm apart and 45 cm deep: 31 Oct, 1978. Ploughed: 2 Nov. Spring-tine cultivated: 16 Apr, 1979. Seed sown: 17 Apr. Weedkillers applied: 1 June. Combine harvested: 26 Aug. Previous crops: Beans 1977, wheat 1978.

NOTE: Observations were made on patterns of spray deposition using very small quantities of permethrin as a chemical marker.

https://doi.org/10.23637/ERADOC-1-45

79/R/B/11

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

TRI RATE / SPRAYER	1	1/2	1/4	MEAN
CDA 1	6.14	6.11	5.69	5.98
CDA 2	5.75	6.21	5.89	5.95
HYDRAUL	6.01	5.94	6.05	6.00
MEAN	5.96	6.09	5.88	5.98

EXTRA	NONE	CDA R 1	MEAN
	5.63	6.16	5.89

GRAND MEAN 5.96

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	SPRAYER	TRI RATE	SPRAYER TRI RATE & EXTRA
SED	0.144	0.144	0.249

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	20	0.305	5.1

GRAIN MEAN DM% 81.5

PLOT AREA HARVESTED 0.00520

https://doi.org/10.23637/ERADOC-1-45

79/R/B/12

SPRING BARLEY

N AND MILDEW

Object: To study the effects of mildew on response to a range of nitrogen rates - Geescroft.

Sponsors: J.F. Jenkyn, M.E. Finney.

Design: 3 randomised blocks of 6 plots split into 2.

Whole plot dimensions: 4.27 x 19.2.

Treatments: All combinations of:-

Whole plots

1. N Amounts of nitrogen fertiliser (kg N):

25
50
70
90
110
135

Sub plots

2. MILDEW F Mildew fungicide:

NONE	None
TRIDEMOR	Tridemorph on 18 June

NOTES: (1) Tridemorph was applied at 0.53 kg in 340 l.
(2) Sides of plots were separated by a strip of Magnum barley 2.13 m wide sown at 160 kg. Seed was dressed with ethirimol and combine drilled with (20:14:14) at 440 kg.
(3) 25 kg N was applied to all treatments as the basal (20:14:14) at drilling. The remaining N was broadcast by drill as 'Nitro-Chalk' on 17 May.

Basal applications: Manures: (20:14:14) at 125 kg, combine drilled. Weedkillers: Dicamba with mecoprop and MCPA (as 'Banlene Plus' at 4.9 kg in 220 l).

Seed: Zephyr, sown at 160 kg.

Cultivations, etc.:- Subsoiled, tines 100 cm apart and 45 cm deep: 7 Nov, 1978. Ploughed: 13 Nov. Spring-tine cultivated: 18 Apr, 1979. Seed sown: 19 Apr. Weedkillers applied: 1 June. Combine harvested: 28 Aug. Previous crops: Beans 1977, wheat 1978.

NOTE: Crop samples were taken periodically and nitrogen contents measured. Leaf diseases were assessed on three occasions. Counts were made of numbers of plants, ears, grains per ear. 1000 grain weights were measured.

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79/R/B/12

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

MILDEW F N	NONE	TRIDEMOR	MEAN
25	3.81	4.21	4.01
50	4.67	4.97	4.82
70	4.64	5.80	5.22
90	5.52	6.10	5.81
110	5.55	6.09	5.82
135	5.42	6.12	5.77
MEAN	4.94	5.55	5.24

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	N	MILDEW F	N MILDEW F
SED	0.131	0.105	0.224
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
N			0.257

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	10	0.161	3.1
BLOCK.WP.SP	12	0.314	6.0

GRAIN MEAN DM% 81.9

SUB PLOT AREA HARVESTED 0.00195

https://doi.org/10.23637/ERADOC-1-45

79/R/B/13

SPRING BARLEY

MIXED VARIETIES AND MILDEW

Object: To study the effects of variety mixtures and of fungicides on mildew development and yield - Gt. Field I.

Sponsor: J.F. Jenkyn.

Design: 4 randomised blocks of 12 plots.

Whole plot dimensions: 6.40 x 9.14.

Treatments:

VAR FUNG	Varieties & fungicides:
H 0	Hassan, no fungicide
M 0	Midas, no fungicide
W 0	Wing, no fungicide
H S	Hassan, seed treated fungicide
M S	Midas, seed treated fungicide
W S	Wing, seed treated fungicide
H0 M0 W0	Mixture of the three varieties, no fungicide
HS M0 W0	Mixture of the three varieties. Fungicide seed treatment to Hassan only
H0 MS W0	Mixture of the three varieties. Fungicide seed treatment to Midas only
H0 M0 WS	Mixture of the three varieties. Fungicide seed treatment to Wing only
HS MS WS	Mixture of the three varieties. Fungicide seed treatment to all
HF MF WF	Mixture of the three varieties. Tridemorph foliar spray to all (Tridemorph at 0.53 kg in 340 l on 18 June)

NOTES: (1) All plots were separated at their sides by 8.5 m of variety Proctor and at their ends by 9.1 m of variety Proctor. All the Proctor seed was dressed with ethirimol and the crop was sprayed with tridemorph at 0.53 kg in 220 l on 18 June, 1979. Yields were taken from the Proctor adjacent to the sides of plots and treatment yields were adjusted by covariance analysis.

(2) The fungicide seed treatment applied was 0.375 g triadimenol plus 0.045 g fuberidazole per kg of seed.

(3) The seed mixtures were in equal proportions by weight.

Basal applications: Manures: (20:14:14) at 440 kg, combine drilled. Weedkillers: Dicamba with mecoprop and MCPA (as 'Banlene Plus' at 4.9 kg in 220 l).

Seed: All, including mixtures and Proctor, sown at 160 kg.

Cultivations, etc.:- Subsoiled, tines 100 cm apart and 45 cm deep: 10 Nov, 1978. Ploughed: 30 Nov. Spring-tine cultivated: 17 Apr, 1979. Seed sown: 18 Apr. Weedkillers applied: 4 June. Combine harvested: 25 Aug. Previous crops: Beans 1977, wheat 1978.

NOTE: Mildew was assessed on two occasions.

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79/R/B/13

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

VAR FUNG	
H O	4.58
M O	5.84
W O	5.46
H S	5.85
M S	6.04
W S	5.82
HO MO WO	5.14
HS MO WO	5.77
HO MS WO	5.57
HO MO WS	5.82
HS MS WS	5.65
HF MF WF	5.87
MEAN	5.62

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	VAR FUNG
SED	0.335

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	32	0.466	8.3

GRAIN MEAN DM% 80.6

PLOT AREA HARVESTED 0.00195

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79/R/B/21

SPRING BARLEY

DRILLS AND METHODS OF APPLYING FERTILISER

Object: To study the effects of different drills and rates and times of applying nitrogen fertiliser on the growth and yield of barley - Bylands.

Sponsor: R. Moffitt.

Design: 3 randomised blocks of 16 plots.

Whole plot dimensions:

DRILLS MF	5.33 x 10.1
DRILLS NIAE	4.27 x 10.1
EXTRA	3.05 x 10.1

Treatments: All combinations of:-

1. DRILLS — Drills:

MF	'Massey Ferguson 30' drill, sowing rows 18 cm (7 in) apart
NIAE	'NIAE' drill, sowing rows 18 cm (7 in) apart

2. TOTAL N — Total nitrogen fertiliser (kg N):

60
120

3. N METHOD — Method of applying nitrogen fertiliser:

CDE	Combine drilled at sowing
BCL	Broadcast by machine 17 days after sowing
CDE/BCL	Half total combine drilled, half broadcast by machine 17 days after sowing

plus four extra treatments

EXTRA

F60 BCE	'Fiona' drill, sowing rows 15 cm (6 in) apart, 60 kg N broadcast by machine at sowing
F120 BCE	As previously but using 120 kg N
F60 BCL	'Fiona' drill, 60 kg N broadcast by machine 17 days after sowing
F120 BCL	As previously but using 120 kg N

Basal applications: Weedkillers: Bromoxynil and ioxynil (as 'Oxytril CM' at 1.4 kg) with mecoprop at 1.7 kg in 220 l. Fungicide: Tridemorph at 0.53 kg in 220 l.

Seed: Porthos, sown at 160 kg.

Cultivations, etc.:- Subsoiled, tines 100 cm apart and 45 cm deep: 15 Nov, 1978. Ploughed: 21 Dec. Heavy spring-tine cultivated, rotary harrowed: 27 Apr, 1979. Seed sown: 30 Apr. Weedkillers applied: 4 June. Fungicide applied: 12 June. Combine harvested: 29 Aug. Previous crops: Wheat 1977, barley 1978.

NOTES: (1) Observations of growth stages, evenness of growth and wheeling effects were made several times during the season.
(2) Severe grazing by rabbits, and infestations of perennial grasses may have affected yield.

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79/R/B/21

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

TOTAL N / DRILLS	60	120	MEAN
MF	2.85	3.36	3.10
NIAE	2.89	2.76	2.82
MEAN	2.87	3.06	2.96

N METHOD / DRILLS	CDE	BCL	CDE/BCL	MEAN
MF	3.46	2.91	2.94	3.10
NIAE	2.68	2.70	3.08	2.82
MEAN	3.07	2.81	3.01	2.96

N METHOD / TOTAL N	CDE	BCL	CDE/BCL	MEAN
60	3.03	2.63	2.95	2.87
120	3.12	2.98	3.07	3.06
MEAN	3.07	2.81	3.01	2.96

DRILLS	N METHOD / TOTAL N	CDE	BCL	CDE/BCL
MF	60	3.32	2.72	2.52
	120	3.61	3.11	3.35
NIAE	60	2.74	2.55	3.38
	120	2.63	2.86	2.79

EXTRA	F60 BCE	F120 BCE	F60 BCL	F120 BCL	MEAN
	2.66	3.14	2.48	3.21	2.87

GRAND MEAN 2.94

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	EXTRA	DRILLS	TOTAL N	N METHOD
SED	0.296	0.121	0.121	0.148

TABLE	DRILLS TOTAL N	DRILLS N METHOD	TOTAL N N METHOD	DRILLS TOTAL N N METHOD & EXTRA
SED	0.171	0.209	0.209	0.296

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	30	0.363	12.3

GRAIN MEAN DM% 85.4

PLOT AREA HARVESTED 0.00215

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