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# Yields of the Field Experiments 1986

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## 86/W/B/1 Autumn Disease Control - W. Barley

### Rothamsted Research

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86/W/B/1

WINTER BARLEY

AUTUMN DISEASE CONTROL

Object: To examine the effects of autumn disease control, and interactions with growth regulator, in winter barley grown on contrasting soil types - Woburn, Bull Field (light land), Broad Mead II (heavy land).

Sponsor: J.F. Jenkyn.

Design: On each site: 2 replicates of 20 plots, fully randomised.

Whole plot dimensions: 2.75 x 13.0.

Treatments: Duplicates of all combinations of:-

1. AUT FUNG Autumn fungicide:
  - NONE None (organo-Hg to seed)
  - ETHIRIMO Ethirimol to seed (over organo-Hg seed dressing)
  - FL+ET+TH Flutriafol, ethirimol and thiabendazole to seed
  - FENPROPI Fenpropimorph spray (organo-Hg to seed) at 0.75 kg in 220 l on 16 Dec, 1985
  - TRIADIME Triadimenol and fuberidazole to seed
2. GR EARLY Growth regulator early:
  - NONE None
  - ME EARLY Mepiquat chloride + 2-chloroethylphosphonic acid at G.S. 30 (as 'Terpal' at 2.0 l) in 250 l, with a wetting agent ('Citowett' at 0.01 l), on 30 Apr, 1986
3. GR LATE Growth regulator late:
  - NONE None
  - ME LATE Mepiquat chloride + 2-chloroethylphosphonic acid at G.S. 32 (as 'Terpal' at 2.0 l) in 250 l, with a wetting agent ('Citowett' at 0.01 l), on 19 May.

Basal applications:

- Bull Field: Manures: (0:18:36) at 250 kg. N at 150 kg as 'Nitram'.  
Weedkillers: Mecoprop at 2.1 kg with clopyralid at 0.07 kg and bromoxynil octanoate at 0.34 kg applied with the prochloraz and carbendazim in 250 l. Fungicides: Prochloraz at 0.40 kg with carbendazim at 0.15 kg. Carbendazim at 0.15 kg with tridemorph at 0.38 kg and maneb at 1.6 kg in 250 l. Triadimefon at 0.12 kg with captafol at 1.3 kg in 250 l.
- Broad Mead II: Manures: N at 120 kg as 'Nitram'. Weedkillers: Paraquat at 0.50 kg ion in 250 l. Fluroxypyr at 0.20 kg with isoproturon at 2.0 kg in 250 l. Fungicides: Prochloraz at 0.4 kg with carbendazim at 0.15 kg in 250 l. Carbendazim at 0.15 kg with tridemorph at 0.38 kg and maneb at 1.6 kg in 250 l. Triadimefon at 0.12 kg with captafol at 1.3 kg in 250 l.

Seed: Panda, sown at 300 seeds per square metre (150 kg).

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Cultivations, etc.:-

Bull Field: Oat straw burnt: 28 Aug, 1985. Ploughed: 18 Sept. PK applied: 23 Sept. Rolled: 10 Oct. Spike harrowed with crumbler attached, seed sown: 11 Oct. N applied: 1 May, 1986. Weedkillers with prochloraz and carbendazim applied: 2 May. Carbendazim with tridemorph and maneb applied: 16 May. Triadimefon with captafol applied: 2 June. Combine harvested: 8 Aug. Previous crops: Triticale 1984, w. oats 1985.

Broad Mead II: Wheat straw burnt, heavy spring-tine cultivated: 13 Sept, 1985. Paraquat applied: 9 Oct. Spike harrowed with crumbler attached, seed sown: 11 Oct. N applied: 28 Apr, 1986. Fluroxypyr with isoproturon applied, prochloraz with carbendazim applied: 29 Apr. Carbendazim with tridemorph and maneb applied: 16 May. Triadimefon with captafol applied: 2 June. Combine harvested: 6 Aug. Previous crops: W. wheat 1984 and 1985.

- NOTES: (1) Seedling emergence counts were made in November.  
(2) Assessments of leaf and root diseases were made during the season.  
(3) Crop samples were taken in June for counts of shoots, ear numbers and assessment of dry weights and in July for grain and ear numbers.

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BULL FIELD

GRAIN TONNES/HECTARE

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

GR EARLY	NONE	ME EARLY	MEAN
AUT FUNG			
NONE	7.92	7.81	7.87
ETHIRIMO	7.95	8.31	8.13
FL+ET+TH	7.70	7.67	7.68
FENPROPI	7.83	8.77	8.30
TRIADIME	8.02	8.52	8.27
MEAN	7.89	8.22	8.05
GR LATE	NONE	ME LATE	MEAN
AUT FUNG			
NONE	7.98	7.76	7.87
ETHIRIMO	7.97	8.29	8.13
FL+ET+TH	8.12	7.25	7.68
FENPROPI	8.68	7.92	8.30
TRIADIME	7.88	8.66	8.27
MEAN	8.13	7.97	8.05
GR LATE	NONE	ME LATE	MEAN
GR EARLY			
NONE	7.88	7.90	7.89
ME EARLY	8.38	8.05	8.22
MEAN	8.13	7.97	8.05

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BULL FIELD

GRAIN TONNES/HECTARE

GR EARLY	NONE	ME EARLY	GR LATE	ME LATE
GR EARLY	NONE	ME EARLY	GR LATE	ME LATE
AUT FUNG	NONE	ME EARLY	GR LATE	ME LATE
NONE	7.93	7.92	8.03	7.59
ETHIRIMO	8.02	7.88	7.92	8.71
FL+ET+TH	8.13	7.27	8.10	7.23
FENPROPI	8.12	7.55	9.25	8.28
TRIADIME	7.18	8.86	8.59	8.45

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

TABLE	AUT FUNG	GR EARLY	GR LATE	AUT FUNG GR EARLY
SED	0.442	0.280	0.280	0.625

TABLE	AUT FUNG GR LATE	GR EARLY GR LATE	AUT FUNG GR EARLY GR LATE
SED	0.625	0.395	0.884

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

STRATUM	DF	SE	CV%
WP	20	0.884	11.0

GRAIN MEAN DM% 84.2

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BULL FIELD

STRAW TONNES/HECTARE

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

GR EARLY AUT FUNG	NONE	ME EARLY	MEAN
NONE	5.72	5.13	5.42
ETHIRIMO	5.58	5.21	5.39
FL+ET+TH	5.23	5.52	5.37
FENPROPI	5.54	6.21	5.88
TRIADIME	5.68	6.23	5.95

MEAN 5.55 5.66 5.60

GR LATE AUT FUNG	NONE	ME LATE	MEAN
NONE	5.66	5.18	5.42
ETHIRIMO	5.20	5.58	5.39
FL+ET+TH	5.20	5.54	5.37
FENPROPI	6.59	5.17	5.88
TRIADIME	5.59	6.32	5.95

MEAN 5.65 5.56 5.60

GR LATE GR EARLY	NONE	ME LATE	MEAN
NONE	5.51	5.58	5.55
ME EARLY	5.78	5.54	5.66

MEAN 5.65 5.56 5.60

GR EARLY GR LATE AUT FUNG	NONE	ME EARLY ME LATE	ME EARLY NONE	ME LATE
NONE	5.62	5.82	5.71	4.54
ETHIRIMO	5.54	5.62	4.86	5.55
FL+ET+TH	5.00	5.45	5.40	5.63
FENPROPI	6.32	4.76	6.85	5.58
TRIADIME	5.09	6.27	6.08	6.37

STRAW MEAN DM% 84.2

PLOT AREA HARVESTED 0.00248

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BROAD MEAD II

GRAIN TONNES/HECTARE

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

GR EARLY AUT FUNG	NONE	ME EARLY	MEAN
NONE	9.37	9.10	9.23
ETHIRIMO	9.50	9.23	9.37
FL+ET+TH	9.38	9.25	9.31
FENPROPI	9.37	9.31	9.34
TRIADIME	8.81	9.05	8.93

MEAN	9.29	9.19	9.24
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GR LATE AUT FUNG	NONE	ME LATE	MEAN
NONE	8.86	9.61	9.23
ETHIRIMO	9.40	9.33	9.37
FL+ET+TH	9.19	9.43	9.31
FENPROPI	9.45	9.22	9.34
TRIADIME	8.68	9.18	8.93

MEAN	9.12	9.36	9.24
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GR LATE GR EARLY	NONE	ME LATE	MEAN
NONE	9.12	9.45	9.29
ME EARLY	9.11	9.26	9.19

MEAN	9.12	9.36	9.24
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BROAD MEAD II

GRAIN TONNES/HECTARE

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

GR EARLY	NONE	ME EARLY	GR LATE	ME LATE
GR EARLY	NONE	ME EARLY	GR LATE	ME LATE
GR LATE	NONE	ME EARLY	GR LATE	ME LATE
AUT FUNG	NONE	ME EARLY	GR LATE	ME LATE
NONE	8.84	9.90	8.87	9.32
ETHIRIMO	9.41	9.59	9.38	9.08
FL+ET+TH	9.30	9.46	9.08	9.41
FENPROPI	9.32	9.41	9.59	9.03
TRIADIME	8.72	8.89	8.64	9.46

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

TABLE	AUT FUNG	GR EARLY	GR LATE	AUT FUNG GR EARLY
SED	0.227	0.143	0.143	0.321
TABLE	AUT FUNG GR LATE	GR EARLY GR LATE	AUT FUNG GR EARLY GR LATE	
SED	0.321	0.203	0.454	

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

STRATUM	DF	SE	CV%
WP	20	0.454	4.9
GRAIN MEAN DM%	82.3		



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BROAD MEAD II

STRAW TONNES/HECTARE

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

GR EARLY AUT FUNG	NONE	ME EARLY	MEAN
NONE	5.78	5.87	5.83
ETHIRIMO	5.84	6.01	5.92
FL+ET+TH	6.25	6.76	6.51
FENPROPI	5.88	6.20	6.04
TRIADIME	5.70	6.11	5.90

MEAN	5.89	6.19	6.04
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GR LATE AUT FUNG	NONE	ME LATE	MEAN
NONE	6.12	5.53	5.83
ETHIRIMO	5.66	6.19	5.92
FL+ET+TH	6.32	6.70	6.51
FENPROPI	6.34	5.74	6.04
TRIADIME	5.49	6.32	5.90

MEAN	5.98	6.09	6.04
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GR LATE GR EARLY	NONE	ME LATE	MEAN
NONE	5.77	6.01	5.89
ME EARLY	6.20	6.18	6.19

MEAN	5.98	6.09	6.04
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GR EARLY GR LATE AUT FUNG	NONE	ME LATE	ME EARLY NONE	ME LATE
NONE	6.16	5.39	6.09	5.66
ETHIRIMO	5.76	5.91	5.56	6.46
FL+ET+TH	5.95	6.56	6.69	6.84
FENPROPI	5.82	5.94	6.85	5.54
TRIADIME	5.15	6.24	5.82	6.40

STRAW MEAN DM% 82.4

PLOT AREA HARVESTED 0.00248