ROTHAMSTED RESEARCH

Yields of the Field Experiments 1985

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85/W/B/1 Autumn Disease Control - W. Barley

Rothamsted Research

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85/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, White Horse (light land), Broad Mead I (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 S.D.)
FF 4050	FF 4050 to seed
FENPROPI	Fenpropimorph spray (organo-Hg to seed) at 0.75 kg in 220 l on 10 Dec, 1984
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 9 Apr, 1985

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 24 Apr.

Basal applications: Manures: (5:14:30) at 300 kg. N at 150 kg (White Horse), at 120 kg (Broad Mead I) as 'Nitro-Chalk' (27.5% N). Magnesian limestone at 7.5 t (Broad Mead I). Weedkillers: Paraquat at 0.30 kg ion in 250 l. Isoproturon at 2.0 kg in 250 l applied with the insecticide; mecoprop at 2.0 kg with cyanazine at 0.30 kg in 250 l applied with the prochloraz. Insecticide: Permethrin at 0.06 kg. Fungicides: Prochloraz at 0.40 kg. Carbendazim at 0.25 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 and captafol at 1.3 kg in 250 l. Desiccant: Diquat at 0.56 kg ion in 250 l (Broad Mead I).

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

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Cultivations, etc.:-
NPK applied, heavy spring-tine cultivated (White Horse): 4 Sept, 1984. Straw burnt, disced (Broad Mead I): 6 Sept. NPK applied (Broad Mead I): 12 Sept. Paraquat applied: 18 Sept. Magnesian limestone applied, heavy spring-tine cultivated, seed sown (Broad Mead I): 19 Sept. Ploughed (White Horse): 19 Sept. Rotary harrowed, seed sown (White Horse): 26 Sept. Weedkiller with insecticide applied: 1 Nov. N applied: 4 Apr, 1985. Weedkillers with fungicide applied: 10 Apr. Carbendazim applied: 16 Apr. Carbendazim with tridemorph and maneb applied: 3 May. Triadimefon with captafol applied: 30 May. Desiccant applied (Broad Mead I): 31 July. Combine harvested (Broad Mead I): 5 Aug, (White Horse): 13 Aug. Previous crops: (White Horse): W. wheat 1983, s. barley 1984. (Broad Mead I): W. wheat 1983 and 1984.

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

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85/W/B/1 WHITE HORSE

GRAIN TONNES/HECTARE

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

GR EARLY AUT FUNG	NONE	ME EARLY	MEAN
NONE	6.89	5.99	6.44
ETHIRIMO	6.98	6.65	6.82
FF 4050	7.63	6.32	6.98
FENPROPI	7.09	6.43	6.76
TRIADIME	7.38	6.58	6.98
MEAN	7.20	6.39	6.79

GR LATE AUT FUNG	NONE	ME LATE	MEAN
NONE	7.14	5.74	6.44
ETHIRIMO	7.16	6.47	6.82
FF 4050	7.14	6.82	6.98
FENPROPI	6.87	6.65	6.76
TRIADIME	7.22	6.74	6.98
MEAN	7.11	6.48	6.79

GR LATE GR EARLY	NONE	ME LATE	MEAN
NONE	7.78	6.62	7.20
ME EARLY	6.44	6.35	6.39
MEAN	7.11	6.48	6.79

GR EARLY	NONE		ME EARLY	
GR LATE	NONE	ME LATE	NONE	ME LATE
AUT FUNG				
NONE	7.90	5.89	6.39	5.59
ETHIRIMO	7.77	6.19	6.55	6.75
FF 4050	8.27	6.99	6.00	6.65
FENPROPI	6.98	7.19	6.75	6.12
TRIADIME	7.95	6.82	6.50	6.65

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

TABLE	AUT FUNG	GR EARLY	GR LATE	AUT FUNG GR EARLY
SED	0.561	0.355	0.355	0.793

TABLE	AUT FUNG GR LATE	GR EARLY GR LATE	AUT FUNG GR EARLY GR LATE
SED	0.793	0.501	1.121

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

STRATUM	DF	SE	CV%
WP	20	1.121	16.5

GRAIN MEAN DM% 81.2

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85/W/B/1 WHITE HORSE

STRAW TONNES/HECTARE

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

GR EARLY AUT FUNG	NONE	ME EARLY	MEAN
NONE	3.63	3.41	3.52
ETHIRIMO	4.03	3.62	3.82
FF 4050	4.29	3.52	3.90
FENPROPI	3.70	3.41	3.55
TRIADIME	3.63	3.37	3.50
MEAN	3.85	3.47	3.66

GR LATE AUT FUNG	NONE	ME LATE	MEAN
NONE	3.81	3.23	3.52
ETHIRIMO	3.51	4.14	3.82
FF 4050	4.06	3.75	3.90
FENPROPI	3.69	3.42	3.55
TRIADIME	3.75	3.24	3.50
MEAN	3.76	3.56	3.66

GR LATE GR EARLY	NONE	ME LATE	MEAN
NONE	3.89	3.82	3.85
ME EARLY	3.64	3.29	3.47
MEAN	3.76	3.56	3.66

GR EARLY	NONE		ME EARLY	
GR LATE	NONE	ME LATE	NONE	ME LATE
AUT FUNG				
NONE	4.11	3.14	3.50	3.32
ETHIRIMO	3.44	4.62	3.58	3.66
FF 4050	4.65	3.92	3.46	3.59
FENPROPI	3.89	3.50	3.49	3.34
TRIADIME	3.34	3.92	4.17	2.56

STRAW MEAN DM% 80.2

PLOT AREA HARVESTED 0.00248

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85/W/B/1 BROAD MEAD I

GRAIN TONNES/HECTARE

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

GR EARLY AUT FUNG	NONE	ME EARLY	MEAN
NONE	7.79	8.03	7.91
ETHIRIMO	8.16	8.49	8.33
FF 4050	8.52	7.62	8.07
FENPROPI	8.23	8.27	8.25
TRIADIME	8.20	8.68	8.44
MEAN	8.18	8.22	8.20

GR LATE AUT FUNG	NONE	ME LATE	MEAN
NONE	7.52	8.30	7.91
ETHIRIMO	8.03	8.63	8.33
FF 4050	7.93	8.22	8.07
FENPROPI	7.78	8.71	8.25
TRIADIME	8.30	8.58	8.44
MEAN	7.91	8.49	8.20

GR LATE GR EARLY	NONE	ME LATE	MEAN
NONE	7.83	8.53	8.18
ME EARLY	7.99	8.45	8.22
MEAN	7.91	8.49	8.20

GR EARLY	NONE		ME EARLY	
GR LATE	NONE	ME LATE	NONE	ME LATE
AUT FUNG				
NONE	7.11	8.46	7.92	8.14
ETHIRIMO	7.89	8.43	8.16	8.82
FF 4050	9.07	7.98	6.78	8.46
FENPROPI	7.44	9.01	8.12	8.41
TRIADIME	7.63	8.77	8.96	8.40

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

TABLE	AUT FUNG	GR EARLY	GR LATE	AUT FUNG GR EARLY
SED	0.262	0.166	0.166	0.371

TABLE	AUT FUNG GR LATE	GR EARLY GR LATE	AUT FUNG GR EARLY GR LATE
SED	0.371	0.234	0.524

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

STRATUM	DF	SE	CV%
WP	20	0.524	6.4

GRAIN MEAN DM% 74.3

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85/W/B/1 BROAD MEAD I

STRAW TONNES/HECTARE

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

GR EARLY AUT FUNG	NONE	ME EARLY	MEAN
NONE	4.12	3.87	4.00
ETHIRIMO	3.71	3.93	3.82
FF 4050	4.47	3.95	4.21
FENPROPI	4.00	3.94	3.97
TRIADIME	4.13	4.04	4.08
MEAN	4.09	3.95	4.02

GR LATE AUT FUNG	NONE	ME LATE	MEAN
NONE	3.71	4.28	4.00
ETHIRIMO	3.64	4.00	3.82
FF 4050	4.37	4.05	4.21
FENPROPI	3.64	4.30	3.97
TRIADIME	4.04	4.12	4.08
MEAN	3.88	4.15	4.02

GR LATE GR EARLY	NONE	ME LATE	MEAN
NONE	3.84	4.33	4.09
ME EARLY	3.92	3.97	3.95
MEAN	3.88	4.15	4.02

GR EARLY	NONE		ME EARLY	
GR LATE AUT FUNG	NONE	ME LATE	NONE	ME LATE
NONE	3.67	4.57	3.75	3.99
ETHIRIMO	3.43	3.99	3.86	4.01
FF 4050	4.98	3.96	3.76	4.13
FENPROPI	3.42	4.58	3.86	4.02
TRIADIME	3.70	4.56	4.39	3.68

STRAW MEAN DM% 76.7

PLOT AREA HARVESTED 0.00248

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