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# Yields of the Field Experiments 1981

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## 81/R/CS/211 Factors Affecting Eyespot - W. Wheat

### Rothamsted Research

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81/R/CS/211

FACTORS AFFECTING EYESPOT

Object: To study the effects of a range of treatments on the incidence of eyespot (*Pseudocercosporella herpotrichoides*) and on the yield of w. wheat - Meadow.

Sponsors: R.D. Prew, A. Bainbridge.

The fourth year, w. wheat.

For previous years see 78-80/R/CS/211.

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

Whole plot dimensions: 94.0 x 9.14.

Treatments: All combinations of:-

Whole plots

- |          |  |
|----------|--|
| 1. STRAW | Treatment of straw in autumn (cumulative): |
| BURNT    | Burnt on site after spreading              |
| CARTED   | Baled and carted off                       |

Sub plots

- |             |  |
|-------------|--|
| 2. DRILLING | Cultivations and drilling in autumn (cumulative):        |
| CNVNTIAL    | Cultivated and conventionally drilled                    |
| DIRECT      | Uncultivated, direct drilled                             |
| 3. BEN DATE | Dates of applying benomyl (first applied for 1981 crop): |
| NEVER       | Never  |
| 14 OCT      | 14 October, 1980   |
| 27 MAR      | 27 March, 1981   |

Sub sub plots

- |                  |   |
|------------------|---|
| 4. SEEDRATE (80) | Seed rates (kg) in 1979 & 1980, all sown at 200 kg in 1981: |
| 100              |   |
| 150              |   |
| 200              |   |

NOTE: Benomyl was applied at 1.12 kg in 340 l on both occasions.

Basal applications: Manures: (10:23:23) at 250 kg, combine drilled. 'Nitro-Chalk' at 500 kg. Weedkillers: Paraquat at 0.84 kg ion in 250 l, applied twice. Metoxuron at 4.4 kg in 250 l, applied twice. Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.7 l) in 250 l.

Seed: Armada, sown at 200 kg.

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Cultivations, etc.: - Paraquat applied: 1 Sept, 1980. Straw treatments applied: 8 Sept. 'DIRECT' plots disc harrowed: 12 Sept. 'CNVNTIAL' plots ploughed: 17 Sept. 'CNVNTIAL' plots heavy spring-tine cultivated: 19 Sept. Paraquat applied: 3 Oct. Disc harrowed twice: 9 Oct. Seed sown: 10 Oct. Metoxuron applied: 20 Nov and 27 Mar, 1981. N applied: 13 Apr. 'Brittox' applied: 22 Apr. Combine harvested: 26 Aug.

NOTE: Plants were assessed for infection with eyespot and the incidence of eyespot spores was measured throughout the year. Take-all (*Gaeumannomyces graminis*) was assessed at harvest.

GRAIN TONNES/HECTARE

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

DRILLING STRAW	CNVNTIAL	DIRECT	MEAN	
BURNT	6.38	6.24	6.31	
CARTED	6.55	5.52	6.03	
MEAN	6.46	5.88	6.17	
BEN DATE	NEVER	14 OCT	27 MAR	MEAN
DRILLING STRAW				
BURNT	6.28	5.91	6.74	6.31
CARTED	5.80	5.82	6.48	6.03
MEAN	6.04	5.86	6.61	6.17
BEN DATE	NEVER	14 OCT	27 MAR	MEAN
DRILLING CNVNTIAL				
DIRECT	6.48	6.28	6.64	6.46
	5.61	5.45	6.58	5.88
MEAN	6.04	5.86	6.61	6.17
SEEDRATE (80)	100	150	200	MEAN
DRILLING STRAW				
BURNT	6.40	6.10	6.44	6.31
CARTED	5.94	5.94	6.22	6.03
MEAN	6.17	6.02	6.33	6.17
SEEDRATE (80)	100	150	200	MEAN
DRILLING CNVNTIAL				
DIRECT	6.51	6.36	6.52	6.46
	5.83	5.68	6.14	5.88
MEAN	6.17	6.02	6.33	6.17

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GRAIN TONNES/HECTARE

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

SEEDRATE(80)	100	150	200	MEAN	
BEN DATE					
NEVER	5.98	5.85	6.30	6.04	
14 OCT	5.80	5.69	6.10	5.86	
27 MAR	6.71	6.52	6.59	6.61	
MEAN	6.17	6.02	6.33	6.17	
	BEN DATE	NEVER	14 OCT	27 MAR	
STRAW	DRILLING				
BURNT	CNVNTIAL	6.46	6.11	6.57	
	DIRECT	6.11	5.72	6.90	
CARTED	CNVNTIAL	6.50	6.44	6.70	
	DIRECT	5.11	5.19	6.26	
	SEEDRATE(80)	100	150	200	
STRAW	DRILLING				
BURNT	CNVNTIAL	6.54	6.15	6.45	
	DIRECT	6.25	6.04	6.43	
CARTED	CNVNTIAL	6.47	6.57	6.60	
	DIRECT	5.40	5.32	5.84	
	SEEDRATE(80)	100	150	200	
STRAW	BEN DATE				
BURNT	NEVER	6.34	5.92	6.59	
	14 OCT	6.00	5.70	6.04	
	27 MAR	6.86	6.67	6.68	
CARTED	NEVER	5.63	5.78	6.01	
	14 OCT	5.61	5.68	6.16	
	27 MAR	6.57	6.38	6.50	
	SEEDRATE(80)	100	150	200	
DRILLING	BEN DATE				
CNVNTIAL	NEVER	6.40	6.45	6.58	
	14 OCT	6.23	6.15	6.45	
	27 MAR	6.89	6.48	6.54	
DIRECT	NEVER	5.56	5.25	6.02	
	14 OCT	5.38	5.23	5.76	
	27 MAR	6.54	6.57	6.63	
	SEEDRATE(80)	100	150	200	
STRAW	DRILLING				
BURNT	CNVNTIAL	NEVER	6.61	6.08	6.69
		14 OCT	6.34	5.74	6.25
		27 MAR	6.68	6.63	6.41
	DIRECT	NEVER	6.07	5.75	6.50
		14 OCT	5.65	5.65	5.84
		27 MAR	7.03	6.72	6.95
CARTED	CNVNTIAL	NEVER	6.20	6.82	6.47
		14 OCT	6.13	6.55	6.65
		27 MAR	7.09	6.33	6.68
	DIRECT	NEVER	5.06	4.74	5.54
		14 OCT	5.10	4.80	5.67
		27 MAR	6.04	6.43	6.31



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GRAIN TONNES/HECTARE

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

TABLE	DRILLING	BEN DATE	SEEDRATE(80)
SED	0.149	0.182	0.134

TABLE	STRAW* DRILLING	STRAW* BEN DATE	DRILLING BEN DATE	STRAW* SEEDRATE(80)
SED	0.211	0.258	0.258	0.190

TABLE	DRILLING SEEDRATE(80)	BEN DATE SEEDRATE(80)	STRAW* DRILLING BEN DATE	STRAW* DRILLING SEEDRATE(80)
SED	0.215	0.263	0.365	0.304
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
DRILLING	0.190			
BEN DATE		0.233		
STRAW.DRILLING				0.269

TABLE	STRAW* BEN DATE SEEDRATE(80)	DRILLING BEN DATE SEEDRATE(80)	STRAW* DRILLING BEN DATE SEEDRATE(80)
SED	0.372	0.372	0.526
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
STRAW.BEN DATE	0.329		
DRILLING.BEN DATE		0.329	
STRAW.DRILLING.BEN DATE			0.465

\* WITHIN THE SAME LEVEL OF STRAW ONLY

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	10	0.365	5.9
BLOCK.WP.SP.SSP	24	0.465	7.5

GRAIN MEAN DM% 87.0

SUB PLOT AREA HARVESTED DRILLING DIRECT 0.00254

SUB PLOT AREA HARVESTED DRILLING CNVNTIAL 0.00258