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# Yields of the Field Experiments 1980

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## 80/R/CS/211 Factors Affecting Eyespot

### Rothamsted Research

Rothamsted Research (1981) *80/R/CS/211 Factors Affecting Eyespot ; Yields Of The Field Experiments 1980*, pp 166 - 169 - DOI: <https://doi.org/10.23637/ERADOC-1-31>

80/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 third year, w. wheat.

For previous years see 78-79/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: |
| BURNT    | Burnt on site after spreading |
| CARTED   | Baled and carted off          |

Sub plots

- |             |                                       |
|-------------|---------------------------------------|
| 2. DRILLING | Cultivations and drilling in autumn:  |
| CNVNTIAL    | Cultivated and conventionally drilled |
| DIRECT      | Uncultivated, direct drilled          |
- 
- |             |                    |
|-------------|--------------------|
| 3. SOW DATE | Dates of sowing:   |
| 17 SEPT     | 17 September, 1979 |
| 15 OCT      | 15 October         |
| 9 NOV       | 9 November         |

Sub sub plots

- |             |                  |
|-------------|------------------|
| 4. SEEDRATE | Seed rates (kg): |
| 100         |                  |
| 150         |                  |
| 200         |                  |

NOTE: All treatments were cumulative.

Basal applications: Manures: (10:23:23) at 250 kg, combine drilled. 'Nitro-Chalk' at 500 kg. Weedkillers: Paraquat at 0.84 kg ion in 220 l (to DIRECT only). Metoxuron at 4.4 kg in 220 l. Mecoprop at 2.5 l in 250 l. Insecticide: Demeton-s-methyl at 0.24 kg in 250 l.

Seed: Armada.

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Cultivations, etc.:— Straw treatments applied: 7 Sept, 1979. CNVNTIAL treatments ploughed, paraquat applied to DIRECT treatments only: 13 Sept. CNVNTIAL 17 SEPT treatments harrowed. DIRECT 17 SEPT disc harrowed three times. Seed sown on all 17 SEPT plots: 17 Sept. CNVNTIAL 15 OCT treatments rotary harrowed, DIRECT 15 OCT treatments disc harrowed twice, seed sown on all 15 OCT plots: 15 Oct. CNVNTIAL 9 NOV treatments rotary harrowed. DIRECT 9 NOV treatments disc harrowed twice, seed sown on all 9 NOV plots: 9 Nov. Metoxuron applied: 29 Feb, 1980. N applied: 10 Apr. Mecoprop applied: 24 Apr. Insecticide applied: 25 June. Combine harvested: 22 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	CNVNTIAL	DIRECT	MEAN	
STRAW				
BURNT	5.00	4.98	4.99	
CARTED	5.06	5.76	5.41	
MEAN	5.03	5.37	5.20	
SOW DATE	17 SEPT	15 OCT	9 NOV	MEAN
STRAW				
BURNT	4.70	5.66	4.62	4.99
CARTED	4.55	5.84	5.84	5.41
MEAN	4.63	5.75	5.23	5.20
SOW DATE	17 SEPT	15 OCT	9 NOV	MEAN
DRILLING				
CNVNTIAL	4.20	5.65	5.25	5.03
DIRECT	5.05	5.85	5.21	5.37
MEAN	4.63	5.75	5.23	5.20
SEEDRATE	100	150	200	MEAN
STRAW				
BURNT	4.82	5.00	5.16	4.99
CARTED	5.25	5.39	5.59	5.41
MEAN	5.03	5.19	5.38	5.20
SEEDRATE	100	150	200	MEAN
DRILLING				
CNVNTIAL	4.84	5.09	5.17	5.03
DIRECT	5.23	5.30	5.58	5.37
MEAN	5.03	5.19	5.38	5.20

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GRAIN TONNES/HECTARE

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

SEEDRATE	100	150	200	MEAN
SOW DATE				
17 SEPT	4.67	4.46	4.74	4.63
15 OCT	5.57	5.88	5.80	5.75
9 NOV	4.86	5.24	5.60	5.23
MEAN	5.03	5.19	5.38	5.20

	SOW DATE	17 SEPT	15 OCT	9 NOV
STRAW BURNT	DRILLING			
	CNVNTIAL	4.98	5.62	4.41
CARTED	DIRECT	4.42	5.69	4.84
	CNVNTIAL	3.42	5.68	6.09
	DIRECT	5.69	6.01	5.59

	SEEDRATE	100	150	200
STRAW BURNT	DRILLING			
	CNVNTIAL	4.68	5.21	5.12
CARTED	DIRECT	4.96	4.80	5.20
	CNVNTIAL	4.99	4.97	5.22
	DIRECT	5.51	5.80	5.97

	SEEDRATE	100	150	200
STRAW BURNT	SOW DATE			
	17 SEPT	4.71	4.57	4.81
	15 OCT	5.48	5.79	5.70
CARTED	9 NOV	4.26	4.65	4.96
	17 SEPT	4.64	4.36	4.66
	15 OCT	5.67	5.97	5.89
	9 NOV	5.45	5.83	6.23

	SEEDRATE	100	150	200
DRILLING CNVNTIAL	SOW DATE			
	17 SEPT	4.43	4.15	4.01
	15 OCT	5.26	5.83	5.85
DIRECT	9 NOV	4.82	5.29	5.65
	17 SEPT	4.92	4.78	5.46
	15 OCT	5.88	5.93	5.74
	9 NOV	4.90	5.20	5.54

	SEEDRATE	100	150	200	
STRAW BURNT	DRILLING				
	SOW DATE				
	CNVNTIAL	17 SEPT	5.07	4.86	5.00
		15 OCT	5.41	5.85	5.60
		9 NOV	3.55	4.92	4.76
	DIRECT	17 SEPT	4.35	4.28	4.63
CARTED		15 OCT	5.55	5.73	5.80
		9 NOV	4.96	4.39	5.16
	CNVNTIAL	17 SEPT	3.78	3.44	3.02
		15 OCT	5.12	5.81	6.10
		9 NOV	6.08	5.65	6.54
	DIRECT	17 SEPT	5.49	5.28	6.30
	15 OCT	6.21	6.13	5.68	
	9 NOV	4.83	6.00	5.92	

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

TABLE	DRILLING	SOW DATE	SEEDRATE
SED	0.232	0.285	0.175

TABLE	STRAW* DRILLING	STRAW* SOW DATE	DRILLING SOW DATE	STRAW* SEEDRATE
SED	0.329	0.403	0.403	0.247

TABLE	DRILLING SEEDRATE	SOW DATE SEEDRATE	STRAW* DRILLING SOW DATE	STRAW* DRILLING SEEDRATE
SED	0.308	0.377	0.569	0.435

EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:  
 DRILLING 0.247  
 SOW DATE 0.303  
 STRAW.DRILLING 0.350

TABLE	STRAW* SOW DATE SEEDRATE	DRILLING SOW DATE SEEDRATE	STRAW* DRILLING SOW DATE SEEDRATE
SED	0.533	0.533	0.754

EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:  
 STRAW.SOW DATE 0.429  
 DRILLING.SOW DATE 0.429  
 STRAW.DRILLING.SOW DATE 0.606

\* WITHIN THE SAME LEVEL OF STRAW ONLY

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	10	0.569	10.9
BLOCK.WP.SP.SSP	24	0.606	11.7

GRAIN MEAN DM% 84.7

SUB PLOT AREA HARVESTED DRILLING DIRECT 0.00252

SUB PLOT AREA HARVESTED DRILLING CONVNTIAL 0.00257