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73/R/BS/5 - Distance & Mildew Spread - Spring Barley

Rothamsted Research

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73/R/ES/5

SPRING FARLEY

DISTANCE AND MILDEW SPREAD

Object: To study the effects of fungicidal sprays, applied to barley at different times on yield and incidence of mildew. The effects of separating plots either by a mildew-infested or mildew-free crop are also studied - Whitlocks.

Sponsors: J.F. Jenkyn, A. Edinbridge.

Design: Two 4 x 4 Latin squares one for each DISTANCE.

Whole plot dimensions: 4.27 x 9.14. **Area harvested:** 0.00195.

Treatments: All combinations of:-

1. Distance apart of plots:	DISTANCE
Close together (4.3 m)	Close
Far apart (22.9 m)	Far

2. Fungicidal sprays:	FUNGICIDE
None	0
Tridemorph spray when spore production began to increase rapidly (1 June)	T1
Tridemorph spray 10-14 days after T1 (11 June)	T2
Tridemorph spray 10-14 days after T2 (25 June)	T3

- NOTES:** (1) Tridemorph was applied at 0.53 kg in 290 l.
(2) Plots of 'Close' and 'Far' were sown with Zephyr, seed not dressed with ethirimol. Surrounds of 'Close' plots were sown with the same seed but surrounds of 'Far' plots were sown with Mazurka dressed with ethirimol.
(3) All 'Far' plots had adjacent plots sown with Mazurka, dressed with ethirimol, for covariance analysis.

Basal applications: Manures: 440 kg (20:15:15) combine drilled.
Weedkiller: MCPA, mecoprop and dicamba ('Tetralex Plus' 7.0 l in 220 l).

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Seed: Sown at 160 kg.

Cultivations, etc.:— Ploughed: 20 Nov, 1972. Seed sown: 19 Mar, 1973. Weedkiller applied: 16 May. Combine harvested: 14 Aug. Previous crops: Potatoes 1971, winter wheat 1972.

NOTE: Counts were made of seedling emergence and fertile tillers. Amounts of mildew and green leaf were assessed at approximately weekly intervals from end of May.

Standard errors per plot. Grain, tonnes/hectare.
Close DISTANCE: 0.163 or 3.4% (6 d.f.)
Far DISTANCE: 0.091 or 1.9% (6 d.f.)
Pooled within DISTANCES: 0.132 or 2.8% (12 d.f.)

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TABLES OF MEANS

GRAIN: TONNES/HECTARE

FUNGICIDE

	0	T1	T2	T3	Mean
DISTANCE					
Close	4.40	5.35	4.80	4.49	4.76
Far	4.41	5.29	4.86	4.47	4.76
Far-Close	+0.01	-0.06	+0.06	-0.02	0.00

STANDARD ERRORS OF DIFFERENCES

DISTANCE	FUNGICIDE DISTANCE	DISTANCE* DISTANCE
Close	Far	Far-Close
0.115	0.065	0.044

* For use only in the comparison of two differences.

Mean D.M. % 88.3