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76/R/B/7 Mildew Control in Systemic and Balanced Designs - Barley

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76/R/B/7

SPRING BARLEY

MILDEW CONTROL IN SYSTEMATIC AND BALANCED DESIGNS

Object: To study the effects of tridemorph sprays, applied at different times, in systematic and balanced designs and to assess the magnitude of interference between plots - Little Hoos.

Sponsors: J.F. Jenkyn, A. Bainbridge, G.V. Dyke.

Designs: Systematic: 4 'blocks' of 7 plots.
Serially balanced: 9 'blocks' of 4 plots (+ 2 flanking plots).

Whole plot dimensions: 4.27 x 9.14.

Treatments:

TRIDEMOR To systematic design: Times of applying tridemorph:

0	None
1	Once, on 18 May
2	Once, on 21 May
3	Once, on 27 May
4	Once, on 2 June
R	Repeated, 3 times 18 May, 27 May, 7 June

Plots arranged in linear sequence:

ROR1234 ROR4321 1234ROR 4321ROR

Serially balanced design:

Fungicide sprays as above but omitting levels 2 and 4. These were applied to 38 plots in one line on the field in an order such that each of the 36 possible sets of 3 adjacent treatments occurred exactly once (but omitting sets with the same treatment on 2 successive plots). The effects of treatments to neighbouring plots (lefthand neighbour - LHN, righthand neighbour - RHN) are estimated in the analysis.

In this experiment, 'left' was west, 'right' was east.

The analysis presented assumes a Fourier curve with 4 terms, 2 sine and 2 cosine to represent positional variation.

NOTE: Tridemorph applied at 0.53 kg in 340 l.

Basal applications: Manures: (20:14:14) at 310 kg, combine drilled. Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 5.6 l in 220 l).

Seed: Julia, sown at 160 kg.

Cultivations, etc.: Heavy spring-tine cultivated: 4 Nov, 1975. Deep-tine cultivated twice: 13, 14 Nov. Heavy spring-tine cultivated: 1 Mar, 1976. Seed sown: 5 Mar. Weedkiller applied: 11 May. Combine harvested: 23 July. Previous crops: Beans 1974, potatoes 1975.

NOTE: Seedling emergence counts were made. Mildew was assessed on two occasions.

76/R/B/7

SYSTEMATIC DESIGN

GRAIN TONNES/HECTARE

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

TRIDEMOR	0	1	2	3	4	R	MEAN
	4.61	5.22	5.17	5.10	5.03	5.09	5.05

GRAIN MEAN DM% 87.0

SERIALLY BALANCED DESIGN

GRAIN TONNES/HECTARE

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

GRAND MEAN 4.62

TRIDEMOR	0	1	3	R
	4.22	4.78	4.58	4.89

LHN	0	1	3	R
TRIDEMOR				
0		4.25	4.15	4.25
1	4.74		4.82	4.79
3	4.28	4.72		4.73
R	4.86	5.01	4.80	

RHN	0	1	3	R
TRIDEMOR				
0		4.20	4.26	4.20
1	4.48		4.77	5.10
3	4.40	4.72		4.61
R	4.67	5.00	4.99	

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

TABLE	TRIDEMOR	TRIDEMOR LHN	TRIDEMOR RHN
SED	0.061	0.166	0.165

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

STRATUM	DF	SE	CV%
WP	12	0.125	2.7

GRAIN MEAN DM% 86.7

PLOT AREA HARVESTED 0.00195