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91/R/BS/2 Spray Timings and Bydv - S. Barley

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91/R/BS/2

SPRING BARLEY

SPRAY TIMINGS AND BYDV

Object: To investigate the optimum strategy for controlling barley yellow dwarf virus (BYDV) in spring barley in relation to sowing date, aphid immigration and subsequent population development - Stackyard.

Sponsors: N. Carter, R.T. Plumb.

Design: 3 randomised blocks of 16 plots with external dummy plots and arranged to allow estimation of the effects of neighbouring plots.

Whole plot dimensions: 3.0 x 10.0.

Treatments:

S P DATE Dates of sowing and of applying pirimicarb, at 0.14 kg in 300 l on the first, fifth and sixth occasions and in 250 l on the remainder:

E 0	Sown 25 March, 1991 no pirimicarb
E D1	" " " pirimicarb applied 23 Apr
E D2	" " " " " 7 May
E D3	" " " " " 21 May
E D1 D2	" " " " " 23 Apr and 7 May
E D1 D3	" " " " " 23 Apr and 21 May
E D2 D3	" " " " " 7 May and 21 May
E D1D2D3	" " " " " 23 Apr, 7 May and 21 May
L 0	Sown 23 April, no pirimicarb
L D3	" " " pirimicarb applied 21 May
L D4	" " " " " 5 June
L D5	" " " " " 17 July
L D3 D4	" " " " " 21 May and 5 June
L D3 D5	" " " " " 21 May and 17 July
L D4 D5	" " " " " 5 June and 17 July
L D3D4D5	" " " " " 21 May, 5 June and 17 July

Basal applications: Manures: Magnesian limestone at 2.0 t. 'Nitram' at 350 kg. Weedkillers: Paraquat at 0.60 kg ion in 200 l. Mecoprop at 1.2 kg with bromoxynil at 0.19 kg and ioxynil at 0.19 kg in 200 l. Fungicide: Tridemorph at 0.52 kg in 200 l.

Seed: Alexis, sown at 160 kg.

Cultivations, etc.:- Magnesian limestone applied: 31 July, 1990. Ploughed, furrow pressed: 3 Sept. Paraquat applied: 12 Mar, 1991. Heavy spring-tine cultivated: 15 Mar. Spring-tine cultivated: 22 Mar. Early-sown plots rotary harrowed, seed sown: 25 Mar. N applied: 16 Apr. Late-sown plots spring-tine cultivated, rotary harrowed, seed sown: 23 Apr. Remaining weedkillers applied: 2 June. Fungicide applied: 4 June. Combine harvested 29 Aug. Previous crops: W. wheat 1989, w. oats 1990.

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- NOTES:** (1) Aphids were sampled from mid-April until late July.
(2) Shoot samples for borers were taken in late June.
(3) BYDV was assessed visually at weekly intervals from mid-June until the end of July. Leaves from infected plants were tested using enzyme-linked immunosorbent assays to determine virus strains present.
(4) Plant emergence and components of yield were measured.
(5) The special features of this experiments design are not used in this report.

GRAIN TONNES/HECTARE

***** Tables of means *****

S	P	DATE	
	E	0	6.13
	E	D1	6.37
	E	D2	6.45
	E	D3	6.48
	E	D1 D2	6.37
	E	D1 D3	6.26
	E	D2 D3	6.35
	E	D1D2D3	6.27
	L	0	5.99
	L	D3	5.72
	L	D4	5.94
	L	D5	5.98
	L	D3 D4	6.05
	L	D3 D5	5.72
	L	D4 D5	5.79
	L	D3D4D5	5.99
		Mean	6.12

*** Standard errors of differences of means ***

S P DATE
0.209

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	30	0.255	4.2
GRAIN MEAN DM%	86.4		
PLOT AREA HARVESTED	0.00230		