ROTHAMSTED RESEARCH

Yields of the Field Experiments 1991

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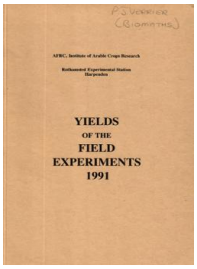

91/R/M/3 Aphids and Bydv - W. Wheat, W. Barley - Mixed Crops

Rothamsted Research

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91/R/M/3

WINTER WHEAT AND WINTER BARLEY

APHIDS AND BYDV

Object: To study the effects of barley yellow dwarf virus (BYDV) on winter cereals - Bones Close.

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

Design: 3 randomised blocks of 8 plots.

Whole plot dimensions: 9.0 x 10.0.

Treatments: All combinations of:-

1. **CROP** Crops:

   W BARLEY — Winter barley
   W WHEAT — Winter wheat

2. **AUT INS** Autumn insecticide:

   NONE — None
   CYPERMET — Cypermethrin at 25 g in 200 l on 6 Nov, 1990

3. **FLO INS** Insecticide at flowering:

   NONE — None
   PIRIMICA — Pirimicarb at 0.14 kg in 200 l on 11 June, 1991 (to barley) and 1 July (to wheat)

Basal applications: Manures: Magnesian limestone at 5.0 t. 'Nitram' at 290 kg (to barley) and 460 kg (to wheat). Weedkillers: Pendimethalin at 1.1 kg with mecoprop at 1.6 kg in 200 l. Fungicides: Prochloraz at 0.40 kg with tridemorph at 0.26 kg in 200 l. Propiconazole at 0.12 kg in 200 l.

Seed: W. barley: Magie, sown at 140 kg.
W. wheat: Mercia, sown at 170 kg.

Cultivations, etc.:- Ploughed, furrow pressed: 20 Aug, 1990. Magnesian limestone applied: 22 Aug. Rotary harrowed: 12 Sept. Cultivated by rotary grubber twice, rotary harrowed, seed sown: 13 Sept. Weedkillers applied: 3 Dec. N applied: 27 Mar, 1991. Prochloraz with tridemorph applied: 23 Apr. Propiconazole applied: 23 May. Combine harvested: 12 Aug (barley) and 20 Aug (wheat). Previous crops: S. barley 1989, w. beans 1990.

NOTES: (1) Aphids were sampled from early October to early August.
(2) BYDV was assessed visually and virus isolates determined by enzyme-linked immunosorbent assay during April and June.
(3) Components of yield were measured.

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91/R/M/3 W.WHEAT AND W.BARLEY

GRAIN TONNES/HECTARE

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

AUT INS	NONE	CYPERMET	Mean
CROP			
W BARLEY	7.76	7.95	7.85
W WHEAT	7.68	7.85	7.77
Mean	7.72	7.90	7.81

FLO INS	NONE	PIRIMICA	Mean
CROP			
W BARLEY	7.71	8.00	7.85
W WHEAT	7.56	7.97	7.77
Mean	7.64	7.98	7.81

FLO INS	NONE	PIRIMICA	Mean
AUT INS			
NONE	7.37	8.07	7.72
CYPERMET	7.90	7.90	7.90
Mean	7.64	7.98	7.81

	AUT INS	NONE		CYPERMET	
CROP	**FLO INS**	NONE	PIRIMICA	NONE	PIRIMICA
W BARLEY		7.61	7.91	7.82	8.08
W WHEAT		7.14	8.22	7.99	7.72

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

CROP	**AUT INS**	**FLO INS**	**CROP AUT INS**
0.106	0.106	0.106	0.149

CROP FLO INS	**AUT INS FLO INS**	**CROP AUT INS FLO INS**
0.149	0.149	0.211

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	14	0.259	3.3

GRAIN MEAN DM% 85.9

PLOT AREA HARVESTED 0.00230

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