ROTHAMSTED RESEARCH

Yields of the Field Experiments 1990

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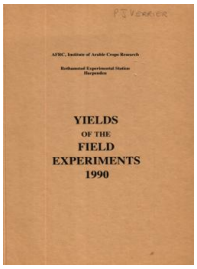

90/R/M/1 Aphids and Bydv - W. Wheat and W. Barley - Mixed Crops

Rothamsted Research

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90/R/M/1

WINTER WHEAT AND WINTER BARLEY

APHIDS AND BYDV

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

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 1 Nov, 1989

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

   NONE — None
   PIRIMICA — Pirimicarb at 0.14 kg in 200 l on 17 May, 1990 (to barley) and 11 June (to wheat)

Basal applications: Manure: 'Nitram' at 350 kg. Weedkillers: Isoproturon at 1.7 kg in 200 l. Bromoxynil at 0.19 kg, ioxynil at 0.19 kg with mecoprop at 2.4 kg applied with the prochloraz in 200 l. Fungicides: Prochloraz at 0.40 kg. Propiconazole at 0.12 kg in 200 l.

Seed: W. wheat: Mercia, sown at 180 kg.
W. barley: Magie, sown at 160 kg.

Cultivations,etc.:- Rotary cultivated: 1 Aug, 1989. Deep-tine cultivated with vibrating tines: 2 Aug. Ploughed: 21 Aug. Rotary harrowed: 16 Sept. Rotary harrowed, seed sown: 18 Sept. Isoproturon applied: 20 Nov. N applied: 22 Mar, 1990. Remaining weedkillers with prochloraz applied: 30 Mar. Propiconazole applied: 4 May. Combine harvested: 24 July (barley) and 7 Aug (wheat). Previous crops: W. barley 1988, w. oilseed rape 1989.

NOTES: (1) Aphids were sampled from mid-October to early July.
(2) BYDV was assessed visually on four occasions during May and June and leaves from some plants were tested by enzyme-linked immunosorbent assay to determine virus present.
(3) Components of yield were measured.

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90/R/M/1

GRAIN TONNES/HECTARE

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

AUT INS / CROP	NONE	CYPERMET	Mean
W BARLEY	8.30	8.56	8.43
W WHEAT	8.87	8.67	8.77
Mean	8.58	8.61	8.60

FLO INS / CROP	NONE	PIRIMICA	Mean
W BARLEY	8.35	8.50	8.43
W WHEAT	8.70	8.83	8.77
Mean	8.53	8.67	8.60

FLO INS / AUT INS	NONE	PIRIMICA	Mean
NONE	8.44	8.72	8.58
CYPERMET	8.62	8.61	8.61
Mean	8.53	8.67	8.60

	AUT INS	NONE		CYPERMET	
CROP	FLO INS	NONE	PIRIMICA	NONE	PIRIMICA
W BARLEY		8.28	8.32	8.43	8.69
W WHEAT		8.60	9.13	8.81	8.53

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

CROP	AUT INS	FLO INS	CROP AUT INS
0.129	0.129	0.129	0.182

CROP FLO INS	AUT INS FLO INS	CROP AUT INS FLO INS
0.182	0.182	0.258

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	14	0.316	3.7

GRAIN MEAN DM% 90.4

PLOT AREA HARVESTED 0.00230

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