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# 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

Rothamsted Research (1992) *91/R/M/3 Aphids and Bydv - W. Wheat, W. Barley - Mixed Crops* ; Yields Of The Field Experiments 1991, pp 184 - 185 - DOI: <https://doi.org/10.23637/ERADOC-1-46>

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.

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

GRAIN TONNES/HECTARE

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

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

CROP	AUT INS	NONE		CYPERMET	
	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	AUT INS	CROP	
FLO INS	FLO INS	AUT INS	
0.149	0.149	FLO INS	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		