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# Yields of the Field Experiments 1987

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## 87/R/B/2 Sowing Dates, Aphids and Bydv - W. Barley

### Rothamsted Research

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87/R/B/2

WINTER BARLEY

SOWING DATES, APHIDS AND BYDV

Object: To study the relationship of aphid numbers in suction trap samples to crop populations and the incidence of BYDV on winter barley sown on a range of dates - Great Field II.

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

Design: 4 randomised blocks of 10 plots.

Whole plot dimensions: 3.0 x 18.0.

Treatments: All combinations of:-

1. SOWDATE            Dates of sowing:

12 SEPT	12 September, 1986
22 SEPT	22 September
1 OCT	1 October
10 OCT	10 October
24 OCT	24 October

2. APHICIDE            Aphicide:

NONE	None
CYPERMET	Cypermethrin at 0.025 kg in 380 l on 12 Nov, 1986

NOTES: (1) All SOWDATE treatments were rotary harrowed on the day of sowing.

(2) The crop was netted against birds from late June until maturity.

Basal applications: Manures: 'Nitram' at 460 kg. Weedkillers: Paraquat at 0.60 kg ion in 200 l. Isoproturon at 2.5 kg with clopyralid at 0.07 kg, bromoxynil at 0.34 kg and mecoprop at 2.5 kg in 200 l. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l. Triadimenol at 0.12 kg in 200 l.

Seed: Igri, sown at 150 kg.

Cultivations, etc.:- Cultivated by rotary grubber: 13 Aug, 1986. Heavy spring-tine cultivated: 28 Aug. Paraquat applied: 10 Sept. Heavy spring-tine cultivated, rotary harrowed: 11 Sept. N applied: 21 Mar, 1987. Remaining weedkillers applied: 16 Apr. Prochloraz and carbendazim applied: 21 Apr. Triadimenol applied: 27 May. Combine harvested: 7 Aug. Previous crops: S. barley 1985, w. barley 1986.

NOTE: Aphids were counted from late September to January and again in May. Visual estimates of BYDV were made at the end of April. Components of yield were measured. Take-all was assessed in summer.

87/R/B/2

GRAIN TONNES/HECTARE

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

APHICIDE	NONE	CYPERMET	Mean
SOWDATE			
12 SEPT	5.28	5.20	5.24
22 SEPT	5.14	5.46	5.30
1 OCT	5.54	5.63	5.58
10 OCT	5.47	5.39	5.43
24 OCT	5.61	5.64	5.63
Mean	5.41	5.46	5.44

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

Table	SOWDATE	APHICIDE	SOWDATE APHICIDE
s.e.d.	0.159	0.101	0.225

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	27	0.319	5.9

GRAIN MEAN DM% 86.3

PLOT AREA HARVESTED 0.00230

87/R/B/3

WINTER BARLEY

ANTI-FEEDANTS AND BYDV

Object: To study the effects of insecticides and insect anti-feedants and their interaction with control of autumn volunteers on the incidence of BYDV - Scout N.

Sponsors: D.C. Griffiths, R.T. Plumb.

Design: 3 blocks of 2 whole plots, split into 6 sub-plots.

Whole plot dimensions: 15.0 x 30.0.

Treatments: All combinations of:-

Whole plots

- |             |   |
|-------------|---|
| 1. VOLNTEER | Control of volunteers prior to sowing:        |
| KILLED      | Control of all green plant matter             |
| PRESENT     | Volunteer germination and survival encouraged |

Sub plots

- |             |   |
|-------------|---|
| 2. SPRY INS | Sprays of insecticides and pheromone derivatives applied electrostatically in 10 l: |
| NONE        | None  |
| CYP         | Cypermethrin at 25 g on 29 Oct, 1986  |
| POLYG R1    | Polygodial, racemic, one spray on 29 Oct  |
| POLYG R2    | Polygodial, racemic, two sprays, on 15 Oct and 29 Oct                               |
| POLYG R3    | Polygodial, racemic, three sprays, on 3 Oct, 15 Oct and 29 Oct                      |
| POLYG N3    | Polygodial, normal, three sprays, on 3 Oct, 15 Oct and 29 Oct                       |

NOTE: VOLNTEER KILLED plots were sprayed with paraquat at 0.60 kg ion in 280 l on 9 Sept, 1986.

Basal applications: Manures: (0:18:36) at 690 kg. 'Nitram' at 460 kg. Weedkillers: Isoproturon at 2.5 kg with clopyralid at 0.07 kg, bromoxynil at 0.34 kg and mecoprop at 2.5 kg in 500 l. Fungicides: Carbendazim at 0.15 kg and prochloraz at 0.40 kg in 200 l. Propiconazole at 0.25 kg in 200 l. Desiccant: Diquat at 0.80 kg ion with a wetting agent ('Agral' at 0.20 l) in 200 l.

Seed: Igri, sown at 150 kg.

Cultivations, etc.:- PK applied, cultivated by rotary grubber: 7 Aug, 1986. Spring-tine cultivated: 11 Sept. Rotary harrowed, seed sown: 12 Sept. N applied: 20 Mar, 1987. Weedkillers applied: 15 Apr. Carbendazim and prochloraz applied: 29 Apr. Propiconazole applied: 27 May. Diquat with wetting agent applied: 31 July. Combine harvested: 7 Aug. Previous crops: W. barley 1985 and 1986.

87/R/B/3

NOTES: (1) Aphid counts were made in early November 1986, late November and early April, 1987.  
 (2) VOLNTEER PRESENT plots were severely infested with blackgrass.

GRAIN TONNES/HECTARE

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

SPRY INS VOLNTEER	NONE	CYP	POLYG R1	POLYG R2	POLYG R3	POLYG N3	Mean
KILLED	6.96	7.35	7.14	7.24	7.27	7.38	7.22
PRESENT	4.75	4.19	4.71	2.43	5.10	4.25	4.24
Mean	5.85	5.77	5.92	4.83	6.19	5.81	5.73

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

Table	SPRY INS	VOLNTEER*
s.e.d.	0.657	0.930

\* Within the same level of VOLNTEER only

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	20	1.139	19.9

GRAIN MEAN DM% 85.9

SUB PLOT AREA HARVESTED 0.00163