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90/R/B/3 Spray Timings and Bydv - S. Barley

Rothamsted Research

Rothamsted Research (1991) *90/R/B/3 Spray Timings and Bydv - S. Barley* ; Yields Of The Field Experiments 1990, pp 123 - 124 - DOI: <https://doi.org/10.23637/ERADOC-1-42>

90/R/B/3

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 - Long Hoos I/II.

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

Design: 3 randomised blocks of 16 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 each occasion: |
|----------|---|
| E 0 | Sown 15 March, 1990 no pirimicarb |
| E D1 | " " " pirimicarb applied 9 Apr |
| E D2 | " " " " " 2 May |
| E D3 | " " " " " 14 May |
| E D1 D2 | " " " " " 9 Apr and 2 May |
| E D1 D3 | " " " " " 9 Apr and 14 May |
| E D2 D3 | " " " " " 2 May and 14 May |
| E D1D2D3 | " " " " " 9 Apr, 2 May and 14 May |
| L 0 | Sown 11 April, no pirimicarb |
| L D2 | " " " pirimicarb applied 2 May |
| L D3 | " " " " " 14 May |
| L D4 | " " " " " 22 May |
| L D2 D3 | " " " " " 2 May and 14 May |
| L D2 D4 | " " " " " 2 May and 22 May |
| L D3 D4 | " " " " " 14 May and 22 May |
| L D2D3D4 | " " " " " 2 May, 14 May and 22 May |

Basal applications: Manure: 'Nitram' at 350 kg. Weedkillers: Bromoxynil at 0.20 kg, ioxynil at 0.20 kg and mecoprop at 1.6 kg applied with the fungicide in 200 l. Fungicide: Fenpropimorph at 0.75 kg.

Seed: Klaxon, dressed triadimenol and fuberidazole, sown at 160 kg.

Cultivations, etc.:- Ploughed: 2 Nov, 1989. N applied: 13 Mar, 1990. Spring-tine cultivated: 14 Mar. Early-sown plots rotary harrowed, seed sown: 15 Mar. Late-sown plots rotary harrowed, seed sown: 11 Apr. Weedkillers with the fungicide applied: 14 May. Combine harvested: 14 Aug. Previous crops: S. beans 1988, potatoes 1989.

- NOTES:**
- (1) Aphids were sampled from early April until early July.
 - (2) Shoot samples were taken from some plots to identify and count shoot borers.
 - (3) BYDV was assessed visually on five occasions during May and June and leaves from some plots were tested by enzyme-linked immunosorbent assay to determine virus strains present.
 - (4) Components of yield were measured.

90/R/B/3

GRAIN TONNES/HECTARE

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

| S P DATE | |
|----------|------|
| E 0 | 5.98 |
| E D1 | 5.82 |
| E D2 | 5.78 |
| E D3 | 6.28 |
| E D1 D2 | 6.16 |
| E D1 D3 | 6.17 |
| E D2 D3 | 6.25 |
| E D1D2D3 | 6.18 |
| L 0 | 4.51 |
| L D2 | 4.82 |
| L D3 | 5.00 |
| L D4 | 4.99 |
| L D2 D3 | 4.61 |
| L D2 D4 | 5.22 |
| L D3 D4 | 5.07 |
| L D2D3D4 | 5.37 |
| Mean | 5.51 |

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

S P DATE
0.401

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

| Stratum | d.f. | s.e. | cv% |
|---------------------|---------|-------|-----|
| BLOCK.WP | 30 | 0.491 | 8.9 |
| GRAIN MEAN DM% | 88.7 | | |
| PLOT AREA HARVESTED | 0.00204 | | |