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93/R/BW/2 Sowing Dates, Aphids and Bydv - W. Barley

Rothamsted Research

Rothamsted Research (1994) *93/R/BW/2 Sowing Dates, Aphids and Bydv - W. Barley* ; Yields Of The Field Experiments 1993, pp 118 - 119 - DOI: <https://doi.org/10.23637/ERADOC-1-48>

93/R/BW/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 barley yellow dwarf virus (BYDV) on winter barley sown on a range of dates - Highfield IV.

Sponsors: G.M. Tatchell, R.T. Plumb.

Design: 4 randomised blocks of 10 plots.

Whole plot dimensions: 3.0 x 31.0.

Treatments: All combinations of:-

1. **SOWDATE** Dates of sowing:

 ERLYSEPT Early September
 MIDSEPT Mid September
 LATESEPT Late September
 ERLYOCT Early October
 LATEOCT Late October

2. **APHICIDE** Aphicide in autumn:

 NONE None
 CYPERMET Cypermethrin

Experimental diary:

- 28-Jul-92 : B : Discd.
- 19-Aug-92 : B : Sting CT at 1.5 l in 200 l.
- 02-Sep-92 : B : Ploughed.
- 07-Sep-92 : B : Rolled.
- 08-Sep-92 : T : **SOWDATE** ERLYSEPT: Rotary harrowed, Magie, dressed Cerevax, drilled at 350 seeds per square metre.
- 15-Sep-92 : T : **SOWDATE** MIDSEPT: Rotary harrowed, Magie, dressed Cerevax, drilled at 350 seeds per square metre.
- 28-Sep-92 : T : **SOWDATE** LATESEPT: Rotary harrowed twice, Magie, dressed Cerevax, drilled at 350 seeds per square metre.
- 12-Oct-92 : T : **SOWDATE** ERLYOCT: Rotary harrowed, Magie, dressed Cerevax, drilled at 350 seeds per square metre.
- 30-Oct-92 : T : **SOWDATE** LATEOCT: Spring-tine cultivated.
- 31-Oct-92 : T : **SOWDATE** LATEOCT: Rotary harrowed, Magie, dressed Cerevax, drilled at 350 seeds per square metre.
- 20-Nov-92 : T : **APHICIDE** CYPERMET (except **SOWDATE** LATEOCT plots): Ripcord at 250 ml in 220 l.
- 10-Dec-92 : T : **APHICIDE** CYPERMET (**SOWDATE** LATEOCT plots only): Ripcord at 250 ml in 220 l.
- 05-Mar-93 : B : 34.5% N at 120 kg.
- 11-Mar-93 : B : Tigress at 2.5 l in 200 l.

93/R/BW/2

Experimental diary:

14-Apr-93 : B : 34.5% N at 370 kg.
 21-Apr-93 : B : Ally at 30 g and Starane 2 at 1.0 l in 200 l.
 18-May-93 : B : Calirus at 2.0 kg and Corbel at 0.50 l in 200 l.
 02-Aug-93 : B : Combine harvested.

Previous crops: W. barley 1991 and 1992.

NOTE: Visual assessments were made for BYDV infection from late March to late May and leaf samples taken during March and April for subsequent enzyme-linked immunosorbent assay to determine levels of BYDV infection and isolates present. Numbers of ears, grains per ear and thousand grain weights were measured at harvest.

GRAIN TONNES/HECTARE

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

| APHICIDE | NONE | CYPERMET | Mean |
|----------------|------|----------|------|
| SOWDATE | | | |
| ERLYSEPT | 4.98 | 5.57 | 5.28 |
| MIDSEPT | 5.14 | 5.53 | 5.33 |
| LATESEPT | 5.90 | 6.05 | 5.97 |
| ERLYOCT | 5.87 | 5.82 | 5.85 |
| LATEOCT | 5.67 | 5.55 | 5.61 |
| Mean | 5.51 | 5.70 | 5.61 |

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

| SOWDATE | APHICIDE | SOWDATE APHICIDE |
|---------|----------|---------------------|
| 0.239 | 0.151 | 0.338 |

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

| Stratum | d.f. | s.e. | cv% |
|---------------------|---------|-------|-----|
| BLOCK.WP | 27 | 0.479 | 8.5 |
| GRAIN MEAN DM% | 86.0 | | |
| PLOT AREA HARVESTED | 0.00204 | | |