

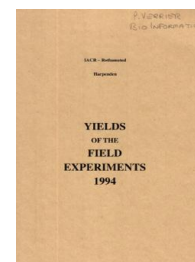
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Spring Oilseed Rape

Rothamsted Research

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94/R/RAS/1

SPRING OILSEED RAPE

SPRING OILSEED RAPE AND SCLEROTINIA

Object: To study the effects of the timing of ascospore release and spore concentrations of *Sclerotinia sclerotinium* on infection rates and disease development for s. oilseed rape - Great Field I/II.

Sponsors: A.H. McCartney, M. Lacey.

Design: 4 randomised blocks of 4 plots.

Whole plot dimensions: 9.0 x 10.0.

Treatments:

| INOCULTN | Time of inoculation in relation to the flowering of the s. rape: |
|----------|--|
| - | None |
| BF | Before flowering |
| DF | During flowering |
| AF | After flowering |

NOTE: Inoculation was achieved by placing pots containing apothecia at the plot centres.

Experimental diary:

30-Sep-93 : B : Ploughed.
26-Mar-94 : B : Scythe at 4.0 l in 200 l.
20-Apr-94 : B : Spring-tine cultivated twice.
21-Apr-94 : B : Rotary harrowed, Starlight, dressed Lindex Plus FS, drilled at 160 seeds per m².
22-Apr-94 : B : Butisan S at 1.5 l in 200 l.
04-May-94 : B : 34.5% N at 348 kg.
02-Jun-94 : B : Benazalox at 1.0 kg in 200 l.
17-Jun-94 : B : Fastac at 200 ml in 200 l.
29-Jun-94 : T : INOCULTN BF: Inoculation started.
06-Jul-94 : T : INOCULTN DF: Inoculation started.
13-Jul-94 : T : INOCULTN AF: Inoculation started.
20-Jul-94 : T : INOCULTN BF, DF, AF: Inoculation completed.
24-Aug-94 : B : Combine harvested.

NOTE: Experiment was originally planned to be sown to w. rape. As the sowing date was delayed, w. rape was replaced by s. rape, within which the disease results proved inconclusive.

Previous crops: Sunflower 1992, linseed 1993.

94/R/RAS/1

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

| INOCULTN | |
|----------|------|
| - | 2.08 |
| BF | 2.08 |
| DF | 2.41 |
| AF | 2.05 |
| Mean | 2.16 |

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

| INOCULTN |
|----------|
| 0.486 |

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

| Stratum | d.f. | s.e. | cv% |
|---------------------|---------|-------|------|
| BLOCK.WP | 9 | 0.687 | 31.9 |
| GRAIN MEAN DM% | 81.4 | | |
| PLOT AREA HARVESTED | 0.00190 | | |

94/R/RAS/3

SPRING OILSEED RAPE

SEMIOCHEMICALS AND POLLEN BEETLES

Object: To test behaviour modifying chemicals on pollen beetles (*Meligethes* spp.) and seed weevils (*Ceutorhynchus assimilis*) in the field - Sawyers II.

Sponsors: L.E. Smart, M.M. Blight.

Design: 5 x 5 quasi-complete Latin square.

Whole plot dimensions: 9.0 x 9.0.

Treatments:

| SEMICHEM | Behaviour modifying chemical: |
|----------|-------------------------------|
| - | None |
| A | 2-phenyl ethyl isothiocyanate |
| B | butyl isothiocyanate |
| C | pentyl isothiocyanate |
| D | methyl salicylate |

NOTE: These behaviour modifying chemicals are host plant volatiles. They were released from point sources in the centre of the plots from mid-June till mid-August.

Experimental diary:

04-Nov-93 : B : Ploughed.
18-Apr-94 : B : Spring-tine cultivated, rotary harrowed, Starlight, dressed Lindex-Plus FS, drilled at 200 seeds per m².
19-Apr-94 : B : Butisan S at 1.5 l in 200 l.
10-May-94 : B : 34.5% N at 348 kg.
24-Aug-94 : B : Combine harvested.

Previous crops: S. wheat 1992, linseed 1993.

NOTE: Numbers of pollen beetles and seed weevils were assessed weekly throughout the summer. Pods were sampled in July to assess seed weevil damage.

94/R/RAS/3

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

SEMICHEM

| | |
|------|------|
| - | 1.95 |
| A | 1.84 |
| B | 1.86 |
| C | 1.89 |
| D | 1.61 |
| Mean | 1.83 |

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

SEMICHEM

0.109

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

| Stratum | d.f. | s.e. | cv% |
|---------|------|-------|-----|
| ROW.COL | 12 | 0.172 | 9.4 |

GRAIN MEAN DM% 82.5

PLOT AREA HARVESTED 0.00207

94/R/BEW/2

WINTER BEANS

WEED COMPETITION - BEANS AND WEEDS

Object: To investigate the effects of two weed species on each other and on the growth and yield of winter beans - Pastures.

Sponsors: R.C. Van Acker, P.J.W. Lutman.

Design: 3 randomised blocks of 5 x 5 plots.

Whole plot dimensions: 3.0 x 15.0.

Treatments:

1. **BRLY DEN** Number of established barley plants per m²:

| | |
|----|-----|
| B0 | 0 |
| B1 | 13 |
| B2 | 27 |
| B3 | 81 |
| B4 | 170 |

2. **MUST DEN** Number of established white mustard plants per m²:

| | |
|----|-----|
| M0 | 0 |
| M1 | 18 |
| M2 | 38 |
| M3 | 66 |
| M4 | 119 |

NOTES: (1) Target weed densities, number of established plants per m²:

BRLY DEN: 0, 50, 100, 200, 400

MUST DEN: 0, 50, 100, 200, 400

(2) Barley and mustard seeds were sown on restricted areas of each plot as follows:

BRLY DEN central 2m, **MUST DEN** central 2.5m.

Experimental diary:

29-Oct-93 : B : Ploughed, spring-tine cultivated.

01-Nov-93 : B : Rotary harrowed.

02-Nov-93 : B : Rotary harrowed, Punch drilled at 25 seeds per m².

: T : **BRLY DEN** B1, B2, B3, B4: Puffin, dressed Cerevax, broadcast by machine.

05-Nov-93 : B : 34.5% N at 145 kg.

23-Feb-94 : T : **MUST DEN** M1, M2, M3, M4: White mustard seed broadcast by hand.

01-Mar-94 : B : Basagran at 1.5 l in 200 l.

10-Mar-94 : B : Hoegrass at 3.0 l in 200 l.

06-May-94 : B : Bombardier at 1.5 l with Ronilan FL at 0.5 l in 300 l.

23-Aug-94 : B : Hand harvested.

Previous crops: W. rape 1992, w. wheat 1993.

94/R/BEW/2

- NOTES: (1) Chickweed, sown by hand after drilling the w. beans, failed to emerge due to subsequent cold, wet conditions. White mustard was sown instead in late winter.
- (2) Leaf area indices of barley, mustard and beans were measured on two occasions during the growing season. Percentage ground cover was assessed by visual and photographic methods on two occasions early in the growing season. Weed seed yield, as well as crop components of yield, were measured before harvest.

GRAIN TONNES/HECTARE

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

| MUST DEN BRLY DEN | M0 | M1 | M2 | M3 | M4 | Mean |
|----------------------|------|------|------|------|------|------|
| B0 | 5.23 | 4.76 | 4.28 | 4.20 | 4.51 | 4.60 |
| B1 | 5.03 | 4.72 | 4.16 | 3.92 | 4.07 | 4.38 |
| B2 | 5.48 | 4.50 | 3.95 | 4.06 | 4.11 | 4.42 |
| B3 | 4.35 | 4.22 | 4.23 | 3.81 | 4.29 | 4.18 |
| B4 | 3.93 | 4.39 | 4.23 | 3.97 | 3.83 | 4.07 |
| Mean | 4.80 | 4.52 | 4.17 | 3.99 | 4.16 | 4.33 |

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

| BRLY DEN | MUST DEN | BRLY DEN MUST DEN |
|----------|----------|----------------------|
| 0.191 | 0.191 | 0.426 |

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

| Stratum | d.f. | s.e. | cv% |
|----------|------|-------|------|
| BLOCK.WP | 48 | 0.522 | 12.1 |

GRAIN MEAN DM% *

PLOT AREA HARVESTED 0.00010