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80/R/RA/1 Winter Oilseed Rape Fungicides

Rothamsted Research

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80/R/RA/1

WINTER OILSEED RAPE

FUNGICIDES

Object: To study the effects of a range of fungicides on canker, light leaf spot, mildew and yield of winter oilseed rape - Summerdells I.

Sponsors: C.J. Rawlinson, G.R. Cayley.

Design: 3 randomised blocks of 18 plots.

Whole plot dimensions: 4.27 x 9.14.

Treatments: All combinations of:-

1. FUNGICIDE Fungicides applied at 0.5 kg a.i. on each occasion:

| | |
|----------|--------------------------|
| BENOMYL | Benomyl |
| BTS | 'BTS 40542' (prochloraz) |
| CGA | 'CGA 48988A' (metalaxyl) |
| IMAZALIL | Imazalil |
| THIABEND | Thiabendazole |

2. APP TIME Times of applying fungicides:

| | |
|----------|-----------------------------|
| AUT | Autumn on 13 November, 1979 |
| SPNG | Spring on 27 February, 1980 |
| AUT+SPNG | Autumn + spring |

plus one extra treatment (three plots per block):

EXTRA

NONE No fungicides

Basal applications: Manures: (13.13.20) at 380 kg. 'Nitro-Chalk' at 750 kg. Weedkillers: Dalapon at 0.95 kg with propyzamide at 0.70 kg in 220 l. 3, 6-Dichloropicolinic acid with benazolin ('Benazolox' at 1.0 kg) in 250 l. Desiccant: Diquat at 0.56 kg ion in 220 l.

Seed: Primor, dressed with gamma HCH. Benomyl and thiram, sown at 9 kg.

Cultivations, etc.: - NPK applied, heavy spring-tine harrowed twice: 10 Sept, 1979. Chisel ploughed, rotary harrowed, seed sown, 11 Sept. Dalapon and propyzamide applied: 2 Nov. N applied: 20 Feb, 1980. 'Benazolox' applied: 29 Feb. Desiccant applied: 25 July. Hand harvested: 23 July. Previous crops: Winter oilseed rape 1978 and 1979.

- NOTES: (1) The crop was damaged by sparrows shortly before maturity and despite hand harvesting the grain yields presented reflect considerable loss from this cause. Straw yields were not affected and are presented as better indicators of the effects of treatments on crop growth.
- (2) Growth and disease assessments were made monthly from March until harvest.

80/R/RA/1

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

| APP TIME FUNGICIDE | AUT | SPNG | AUT+SPNG | MEAN |
|-----------------------|------|------|----------|------|
| BENOMYL | 1.18 | 0.69 | 1.21 | 1.03 |
| BTS | 1.33 | 0.97 | 0.92 | 1.07 |
| CGA | 0.72 | 0.55 | 0.69 | 0.65 |
| IMAZALIL | 1.11 | 1.07 | 1.47 | 1.22 |
| THIABEND | 0.98 | 0.88 | 0.65 | 0.84 |
| MEAN | 1.06 | 0.83 | 0.99 | 0.96 |

NONE 0.64

GRAND MEAN 0.91

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

| TABLE | FUNGICIDE | APP TIME | FUNGICIDE APP TIME & NONE |
|-------|-----------|----------|---------------------------------|
| SED | 0.155 | 0.120 | 0.269 0.220* |

* FOR COMPARISONS INVOLVING NONE ONLY

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

| STRATUM | DF | SE | CV% |
|----------|----|-------|------|
| BLOCK.WP | 36 | 0.330 | 36.3 |

STRAW TONNES/HECTARE

***** TABLES OF MEANS *****

| APP TIME FUNGICIDE | AUT | SPNG | AUT+SPNG | MEAN |
|-----------------------|------|------|----------|------|
| BENOMYL | 6.45 | 5.35 | 7.56 | 6.45 |
| BTS | 6.96 | 5.45 | 6.02 | 6.14 |
| CGA | 4.39 | 3.43 | 4.09 | 3.97 |
| IMAZALIL | 6.03 | 5.91 | 7.95 | 6.63 |
| THIABEND | 5.24 | 4.90 | 5.05 | 5.06 |
| MEAN | 5.81 | 5.01 | 6.13 | 5.65 |

NONE 4.02

GRAND MEAN 5.38

PLOT AREA HARVESTED 0.000005