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# Yields of the Field Experiments 1976

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## 76/R/WW/8 Fungicides and Grain Microflora - W. Wheat

### Rothamsted Research

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76/R/WW/8

# WINTER WHEAT

## FUNGICIDES AND GRAIN MICROFLORA

Object: To study the effects of a range of fungicides applied at a range of times on the yield, quality and grain microflora of winter wheat - Long Hoos IV 4.

Sponsor: R.A. Hill.

Design: Single replicate of 2 x 3 x 2 x 2 x 2 fully randomised.

Whole plot dimensions: 2.41 x 8.23.

Treatments: All combinations of:-

### 1. SPECFUNG Specific fungicides for foliar pathogen control:

|      |                                                                                   |
|------|-----------------------------------------------------------------------------------|
| NONE | None                                                                              |
| T+B  | Tridemorph at 0.53 kg plus benodanil at 1.4 kg mixed and applied on 14 and 27 May |

### 2. B S FUNG Broad spectrum fungicides:

|          |                                                        |
|----------|--------------------------------------------------------|
| BENOMYL  | Benomyl at 0.28 kg                                     |
| CAPTAFOL | Captafol at 1.4 kg                                     |
| BEN+CAP  | Benomyl and captafol at above rates applied separately |

### 3. APP TIME Application of broad spectrum fungicides:

|       | 3 June  | 24 June | 8 July  |
|-------|---------|---------|---------|
| NONE  | None    | None    | None    |
| E     | Sprayed | None    | None    |
| M     | None    | Sprayed | None    |
| L     | None    | None    | Sprayed |
| E+M   | Sprayed | Sprayed | None    |
| E+L   | Sprayed | None    | Sprayed |
| M+L   | None    | Sprayed | Sprayed |
| E+M+L | Sprayed | Sprayed | Sprayed |

NOTE: All sprays were applied in 340 l.

Basal applications: Manures: (0:14:28) at 880 kg. 'Nitro-Chalk' at 450 kg.

Seed: Cama, sown at 200 kg.

Cultivations, etc.: PK applied: 23 Sept, 1975. Ploughed: 26 Sept. Power harrowed and sown: 14 Oct. N applied: 10 May, 1976. Combine harvested: 28 July. Previous crops: Spring wheat 1974, fallow 1975.

NOTE: Grain microflora were assessed at fortnightly intervals from late May to harvest. Mildew and rust were assessed on several occasions. Eyespot and glume blotch were assessed before harvest.

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GRAIN TONNES/HECTARE

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

ALL PLOTS

| APP TIME | NONE | E    | M    | L    | E+M  | E+L  | M+L  | E+M+L | MEAN |
|----------|------|------|------|------|------|------|------|-------|------|
| SPECFUNG |      |      |      |      |      |      |      |       |      |
| NONE     | 5.84 | 5.83 | 5.89 | 5.93 | 5.84 | 6.08 | 5.54 | 5.58  | 5.82 |
| T+B      | 5.68 | 5.93 | 6.19 | 5.72 | 5.65 | 6.00 | 5.87 | 5.87  | 5.86 |
| MEAN     | 5.76 | 5.88 | 6.04 | 5.82 | 5.75 | 6.04 | 5.70 | 5.73  | 5.84 |

EXCLUDING APP TIME NONE

| APP TIME | E    | M    | L    | E+M  | E+L  | M+L  | E+M+L | MEAN |
|----------|------|------|------|------|------|------|-------|------|
| B S FUNG |      |      |      |      |      |      |       |      |
| BENOMYL  | 5.76 | 6.21 | 5.99 | 5.71 | 6.30 | 5.53 | 5.68  | 5.88 |
| CAPTAFOL | 5.98 | 5.60 | 6.26 | 5.54 | 5.83 | 5.73 | 5.57  | 5.79 |
| BEN+CAP  | 5.90 | 6.31 | 5.21 | 5.98 | 6.01 | 5.85 | 5.93  | 5.89 |
| MEAN     | 5.88 | 6.04 | 5.82 | 5.75 | 6.04 | 5.70 | 5.73  | 5.85 |

| B S FUNG | BENOMYL | CAPTAFOL | BEN+CAP | MEAN |
|----------|---------|----------|---------|------|
| SPECFUNG |         |          |         |      |
| NONE     | 5.76    | 5.69     | 5.98    | 5.81 |
| T+B      | 6.00    | 5.88     | 5.79    | 5.89 |
| MEAN     | 5.88    | 5.79     | 5.89    | 5.85 |

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

| TABLE | SPECFUNG        | B S FUNG | APP TIME | SPECFUNG<br>B S FUNG |
|-------|-----------------|----------|----------|----------------------|
| SED   | 0.130<br>0.139* | 0.170    | 0.260    | 0.241                |

| TABLE | SPECFUNG<br>APP TIME | B S FUNG<br>APP TIME |
|-------|----------------------|----------------------|
| SED   | 0.368                | 0.451                |

\* USE ONLY WITH TABLES EXCLUDING APP TIME NONE

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

| STRATUM | DF | SE    | CV% |
|---------|----|-------|-----|
| WP      | 16 | 0.451 | 7.7 |

GRAIN MEAN DM% 87.8

PLOT AREA HARVESTED 0.00111