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# Yields of the Field Experiments 1982

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## 82/R/WW/6 Fungicides and Microflora - Winter Wheat

### Rothamsted Research

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82/R/WW/6

WINTER WHEAT

FUNGICIDES AND MICROFLORA

Object: To study the effects of a range of fungicides and times of application on the colonisation of fungi on flag leaves and developing ears and on the yield of w. wheat - Geescroft.

Sponsor: N. Magan.

Design: 2 randomised blocks of 24 plots.

Whole plot dimensions: 3.0 x 14.0.

Treatments: All combinations of:-

1. E FUNG Early-applied fungicides:

|          |   |
|----------|---|
| NONE     | None  |
| CARB+MAN | Carbendazim at 0.25 kg plus maneb at 1.6 kg applied on 26 May |

2. L FUNG A Late-applied fungicides:

|          |  |
|----------|--|
| BE+MN+MZ | Benomyl at 0.56 kg, plus maneb at 0.78 kg, and mancozeb at 0.78 kg |
| CAPTAFOL | Captafol at 1.4 kg   |
| CARB+MAN | Carbendazim at 0.25 kg plus maneb at 1.6 kg                        |
| IMAZALIL | Imazalil at 0.39 kg  |
| PROCHLOR | Prochloraz at 0.40 l   |

3. LFNGDATE Dates of applying late fungicide:

|   |               |
|---|---------------|
| M | 10 June, 1982 |
| L | 16 June       |

plus two extra treatments not given L FUNG:

L FUNG 0

|          |  |
|----------|--|
| NONE     | No early-applied fungicide (duplicated)                                    |
| CARB+MAN | Carbendazim at 0.25 kg plus maneb at 1.6 kg applied on 26 May (duplicated) |

NOTE: Treatment sprays were applied in 340 l.

Basal applications: Manures: 'Nitro-Chalk' applied at 480 kg. Weedkillers: Mecoprop (as 'Methoxone' at 5.0 l) with isoproturon at 2.0 kg in 250 l.

Seed: Maris Huntsman, sown at 190 kg.

Cultivations, etc.: - Spring-tine cultivated: 8 Oct, 1981. Heavy spring-tine cultivated twice: 12 Oct. Spring-tine cultivated, rotary harrowed, seed sown: 13 Oct. Weedkillers applied: 15 Apr, 1982. N applied: 23 Apr. Combine harvested: 11 Aug. Previous crops: W. beans 1980, potatoes 1981.

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NOTE: Grain and leaf microflora, especially *Alternaria* and *Cladosporium*, were assessed fortnightly from June to August.

GRAIN TONNES/HECTARE

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

|            |          |          |          |          |          |      |
|------------|----------|----------|----------|----------|----------|------|
| L FUNG A   | BE+MN+MZ | CAPTAFOL | CARB+MAN | IMAZALIL | PROCHLOR | MEAN |
| E FUNG     |          |          |          |          |          |      |
| NONE       | 8.14     | 8.37     | 7.98     | 7.63     | 7.98     | 8.02 |
| CARB+MAN   | 8.64     | 8.17     | 8.45     | 8.29     | 8.39     | 8.39 |
| MEAN       | 8.39     | 8.27     | 8.22     | 7.96     | 8.19     | 8.20 |
| LFNGDATE   | M        | L        | MEAN     |          |          |      |
| E FUNG     |          |          |          |          |          |      |
| NONE       | 8.16     | 7.89     | 8.02     |          |          |      |
| CARB+MAN   | 8.38     | 8.39     | 8.39     |          |          |      |
| MEAN       | 8.27     | 8.14     | 8.20     |          |          |      |
| LFNGDATE   | M        | L        | MEAN     |          |          |      |
| L FUNG A   |          |          |          |          |          |      |
| BE+MN+MZ   | 8.20     | 8.58     | 8.39     |          |          |      |
| CAPTAFOL   | 8.30     | 8.25     | 8.27     |          |          |      |
| CARB+MAN   | 8.38     | 8.05     | 8.22     |          |          |      |
| IMAZALIL   | 8.07     | 7.84     | 7.96     |          |          |      |
| PROCHLOR   | 8.40     | 7.97     | 8.19     |          |          |      |
| MEAN       | 8.27     | 8.14     | 8.20     |          |          |      |
| E FUNG     | LFNGDATE | M        | L        |          |          |      |
| NONE       | L FUNG A |          |          |          |          |      |
|            | BE+MN+MZ | 7.91     | 8.37     |          |          |      |
|            | CAPTAFOL | 8.50     | 8.25     |          |          |      |
|            | CARB+MAN | 8.32     | 7.64     |          |          |      |
|            | IMAZALIL | 7.65     | 7.60     |          |          |      |
|            | PROCHLOR | 8.39     | 7.58     |          |          |      |
| CARB+MAN   | BE+MN+MZ | 8.48     | 8.80     |          |          |      |
|            | CAPTAFOL | 8.09     | 8.25     |          |          |      |
|            | CARB+MAN | 8.44     | 8.46     |          |          |      |
|            | IMAZALIL | 8.49     | 8.08     |          |          |      |
|            | PROCHLOR | 8.42     | 8.36     |          |          |      |
| L FUNG O   | NONE     | CARB+MAN | MEAN     |          |          |      |
|            | 8.07     | 7.75     | 7.91     |          |          |      |
| GRAND MEAN | 8.16     |          |          |          |          |      |

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GRAIN TONNES/HECTARE

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

| TABLE | L FUNG O | E FUNG | L FUNG A | LFNGDATE |
|-------|----------|--------|----------|----------|
| SED   | 0.364    | 0.163  | 0.258    | 0.163    |

| TABLE | E FUNG<br>L FUNG A | E FUNG<br>LFNGDATE | L FUNG A<br>LFNGDATE | E FUNG<br>L FUNG A<br>LFNGDATE |
|-------|--------------------|--------------------|----------------------|--------------------------------|
| SED   | 0.364              | 0.230              | 0.364                | 0.515                          |

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

| STRATUM  | DF | SE    | CV% |
|----------|----|-------|-----|
| BLOCK.WP | 25 | 0.515 | 6.3 |

GRAIN MEAN DM% 85.9

PLOT AREA HARVESTED 0.00204