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# Yields of the Field Experiments 1998

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## 98/R/WW/4 Fusarium Study - W. Wheat

### Rothamsted Research

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98/R/WW/4

WINTER WHEAT

FUSARIUM STUDY

**Object:** To assess different inocula and inoculum sources on the development of ear blight in mist-irrigated or unirrigated w. wheat - Little Knott.

**Sponsors:** G.L. Bateman.

**Design:** 3 randomised blocks of 3 x 2 plots

**Whole plot dimensions:** 4.0 x 14.0.

**Treatments:**

1. **FUSARIUM**                      Fusarium inocula:
  - U                                      None
  - FS                                    F. culmorum as spores
  - FG                                    F. culmorum as colonised grain
2. **MISTING**
  - U                                      None
  - M                                    Irrigated

**Experimental diary:**

- 17-Sep-97 : B : Scythe LC at 1.5 l with Vassgro Non Ionic at 100 ml in 200 l.
- 25-Sep-97 : B : Ploughed.
- 27-Sep-97 : B : Rolled.
- 06-Oct-97 : B : Rotary harrowed, Charger, dressed Beret Gold drilled at 380 seeds per m<sup>2</sup>.
- 26-Nov-97 : B : Lexus Class WSB at 60 g in 200 l
- 18-Feb-98 : B : 34.5% N at 120 kg.
- 31-Mar-98 : T : **FUSARIUM** FG: Inoculum applied.
- 28-Apr-98 : B : 34.5% N at 460 kg.
- 09-May-98 : B : Ally at 15 g with Topik at 125 ml and Chiltern Cropoil at 1.0 l in 200 l.
- 18-May-98 : B : Terpal at 1.0 l with Headland Enhance LF at 40 ml in 200 l.
- 03-Jun-98 : T : **FUSARIUM** FS: Inoculation and mist irrigation begun.
- 13-Jun-98 : T : **FUSARIUM** FS: Inoculation and mist irrigation completed.
- 20-Aug-98 : B : Combine harvested.

Previous crops: W. wheat 1996, w. oats 1997

- NOTES:**
- (1) Mist irrigation was applied to pairs of plots in sequence between 03-Jun-98 and 13-Jun 98.
  - (3) Ear blight was assessed in June. Plant samples were taken in July to assess stem base diseases and isolation of fungal pathogens. Seeds were assessed at harvest for fungal infection.

98/R/WW/4

**GRAIN TONNES/HECTARE**

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

|                 | MISTING | - | M    | Mean |
|-----------------|---------|---|------|------|
| <b>FUSARIUM</b> |         |   |      |      |
| U               | 7.12    |   | 6.84 | 6.98 |
| FS              | 3.58    |   | 3.70 | 3.64 |
| FG              | 6.68    |   | 6.38 | 6.53 |
| Mean            | 5.79    |   | 5.64 | 5.72 |

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

| <b>FUSARIUM</b> | <b>MISTING</b> | <b>FUSARIUM</b><br><b>MISTING</b> |
|-----------------|----------------|-----------------------------------|
| 0.231           | 0.189          | 0.327                             |

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

| Stratum             | d.f.    | s.e.  | cv% |
|---------------------|---------|-------|-----|
| BLOCK.WP            | 10      | 0.400 | 7.0 |
| GRAIN MEAN DM%      | 86.2    |       |     |
| PLOT AREA HARVESTED | 0.00138 |       |     |