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# Yields of the Field Experiments 1980

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## 80/R/B/9 Spring Barley Controlled Drop Application of Tridemorph

### Rothamsted Research

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80/R/B/9

SPRING BARLEY

CONTROLLED DROP APPLICATION OF TRIDEMORPH

Object: To compare controlled drop application with conventional spraying on the deposition of spray material, control of mildew and on the yield of s. barley - Gt. Harpenden II.

Sponsors: F.T. Phillips, P. Etheridge, A.J. Arnold, B. Pye.

Design: 3 randomised blocks of 11 plots.

Whole plot dimensions: 4.27 x 24.4.

Treatments: All combinations of:-

- |             |                                                                  |
|-------------|------------------------------------------------------------------|
| 1. SPRAYER  | Sprayer and drop density:                                        |
| CDA 1       | Controlled drop application sprayer, standard drop density       |
| CDA 2       | Controlled drop application sprayer, twice standard drop density |
| HYDRAUL     | Hydraulic sprayer                                                |
| 2. TRI RATE | Rates of applying tridemorph (on 12 June, 1980):                 |
| 1           | Standard, 525 g                                                  |
| 1/2         | Half standard, 263 g                                             |
| 1/4         | Quarter standard, 132 g                                          |

plus two extra plots

EXTRA

- |         |                                                                                              |
|---------|----------------------------------------------------------------------------------------------|
| NONE    | Unsprayed                                                                                    |
| CDA R 1 | Controlled drop application sprayer, reduced drop density, applying standard rate tridemorph |

NOTES (1) CDA sprayer applied tridemorph in 19 l.

(2) Hydraulic sprayer applied tridemorph in 340 l.

Basal applications: Manures: (20:10:10) at 450 kg, combine drilled.

Weedkillers: Dicamba with mecoprop and MCPA (as 'Banlene Plus' at 5.0 l) in 250 l.

Seed: Wing, sown at 160 kg.

Cultivations, etc.: Ploughed: 13 Nov, 1979. Spring-tine cultivated:

5 Apr, 1980. Seed sown: 6 Apr. Weedkillers applied: 25 May. Combine harvested: 1 Sept. Previous crops: S. beans 1978, w. wheat 1979.

NOTE: Observations were made on patterns of spray deposition using very small quantities of permethrin as a chemical marker. Mildew was assessed twice during the season.

80/R/B/9

GRAIN TONNES/HECTARE

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

| TRI RATE<br>SPRAYER | 1    | 1/2  | 1/4  | MEAN |
|---------------------|------|------|------|------|
| CDA 1               | 4.72 | 4.36 | 4.96 | 4.68 |
| CDA 2               | 4.95 | 4.72 | 4.60 | 4.76 |
| HYDRAUL             | 5.65 | 4.88 | 4.54 | 5.02 |
| MEAN                | 5.11 | 4.65 | 4.70 | 4.82 |

| EXTRA | NONE | CDA R 1 | MEAN |
|-------|------|---------|------|
|       | 4.34 | 4.81    | 4.57 |

GRAND MEAN 4.77

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

| TABLE | EXTRA | SPRAYER | TRI RATE | SPRAYER<br>TRI RATE<br>& EXTRA |
|-------|-------|---------|----------|--------------------------------|
| SED   | 0.304 | 0.175   | 0.175    | 0.304                          |

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

| STRATUM  | DF | SE    | CV% |
|----------|----|-------|-----|
| BLOCK.WP | 20 | 0.372 | 7.8 |

GRAIN MEAN DM% 84.4

PLOT AREA HARVESTED 0.00520