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# Yields of the Field Experiments 1985

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## 85/R/WW/5 Persistence of Aphicides - W. Wheat

### Rothamsted Research

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85/R/WW/5

WINTER WHEAT

PERSISTENCE OF APHICIDES

Object: To examine the persistence of aphicides applied at two growth stages and their effect on the yield of winter wheat - Geescroft.

Sponsor: N. Carter.

Design: 4 randomised blocks of 14 plots.

Whole plot dimensions: 3.0 x 13.0.

Treatments: All combinations of:-

1. APHICIDE      Aphicides:

|          |  |
|----------|--|
| DELTAMET | Deltamethrin at 0.012 kg   |
| DELT EL  | Deltamethrin at 0.012 kg applied by electrostatic sprayer                    |
| DEMETON  | Demeton-S-methyl at 0.24 kg  |
| PIRIM ST | Pirimicarb (standard formulation) at 0.14 kg                                 |
| PIR+321  | Pirimicarb (standard formulation) at 0.14 kg plus 'PP 321' at 0.0075 kg a.i. |
| PIRIM EN | Pirimicarb (encapsulated) at 0.14 kg   |
  
2. APH TIME      Timing of aphicides:

|       |  |
|-------|--|
| GS 45 | Booting, growth stage 45 on 4 June, 1985 |
| GS 65 | Flowering, growth stage 65 on 19 June    |

Plus one extra treatment:

|       |                          |
|-------|--------------------------|
| EXTRA |                          |
| NONE  | No aphicide (duplicated) |

NOTE: All aphicides were applied in 200 l by hydraulic sprayer except DELT EL in 10 l by electrostatic sprayer.

Basal applications: Manures: 'Nitro-Chalk' (27.5% N) at 140 kg followed by 390 kg. Weedkillers: Isoproturon at 2.4 kg and mecoprop (as 'CMPP' at 4.2 l) with the insecticide in 250 l. Mecoprop at 2.0 kg, bromoxynil at 0.25 kg and ioxynil at 0.25 kg in 200 l. Fungicides: Propiconazole in 200 l on two occasions at 0.25 kg on the first, at 0.12 kg with carbendazim and maneb (as 'Septal' at 2.5 kg on the second). Insecticide: Cypermethrin at 0.025 kg.

Seed: Avalon, sown at 170 kg.

Cultivations, etc.:- Ploughed: 18 Sept, 1984. Rotary harrowed twice, seed sown: 19 Sept. Isoproturon, mecoprop and the insecticide applied: 31 Oct. First N applied: 11 Mar, 1985. Mecoprop, bromoxynil and ioxynil and second N applied: 15 Apr. First propiconazole applied: 14 June. Propiconazole with carbendazim and maneb applied: 2 July. Combine harvested: 29 Aug. Previous crops: S. barley 1983, w. beans 1984.

NOTE: Naturally occurring aphids were counted at weekly intervals from early June to the end of July.

85/R/WW/5

GRAIN TONNES/HECTARE

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

| APH TIME | GS 45 | GS 65 | MEAN  |
|----------|-------|-------|-------|
| APHICIDE |       |       |       |
| DELTAMET | 10.13 | 9.77  | 9.95  |
| DELT EL  | 10.17 | 10.29 | 10.23 |
| DEMETON  | 9.69  | 10.00 | 9.85  |
| PIRIM ST | 9.55  | 9.93  | 9.74  |
| PIR+321  | 10.38 | 9.66  | 10.02 |
| PIRIM EN | 10.11 | 9.95  | 10.03 |
| MEAN     | 10.01 | 9.93  | 9.97  |

NONE 9.50

GRAND MEAN 9.90

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

| TABLE | APH TIME | APHICIDE | APH TIME<br>APHICIDE |
|-------|----------|----------|----------------------|
| ----- | -----    | -----    | -----                |
| SED   | 0.125    | 0.217    | 0.307                |

SED FOR COMPARING NONE WITH ANY ITEM IN  
APH TIME.APHICIDE TABLE IS 0.266

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

| STRATUM  | DF | SE    | CV% |
|----------|----|-------|-----|
| BLOCK.WP | 40 | 0.434 | 4.4 |

GRAIN MEAN DM% 83.6

PLOT AREA HARVESTED 0.00359