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83/R/CS/261 Benomyl and Take-all - W. Wheat

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83/R/CS/261

BENOMYL AND TAKE-ALL

Object: To study the effects of benomyl, applied to the soil with and without a surfactant, and of nuarimol on take-all (*Gaeumannomyces graminis*) and on the yield of w. wheat - New Zealand.

Sponsor: G.L. Bateman.

The third year, w. wheat.

For previous years see 81-82/R/CS/261.

Design: 4 randomised blocks of 7 plots.

Whole plot dimensions: 2.13 x 12.2.

Treatments:

| FUNGICIDE | Residues of fungicides and surfactant applied for wheat in 1981 and fresh applications for wheat in 1983: |
|-----------|---|
| NONE | None |
| (BEN A) | Benomyl at 20 kg in autumn 1980 |
| (BEN S) | Benomyl at 20 kg in spring 1981 |
| (NUA A) | Nuarimol at 2.2 kg in autumn 1980 |
| BEN A | Benomyl at 20 kg in autumn 1982 |
| BEN SF A | Benomyl at 20 kg plus a surfactant (an alcohol ethoxylate at 44 l) in autumn 1982 |
| SF A | Surfactant alone in autumn 1982 |

NOTES: (1) Treatments applied in autumn 1982 were randomly allocated to plots given benomyl, nuarimol or surfactant in spring 1981.
(2) All fresh treatments were applied in 8,800 l on 31 Oct, 1982.

Basal applications: Manures: (0:18:36) at 250 kg. 'Nitro-Chalk' at 630 kg.
Weedkillers: Isoproturon at 2.0 kg with mecoprop at 3.2 kg in 250 l.
Fungicide: Propiconazole at 0.12 kg in 250 l. Growth regulator:
Chlormequat at 1.1 kg in 250 l.

Seed: Avalon, seed not treated, sown at 180 kg.

Cultivations, etc.: PK applied: 10 Sept, 1982. Ploughed: 21 Sept.
Spring-tine cultivated, rotary harrowed, seed sown: 15 Oct. N applied:
15 Apr, 1983. Weedkillers applied: 16 Apr. Growth regulator applied:
29 Apr. Fungicide applied: 17 June. Combine harvested: 10 Aug.

NOTE: Take-all and footrots were assessed in May, June and July.

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GRAIN TONNES/HECTARE

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

| FUNGCIDE | |
|----------|-------|
| NONE | 9.56 |
| (BEN A) | 9.06 |
| (BEN S) | 9.84 |
| (NUA A) | 10.04 |
| BEN A | 9.40 |
| BEN SF A | 9.37 |
| SF A | 8.96 |
| MEAN | 9.46 |

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

| TABLE | FUNGCIDE |
|-------|----------|
| ----- | ----- |
| SED | 0.535 |

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

| STRATUM | DF | SE | CV% |
|----------|----|-------|-----|
| BLOCK.WP | 18 | 0.757 | 8.0 |

GRAIN MEAN DM% 87.1

PLOT AREA HARVESTED 0.00168