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

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81/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 first year, w. wheat.

Design: 4 randomised blocks of 7 plots.

Whole plot dimensions: 2.13 x 12.2.

Treatments:

| FUNGCIDE | Fungicides, surfactant and times and methods of application: |
|----------|---|
| NONE | None |
| SF S | Surfactant (an alcohol ethoxylate at 115 l) as a drench in 11,500 l in spring |
| BEN A | Benomyl at 20 kg worked in to seedbed in autumn |
| BEN S | Benomyl at 20 kg, as a drench in 11,500 l in spring |
| BEN+SF S | Benomyl at 20 kg plus surfactant as above as a drench in 11,500 l in spring |
| NUA A | Nuarimol at 2.2 kg worked in to seedbed in autumn |
| NUA S | Nuarimol at 2.2 kg, as a drench in 11,500 l in spring |

NOTE: Treatments were applied on 2 Oct, 1980 and 24 Apr, 1981.

Basal applications: Manures: (10:23:23) at 250 kg, combine drilled. 'Nitro-Chalk' at 390 kg. Weedkillers: Paraquat at 0.84 kg ion in 250 l. Chlortoluron at 5.6 l in 250 l. Growth regulator: Chlormequat at 1.7 l in 250 l.

Seed: Flanders, with no seed dressing, sown at 200 kg.

Cultivations, etc.: - Paraquat applied: 19 Sept, 1980. Ploughed: 27 Sept. Spring-tine cultivated twice: 1 Oct. Spike rotary cultivated, harrowed: 2 Oct. Seed sown: 3 Oct. Chlortoluron applied: 10 Oct. N applied: 16 Apr, 1981. Growth regulator applied: 24 Apr. Combine harvested: 25 Aug. Previous crops: Grass and fallow 1979, w. wheat, 1980.

NOTE: Foot and root rots were assessed monthly between April and July.

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GRAIN TONNES/HECTARE

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

| FUNGCIDE | NONE | SF S | BEN A | BEN S | BEN+SF S | NUA A | NUA S | MEAN |
|----------|------|------|-------|-------|----------|-------|-------|------|
| | 7.64 | 5.02 | 7.48 | 8.59 | 6.05 | 7.70 | 7.72 | 7.17 |

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

| TABLE | FUNGCIDE |
|-------|----------|
| ----- | ----- |
| SED | 0.367 |

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

| STRATUM | DF | SE | CV% |
|----------|----|-------|-----|
| BLOCK.WP | 18 | 0.520 | 7.2 |

GRAIN MEAN DM% 79.2

PLOT AREA HARVESTED 0.00176