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79/R/BE/13 Comparison of Fungicides - Beans

Rothamsted Research

Rothamsted Research (1980) *79/R/BE/13 Comparison of Fungicides - Beans* ; Yields Of The Field Experiments 1979, pp 341 - 343 - DOI: <https://doi.org/10.23637/ERADOC-1-45>

79/R/BE/13

SPRING BEANS

COMPARISON OF FUNGICIDES

Object: To study the effects of a range of fungicides and methods of application on the incidence of diseases and on the yield of spring beans - Long Hoos V 4.

Sponsors: G.A. Salt, J. McEwen, D.P. Yeoman.

Design: Single replicate of 38 plots.

Whole plot dimensions: 2.03 x 2.13.

Treatments: All combinations of:-

| | | | |
|-----------------------------|--|-----------------------------|-----------------------------|
| 1. FUNGCIDE | Fungicides: | | |
| AL TRI | Aluminium tris (ethylphosphonate) 'Aliette' | | |
| BENOMYL | Benomyl | | |
| DL METH | DL-methyl N- (2, 6 dimethylphenyl)-N (2 methoxy-acetyl) alaninate. 'Ridomil' | | |
| THIABEND | Thiabendazole | | |
| 2. APP TIME | Application times: | | |
| | Seedbed (as seed dressing) | 5 June (as foliar spray) | 3 July (as foliar spray) |
| S | Applied | None | None |
| EF | None | Applied | None |
| LF | None | None | Applied |
| S+EF | Applied | Applied | None |
| S+LF | Applied | None | Applied |
| EF+LF | None | Applied | Applied |
| S+EF+LF | Applied | Applied | Applied |
| plus four extra treatments: | | | |
| EXTRA | | | |
| NONE | None (four plots) | | |
| STICKER | Methyl cellulose sticker only to seed (two plots) | | |
| BE TH S | Benomyl + thiram seed dressing + sticker (two plots) | | |
| THI HI S | Thiabendazole high rate seed dressing + sticker (two plots) | | |

NOTES: (1) Rates of application were as follows (a methyl cellulose sticker was used for seed dressings; foliar sprays were in 500 l for the early and 1000 l for the late application)

| Treatment | Seed dressings g a.i. per kg seed | Foliar sprays kg a.i. per ha |
|-------------------------|--------------------------------------|---------------------------------|
| 'Aliette' | 4.0 | 3.4 |
| Benomyl | 8.8 | 1.0 |
| 'CGA48998' ('Ridomil') | 0.4 | 0.3 |
| Thiabendazole | 1.8 | 1.0 |
| Thiabendazole high rate | 6.0 | - |
| Benomyl | 3.0 | - |
| Thiram | 3.0 | - |

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(2) Seed was sown by hand in rows 51 cm apart, seed spaced 5 cm apart in the row.

Basal applications: Chalk at 2.9 t. Weedkillers: Trietazine and simazine (as 'Rental SC' at 2.9 kg) in 340 l. Insecticides: Permethrin at 0.15 kg in 340 l, pirimicarb at 0.14 kg in 340 l.

Seed: Minden.

Cultivations, etc.: - Chalk applied: 31 Oct, 1978. Ploughed: 22 Jan, 1979. Spring-tine cultivated and rolled: 18 Apr. Seed sown: 19 Apr. Weedkillers applied: 1 May. Permethrin applied twice: 26 June, 4 July. Pirimicarb applied twice: 9 and 26 July. Harvested by hand: 13 Sept. Previous cropping: Potatoes 1977, barley 1978.

NOTE: Plant counts were made in May and June, and root disease was assessed in July and August.

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GRAIN TONNES/HECTARE

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

| METHOD | S | EF | LF | S+EF | S+LF | EF+LF | S+EF+LF | MEAN |
|----------|------|---------|---------|----------|------|-------|---------|------|
| FUNGCIDE | | | | | | | | |
| AL TRI | 4.41 | 4.83 | 4.34 | 4.16 | 4.27 | 4.10 | 4.26 | 4.34 |
| BENOMYL | 4.22 | 4.15 | 4.23 | 4.34 | 4.31 | 4.35 | 4.04 | 4.23 |
| DL METH | 3.64 | 4.00 | 3.70 | 4.39 | 4.13 | 3.89 | 3.79 | 3.94 |
| THIABEND | 4.15 | 3.83 | 3.82 | 3.96 | 3.75 | 4.22 | 3.46 | 3.88 |
| MEAN | 4.10 | 4.20 | 4.02 | 4.21 | 4.11 | 4.14 | 3.89 | 4.10 |
| EXTRA | NONE | STICKER | BE TH S | THI HI S | | MEAN | | |
| | 4.08 | 3.84 | 4.54 | 3.74 | | 4.06 | | |

GRAND MEAN 4.09

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

| TABLE | FUNGCIDE | METHOD | FUNGCIDE METHOD |
|-------|----------|--------|--------------------|
| SED | 0.225 | 0.297 | 0.595 |

SEDS INVOLVING EXTRA PLOTS

NONE V THE REMAINDER 0.365
 BETWEEN THE REMAINDER 0.421
 NONE V FUNGCIDE.METHOD 0.471
 ANY OF REMAINDER V FUNGCIDE.METHOD 0.516

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

| STRATUM | DF | SE | CV% |
|---------|----|-------|------|
| WP | 6 | 0.421 | 10.3 |

GRAIN MEAN DM% 85.4

PLOT AREA HARVESTED 0.00015