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84/R/BE/18 Fungicides for Rust Control - S. Beans

Rothamsted Research

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84/R/BE/18

SPRING BEANS

FUNGICIDES FOR RUST CONTROL

Object: To study the effects of a range of fungicides on the control of rust (*Uromyces viciae-fabae*) and on the yield of s. beans - Long Hoos IV 3.

Sponsors: D.H. Lapwood, J. McEwen, D.P. Yeoman.

Design: 2 randomised blocks of 18 plots.

Whole plot dimensions: 2.03 x 2.13.

Treatments: All combinations of:-

1. RUSTFUNG Fungicides to control rust:
 - FENPROP Fenpropimorph at 0.7 kg
 - MANEB Maneb at 0.8 kg
 - MANCOZEB Mancozeb at 0.8 kg
 - MAN+MANC Maneb at 0.8 kg plus mancozeb at 0.8 kg
 - PROPICON Propiconazole at 0.12 kg
 - THIRAM Thiram at 2.5 kg
 - TRIADIME Triadimefon at 0.5 kg
 - ZIN+TRID Zineb polyethylene thiram disulphide at 1.6 kg
 plus tridemorph at 0.53 kg

2. RFNGTIME Times of applying fungicides to control rust:
 - ONCE Once on 1 Aug, 1984
 - TWICE Twice, on 1 Aug and 8 Aug

plus one extra treatment:

EXTRA

NONE No fungicides to control rust (duplicated)

NOTE: All sprays were applied in 340 l.

Basal applications: Manures: Chalk at 2.9 t. Weedkillers: Trietazine at 0.95 kg with simazine at 0.14 kg in 220 l. Fungicide: Benomyl at 0.56 kg in 220 l with pirimicarb. Insecticides: Permethrin at 0.15 kg in 220 l; cypermethrin at 0.025 kg in 220 l on two occasions; pirimicarb at 0.14 kg in 220 l on two occasions, the second with the benomyl.

Seed: Minden, sown at 200 kg.

Cultivations, etc.: - Chalk applied: 25 Aug, 1983. Ploughed: 17 Nov. Spring-tine cultivated, seed sown: 19 Mar, 1984. Weedkillers applied: 2 Apr. Permethrin applied: 1 May. Cypermethrin applied: 16 May, 6 June. Pirimicarb applied: 4 June. Pirimicarb with benomyl applied: 6 July. Harvested by hand: 6 Sept. Previous crops: Potatoes 1982, s. wheat 1983.

84/R/BE/18

- NOTES: (1) Plant counts were made after establishment. Amounts of chocolate spot and rust were assessed from early July until maturity. Components of yield were measured at maturity.
 (2) One plot was accidentally damaged while laying out irrigation equipment, with treatment combination FENPROP ONCE, an estimated value was used in the analysis.

GRAIN TONNES/HECTARE

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

RFNGTIME	ONCE	TWICE	MEAN
RUSTFUNG			
FENPROP	5.08	5.53	5.30
MANEB	5.26	4.81	5.03
MANCOZEB	6.31	5.70	6.01
MAN+MANC	6.03	5.41	5.72
PROPICON	5.33	4.98	5.16
THIRAM	5.63	4.87	5.25
TRIADIME	5.25	5.70	5.48
ZIN+TRID	5.56	5.42	5.49
MEAN	5.55	5.30	5.43

NONE 5.53

GRAND MEAN 5.44

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

TABLE	RUSTFUNG	RFNGTIME	RUSTFUNG RFNGTIME
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SED	0.386	0.193	0.546

SED FOR COMPARING NONE WITH ANY ITEM
 IN RUSTFUNG.RFNGTIME TABLE IS 0.473

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

STRATUM	DF	SE	CV%
BLOCK.WP	17	0.546	10.0

GRAIN MEAN DM% 89.8

PLOT AREA HARVESTED 0.00015