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# Yields of the Field Experiments 1983

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## 83/R/BE/15 Control of Rust - S. Beans

### Rothamsted Research

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83/R/BE/15

SPRING BEANS

CONTROL OF RUST

Object: To study the effects of fungicides on the control of rust (*Uromyces fabae*) and on the yield of spring beans - Long Hoos IV 5.

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

Design: 3 randomised blocks of 12 plots.

Whole plot dimensions: 2.03 x 2.13.

Treatments: All combinations of:-

1. C S FUNG            Fungicide to control chocolate spot but not rust:  
    NONE                None  
    BENOMYL            Benomyl at 0.50 kg in 340 l on 7 July, 1983
2. RUSTFUNG           Fungicides to control rust:  
    MAN+MANC            Maneb at 0.8 kg + mancozeb at 0.8 kg in 340 l  
    PROPICON            Propiconazole at 0.12 kg in 340 l
3. RFNGTIME           Times of applying fungicides to control rust:  
    ONCE                Once on 18 July  
    TWICE                Twice, on 18 and 27 July

plus extra treatments:

EXTRA

- |         |  |
|---------|--|
| NONE    | None (duplicated)                                  |
| BENOMYL | Benomyl at 0.50 kg in 340 l on 7 July (duplicated) |

Basal applications: Manures: Chalk at 2.9 t. Muriate of potash at 520 kg.  
Weedkillers: Trietazine at 1.1 kg with simazine at 0.16 kg in 220 l.  
Insecticides: Pirimicarb at 0.14 kg in 340 l on two occasions;  
permethrin at 0.15 kg in 340 l on two occasions.

Seed: Minden, sown at 280 kg.

Cultivations, etc.: - Muriate of potash applied: 16 Sept, 1982. Chalk applied: 30 Sept. Ploughed: 11 Oct. Spring-tine cultivated, seed sown: 8 Mar, 1983. Weedkillers applied: 17 Mar. Permethrin applied: 4 May, 20 May. Pirimicarb applied; 13 June, 13 July. Harvested by hand: 16 Aug. Previous crops: Potatoes 1981, s. barley 1982.

NOTE: Plant counts were made after establishment. The incidence of chocolate spot and rust were assessed from early July until maturity. Components of yield were measured at maturity.

83/R/BE/15

GRAIN TONNES/HECTARE

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

RUSTFUNG	MAN+MANC	PROPICON	MEAN
C S FUNG			
NONE	3.68	4.22	3.95
BENOMYL	3.86	4.39	4.13
MEAN	3.77	4.30	4.04
RFNGTIME	ONCE	TWICE	MEAN
C S FUNG			
NONE	4.31	3.59	3.95
BENOMYL	3.83	4.42	4.13
MEAN	4.07	4.00	4.04
RFNGTIME	ONCE	TWICE	MEAN
RUSTFUNG			
MAN+MANC	3.93	3.62	3.77
PROPICON	4.21	4.39	4.30
MEAN	4.07	4.00	4.04
RUSTFUNG	MAN+MANC	PROPICON	
RFNGTIME	ONCE	TWICE	ONCE
C S FUNG			TWICE
NONE	4.20	3.15	4.42
BENOMYL	3.65	4.08	4.01
EXTRA	NONE	BENOMYL	MEAN
	3.64	3.51	3.58

GRAND MEAN 3.88

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

TABLE	EXTRA	C S FUNG	RUSTFUNG	RFNGTIME
SED	0.253	0.179	0.179	0.179
TABLE	C S FUNG	C S FUNG	RUSTFUNG	C S FUNG
	RUSTFUNG	RFNGTIME	RFNGTIME	RUSTFUNG
				RFNGTIME
SED	0.253	0.253	0.253	0.358

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

STRATUM	DF	SE	CV%
BLOCK.WP	24	0.439	11.3

GRAIN MEAN DM% 89.3

PLOT AREA HARVESTED 0.00015