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# Yields of the Field Experiments 1987

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## 87/R/BE/1 Control of Chocolate Spot and Rust - W. Beans

### Rothamsted Research

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87/R/BE/1

WINTER BEANS

CONTROL OF CHOCOLATE SPOT AND RUST

Object: To compare maneb plus mancozeb with benomyl plus chlorothalonil for the control of chocolate spot (*Botrytis* spp.) and rust (*Uromyces viciae-fabae*) on w. beans sown at two densities - Great Harpenden I.

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

Design: 2 randomised blocks of 18 plots.

Whole plot dimensions: 6.0 x 10.0.

Treatments: All combinations of:-

1. SEEDRATE            Seeds sown per square metre:  
    12  
    36
2. CS FUNG            Fungicides applied to control chocolate spot until first rust pustules seen:  
  
    NONE                None  
    BEN+CHL            Benomyl at 0.50 kg plus chlorothalonil at 1.0 kg on 18 June, 1987  
    MAN+MANC          Maneb plus mancozeb each at 0.80 kg on 18 June
3. RUSTFUNG          Fungicides applied to control rust first applied as soon as rust pustules seen:  
  
    NONE                None  
    BEN+CHL            Benomyl at 0.50 kg plus chlorothalonil at 1.0 kg on 9 July, 5 Aug  
    MAN+MANC          Maneb plus mancozeb each at 0.80 kg on 9 July, 5 Aug

NOTES: (1) All spray treatments were applied in 200 l.  
(2) All benomyl plus chlorothalonil treatments had a wetting agent ('Agral' at 0.06 l) added.

Basal applications: Manures: Chalk at 5.0 t. Weedkillers: Paraquat at 0.80 kg ion in 500 l. Simazine at 1.2 kg with propyzamide at 0.85 kg in 500 l. Insecticide: Deltamethrin at 0.0079 kg in 200 l on two occasions. Desiccant: Diquat at 0.60 kg ion and a wetting agent ('Agral' at 0.3 l) in 300 l.

Seed: Bourdon, dressed with thiram and thiabendazole.

Cultivations, etc.: - Heavy spring-tine cultivated: 10 Sept, 1986. Chalk applied: 24 Sept. Paraquat applied: 6 Nov. Seed broadcast and ploughed in: 12 Nov. Simazine and propyzamide applied: 5 Jan, 1987. Insecticide applied: 22 Apr, 27 May. Desiccant with wetting agent applied: 21 Sept. Combine harvested: 25 Sept. Previous crops: W. wheat 1985 and 1986.

NOTE: Establishment counts were made in autumn, disease assessments were made in July and August and components of yield were measured at maturity.

87/R/BE/1

GRAIN TONNES/HECTARE

\*\*\*\*\* Tables of means \*\*\*\*\*

CS FUNG SEEDRATE	NONE	BEN+CHL	MAN+MANC	Mean
12	3.12	2.78	3.40	3.10
36	5.19	5.27	5.11	5.19
Mean	4.15	4.02	4.25	4.14

RUSTFUNG SEEDRATE	NONE	BEN+CHL	MAN+MANC	Mean
12	2.88	3.21	3.20	3.10
36	4.63	5.25	5.68	5.19
Mean	3.76	4.23	4.44	4.14

RUSTFUNG CS FUNG	NONE	BEN+CHL	MAN+MANC	Mean
NONE	3.76	4.25	4.45	4.15
BEN+CHL	3.68	3.90	4.48	4.02
MAN+MANC	3.83	4.54	4.39	4.25
Mean	3.76	4.23	4.44	4.14

SEEDRATE	CS FUNG	RUSTFUNG	NONE	BEN+CHL	MAN+MANC
12	NONE		2.89	3.17	3.29
	BEN+CHL		2.78	2.76	2.80
	MAN+MANC		2.96	3.72	3.51
36	NONE		4.62	5.33	5.61
	BEN+CHL		4.59	5.05	6.17
	MAN+MANC		4.69	5.37	5.26

\*\*\* Standard errors of differences of means \*\*\*

Table	SEEDRATE	CS FUNG	RUSTFUNG	SEEDRATE CS FUNG
s.e.d.	0.156	0.191	0.191	0.269

Table	SEEDRATE RUSTFUNG	CS FUNG RUSTFUNG	SEEDRATE CS FUNG RUSTFUNG
s.e.d.	0.269	0.330	0.467

\*\*\*\*\* Stratum standard errors and coefficients of variation \*\*\*\*\*

Stratum	d.f.	s.e.	cv%
BLOCK.WP	17	0.467	11.3

GRAIN MEAN DM% 78.0

PLOT AREA HARVESTED 0.00310