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Yields of the Field Experiments 1987

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Field Beans

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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.

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GRAIN TONNES/HECTARE

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

CS FUNG	NONE	BEN+CHL	MAN+MANC	Mean	
SEEDRATE					
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	NONE	BEN+CHL	MAN+MANC	Mean	
SEEDRATE					
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	NONE	BEN+CHL	MAN+MANC	Mean	
CS FUNG					
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

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GRAIN TONNES/HECTARE

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

ROWSPACE	12	48	Mean
VARIETY			
ALFRED	4.88	4.87	4.88
MINDEN	4.47	4.36	4.42
TICOL	3.79	3.68	3.73
TROY	3.95	3.71	3.83
Mean	4.28	4.16	4.22

PATHCONT	STANDARD	ENHANCED	Mean
VARIETY			
ALFRED	3.82	5.94	4.88
MINDEN	3.88	4.95	4.42
TICOL	2.90	4.57	3.73
TROY	3.47	4.20	3.83
Mean	3.52	4.91	4.22

PATHCONT	STANDARD	ENHANCED	Mean
ROWSPACE			
12	3.53	5.03	4.28
48	3.51	4.80	4.16
Mean	3.52	4.91	4.22

	ROWSPACE	12	48	
VARIETY	PATHCONT	STANDARD	ENHANCED	STANDARD ENHANCED
ALFRED		3.86	5.91	3.78 5.96
MINDEN		3.98	4.96	3.78 4.93
TICOL		2.87	4.72	2.94 4.42
TROY		3.39	4.51	3.54 3.88

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

Table	VARIETY	ROWSPACE	PATHCONT	VARIETY ROWSPACE
s.e.d.	0.123	0.087	0.087	0.174
Table	VARIETY PATHCONT	ROWSPACE PATHCONT	VARIETY ROWSPACE PATHCONT	
s.e.d.	0.174	0.123	0.246	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	30	0.302	7.2
GRAIN MEAN DM%	76.4		
PLOT AREA HARVESTED	0.00315		