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Field Beans

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88/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 - New Zealand.

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 with a wetting agent ('Enhance' at 0.03 l) on 20 June, 1988
 MAN+MANC Maneb plus mancozeb each at 0.80 kg on 20 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 with a wetting agent ('Agral' at 0.06 l) on 29 June
 MAN+MANC Maneb plus mancozeb each at 0.80 kg on 29 June

NOTE: All spray treatments were applied in 200 l.

Basal applications: Weedkillers: Paraquat at 0.60 kg ion in 200 l.
Propyzamide at 0.85 kg with simazine at 1.2 kg in 200 l.
Insecticide: Deltamethrin at 0.0079 kg in 200 l on two occasions.

Seed: Bourdon, dressed with thiram.

Cultivations, etc.:- Paraquat applied: 22 Oct, 1987. Seed broadcast and ploughed in: 23 Oct. Disced: 26 Oct. Remaining weedkillers applied: 5 Nov. Insecticide applied: 26 Apr, 1988, 17 May. Combine harvested: 3 Oct. Previous crops: W. wheat 1986 and 1987.

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

88/R/BE/1

GRAIN TONNES/HECTARE

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

CS FUNG SEEDRATE	NONE	BEN+CHL	MAN+MANC	Mean
12	5.43	6.68	5.89	6.00
36	5.70	6.14	6.21	6.01
Mean	5.56	6.41	6.05	6.01

RUSTFUNG SEEDRATE	NONE	BEN+CHL	MAN+MANC	Mean
12	5.82	5.72	6.47	6.00
36	5.77	6.20	6.06	6.01
Mean	5.80	5.96	6.27	6.01

RUSTFUNG CS FUNG	NONE	BEN+CHL	MAN+MANC	Mean
NONE	5.12	5.27	6.30	5.56
BEN+CHL	6.43	6.55	6.24	6.41
MAN+MANC	5.84	6.06	6.25	6.05
Mean	5.80	5.96	6.27	6.01

SEEDRATE	RUSTFUNG CS FUNG	NONE	BEN+CHL	MAN+MANC
12	NONE	4.89	4.89	6.51
	BEN+CHL	7.11	6.64	6.28
	MAN+MANC	5.45	5.63	6.61
36	NONE	5.34	5.65	6.10
	BEN+CHL	5.75	6.47	6.20
	MAN+MANC	6.23	6.48	5.90

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

SEEDRATE	CS FUNG	RUSTFUNG	SEEDRATE CS FUNG
0.160	0.196	0.196	0.277
SEEDRATE RUSTFUNG	CS FUNG RUSTFUNG	SEEDRATE CS FUNG RUSTFUNG	
0.277	0.339	0.480	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	17	0.480	8.0
GRAIN MEAN DM%	77.5		
PLOT AREA HARVESTED	0.00330		

88/R/BE/2

WINTER BEANS

VARIETIES

Object: To compare three varieties of winter beans - New Zealand.

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

Design: 6 randomised blocks of 3 plots.

Whole plot dimensions: 6.0 x 10.0.

Treatments:

VARIETY Varieties, sown at 24 seeds per square metre on 23 Oct, 1987:

BANNER
BOURDON
PUNCH

Basal applications: Weedkillers: Paraquat at 0.60 kg ion in 200 l. Propyzamide at 0.85 kg with simazine at 1.2 kg in 200 l. Fungicides: Benomyl at 0.50 kg with chlorothalonil at 1.0 kg and a wetting agent ('Enhance' at 0.03 l) in 200 l. Insecticide: Deltamethrin at 0.0079 kg in 200 l on two occasions.

Cultivations, etc.:- Paraquat applied: 22 Oct, 1987. Seed broadcast and ploughed in: 23 Oct. Disced: 26 Oct. Remaining weedkillers applied: 5 Nov. Insecticide applied: 26 Apr, 1988, 17 May. Fungicides with wetting agent applied: 20 June. Combine harvested: 3 Oct. Previous crops: W. wheat 1986 and 1987.

NOTE: Establishment counts were made in autumn and components of yield measured at maturity.

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GRAIN TONNES/HECTARE

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

VARIETY	BANNER	BOURDON	PUNCH	Mean
	5.24	5.47	5.98	5.57

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

VARIETY
0.182

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	10	0.315	5.7

GRAIN MEAN DM% 79.8

PLOT AREA HARVESTED 0.00330

88/R/BE/4

SPRING BEANS

VARIETIES, ROW SPACING AND PLANT HEALTH

Object: To compare four varieties of spring-sown field beans at two row spacings and two amounts of pest and disease control - Long Hoos I/II.

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

Design: 3 randomised blocks of 16 plots.

Whole plot dimensions: 6.0 x 10.0.

Treatments: All combinations of:-

1. **VARIETY** Varieties sown at 60 seeds per square metre:

ALFRED
MINDEN
TICOL
TROY
2. **ROW SPAC** Spacing between rows (cm):

12
48
3. **PATHCONT** Pest and pathogen control:

STANDARD None
ENHANCED Economic enhanced to include:
Deltamethrin at 0.0079 kg in 200 l on 26 Apr, 1988 and 17 May.
Pirimicarb at 0.14 kg in 200 l on 20 May.
Benomyl at 0.50 kg with chlorothalonil at 1.0 kg and a wetting agent ('Enhance' at 0.03 l) in 200 l on 20 June.
Maneb at 0.80 kg and mancozeb at 0.80 kg in 200 l on 29 June.

Basal applications: Weedkillers: Trietazine at 1.2 kg and simazine at 0.17 kg in 200 l.

Cultivations, etc.:- Ploughed: 1 Dec, 1987. Heavy spring-tine cultivated twice: 7 Mar, 1988. Rotary harrowed, seed sown: 9 Mar. Weedkillers applied: 17 Mar. Combine harvested: 20 Sept. Previous crops: W. wheat 1986 and 1987.

NOTE: Establishment counts were made. Disease assessments were made in July and August. At maturity, plant heights, lodging and components of yield were assessed.

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GRAIN TONNES/HECTARE

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

ROW SPAC	12	48	Mean
VARIETY			
ALFRED	6.17	5.99	6.08
MINDEN	5.84	5.56	5.70
TICOL	4.54	4.68	4.61
TROY	4.86	5.28	5.07
Mean	5.35	5.38	5.36

PATHCONT	STANDARD	ENHANCED	Mean
VARIETY			
ALFRED	4.90	7.26	6.08
MINDEN	5.30	6.10	5.70
TICOL	3.97	5.25	4.61
TROY	4.33	5.81	5.07
Mean	4.62	6.10	5.36

PATHCONT	STANDARD	ENHANCED	Mean
ROW SPAC			
12	4.70	6.00	5.35
48	4.54	6.21	5.38
Mean	4.62	6.10	5.36

	ROW SPAC	12	48	
VARIETY PATHCONT				
	STANDARD	ENHANCED	STANDARD	ENHANCED
ALFRED	5.16	7.18	4.64	7.34
MINDEN	5.45	6.22	5.14	5.98
TICOL	3.88	5.21	4.07	5.28
TROY	4.33	5.39	4.33	6.22

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

VARIETY	ROW SPAC	PATHCONT	VARIETY
0.171	0.121	0.121	ROW SPAC
			0.242

VARIETY	ROW SPAC	VARIETY
PATHCONT	PATHCONT	ROW SPAC
0.242	0.171	PATHCONT
		0.342

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	30	0.419	7.8
GRAIN MEAN DM%	84.3		
PLOT AREA HARVESTED	ROW SPAC 12	0.00330	
	ROW SPAC 48	0.00312	