

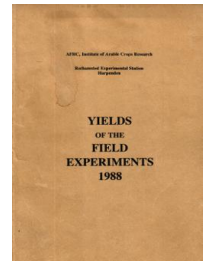
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# Yields of the Field Experiments 1988

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## Field Beans

### Rothamsted Research

Rothamsted Research (1989) *Field Beans* ; Yields Of The Field Experiments 1988, pp 198 - 203 -  
DOI: <https://doi.org/10.23637/ERADOC-1-43>

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.

88/R/BE/2

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%
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BLOCK.WP	10	0.315	5.7
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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.

88/R/BE/4

GRAIN TONNES/HECTARE

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

ROW SPAC	12	48	Mean
<b>VARIETY</b>			
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
<b>VARIETY</b>			
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
<b>ROW SPAC</b>			
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		48
<b>VARIETY</b>	<b>PATHCONT</b>	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
			ROW SPAC
0.171	0.121	0.121	0.242

VARIETY	ROW SPAC	VARIETY
PATHCONT	PATHCONT	ROW SPAC
		PATHCONT
0.242	0.171	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	