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# Yields of the Field Experiments 1983

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## 83/R/BE/9 Effects of Pests and Pathogens - S. Beans

### Rothamsted Research

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83/R/BE/9

SPRING BEANS

EFFECTS OF PESTS AND PATHOGENS

Object: To assess the benefits from three amounts of pest and disease control on irrigated and unirrigated s. beans - W. Barnfield II.

Sponsors: J. McEwen, R. Bardner, A.J. Cockbain, D.H. Lapwood, R.M. Webb, T.D. Williams, D.P. Yeoman.

Design: 4 randomised blocks of 2 plots split into 3.

Whole plot dimensions: 4.27 x 13.7.

Treatments: All combinations of:-

Whole plots

1. IRRIGATN	Irrigation:
NONE	None
FULL	Full (total 138 mm)

Sub plots

2. PATHCONT	Pest and pathogen control:
STANDARD	Pirimicarb at 0.14 kg on 13 June, 1983
ENHANCED	Phorate at 2.2 kg, combine drilled
	Pirimicarb at 0.14 kg on 13 June
	Maneb at 0.8 kg with mancozeb at 0.8 kg in 450 l on 18 July
FULL	Aldicarb at 10 kg on 9 Mar
	Phorate at 2.2 kg combine drilled
	Fosetyl-A1 at 2.0 kg on 5 May
	Pirimicarb at 0.14 kg on 13 June
	Benomyl at 0.50 kg on 5 July and 4 Aug
	Maneb at 0.8 kg with mancozeb at 0.8 kg in 450 l on 18 July, 26 July, 4 Aug

NOTES: (1) Irrigation was applied as follows (mm water):

1 July	20
6 July	25
15 July	18
27 July	25
8 Aug	25
14 Aug	25
Total	138 mm

(2) Treatment sprays were applied in 340 l except where stated.

Basal applications: Manures: Chalk at 5.0 t. Weedkillers: Glyphosate at 1.4 kg in 250 l. Trietazine and simazine (as 'Aventox' at 2.4 l) in 250 l.

Seed: Minden, sown at 230 kg.

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Cultivations, etc.:- Chalk applied: 16 Sept, 1982. Glyphosate applied: 19 Oct. Ploughed: 25 Nov. Spring-tine cultivated twice: 8 Mar, 1983. Seedbed treatments applied, rotary harrowed, seed sown: 9 Mar. 'Aventox' applied: 12 Mar. Combine harvested non-irrigated plots: 12 Aug. Combine harvested irrigated plots: 22 Aug. Previous crops: S. barley 1981, w. wheat 1982.

NOTE: Plant counts were made after establishment and components of yield were measured at maturity. Total above ground dry matter and N content were measured in August. Migratory nematodes, root and foliar fungi, aphids, weevils and viruses were counted at intervals during the season. N content of grain was measured.

GRAIN TONNES/HECTARE

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

PATHCONT IRRIGATN	STANDARD	ENHANCED	FULL	MEAN
NONE	3.21	3.51	3.90	3.54
FULL	4.83	5.14	5.42	5.13
MEAN	4.02	4.33	4.66	4.34

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

TABLE	PATHCONT	IRRIGATN* PATHCONT
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SED	0.072	0.102

\* WITHIN THE SAME LEVEL OF IRRIGATN ONLY

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.144	3.3
GRAIN MEAN DM%	85.0		
SUB PLOT AREA HARVESTED	0.00293		