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81/R/BE/6 Effects of Pests and Pathogens - S. Beans

Rothamsted Research

Rothamsted Research (1982) *81/R/BE/6 Effects of Pests and Pathogens - S. Beans ; Yields Of The Field Experiments 1981*, pp 302 - 303 - DOI: <https://doi.org/10.23637/ERADOC-1-35>

81/R/BE/6

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 - Fosters Corner.

Sponsors: J. McEwen, R. Bardner, A.J. Cockbain, J.M. Day, W. Day, K.E. Fletcher, G.A. Salt, R.M. Webb, J.F. Witty, 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 49 mm)

Sub plots

2. PATHCONT	Pest and pathogen control (in addition to basal):
STANDARD	None
ENHANCED	Phorate at 2.24 kg, combine drilled Benomyl at 0.56 kg on 11 Aug
FULL	Aldicarb at 10 kg on 19 Feb, 1981 Fosetyl-Al at 2.24 kg on 23 Apr Benomyl at 0.56 kg on 28 July Benomyl at 0.56 kg on 11 Aug

NOTES: (1) Treatment sprays were applied in 340 l.
(2) Irrigation was applied to reduce a deficit of 50 mm to 25 mm before pod set, and from 80 mm to 55 mm after pod set. (mm water):

3 July	12
4 July	12
10 July	<u>25</u>
Total	49

Basal applications: Manures: Chalk at 7.5 t. Weedkiller: Simazine at 1.2 kg in 250 l. Insecticide: Pirimicarb at 0.14 kg in 250 l applied twice.

Seed: Minden, sown at 240 kg (500,000 seeds per hectare).

Cultivations, etc.: Chalk applied: 3 Dec, 1980. Ploughed: 10 Dec. Spring-tine cultivated three times: 18 Feb, 1981, 19 Feb. Rotary harrowed, seed sown: 20 Feb. Weedkiller applied: 8 Apr. Basal insecticide applied: 3 June, 28 July. Combine harvested: 8 Sept. Previous crops: W. wheat 1979, s. barley 1980.

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NOTE: Plant counts were made after establishment and components of yield measured before harvest. 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	3.93	4.50	4.65	4.36
FULL	4.66	5.00	5.02	4.89
MEAN	4.29	4.75	4.84	4.63

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

TABLE	PATHCONT	IRRIGATN* PATHCONT
SED	0.074	0.104

* WITHIN THE SAME LEVEL OF IRRIGATN ONLY

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.147	3.2

GRAIN MEAN DM% 86.8

SUB PLOT AREA HARVESTED 0.00293