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71/R/BE/1 Chemical Control of Soil-borne Pathogens - Beans

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71/R/BE/1

SPRING BEANS

CHEMICAL CONTROL OF SOIL-BORNE PATHOGENS

Object: To study the effects of a range of chemicals on wilting and yield of beans grown continuously for five years - Barnfield Section I Plot 3 (unmanured).

Design: 4 blocks of 6 plots.

Whole plot dimensions: 3.73 x 2.29. Area harvested: 0.00039.

Treatments: Chemicals applied as dusts, except formalin:-

None	(O)
Fungicide, 70% 'Dexon' at 78.5 kg a.i.	(F)
Insecticide, 25% gamma BHC at 4.5 kg a.i.	(I)
Nematicide, 10% aldicarb ('Temik') at 11.2 kg a.i.	(N)
Biocide, formalin at 3000 l of a 38% solution of formaldehyde in 54400 l	(B)
Aldicarb and formalin together at the rates shown above	(NB)

The plots which received dusts were rotary cultivated immediately after the application.

Basal applications: Manures-none. Weedkillers: Paraquat at 0.84 kg ion in 225 l. Simazine at 1.12 kg in 225 l. Insecticide: Demeton-s-methyl at 245 g in 438 l.

Cultivations, etc.: Paraquat applied: 11 Sept, 1970. Ploughed: 19 Oct. Formalin applied: 25 Nov. Chemical dusts applied and rotary cultivated in: 26 Feb, 1971. Seed drilled at 224 kg: 4 Mar. Simazine applied: 10 Mar. Insecticide applied: 1 July. Harvested by hand: 25 Aug. Variety: Maris Bead.

NOTE: Wilted and virus infected plants were counted during the season. Crop samples were taken for root disease assessment. Counts were made of stem eelworm (*Ditylenchus dipsaci*).

Standard error per plot.

Grain, tonnes/hectare: 0.219 or 13.0% (15 d.f.)

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SUMMARY OF RESULTS

GRAIN: TONNES/HECTARE

O	F	I	N	B	NB	Mean
(±0.110)						
1.07	1.96	1.51	2.43	1.23	1.89	1.68

Mean D.M. %: 78.2