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74/R/CS/82 Chemical Control of Soil-borne Pathogens - Beans

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74/R/CS/82

CHEMICAL CONTROL OF SOIL-BORNE PATHOGENS

Object: To study the residual effects of a range of chemicals, on pathogens and yield of beans grown continuously for eight years - Barnfield Section 1 Plot 3.

Sponsors: D. Hornby, G.A. Salt.

The fourth year, spring beans.

For previous years see 71/R/BE/1(t), 72/R/CS/82(t) and 73/R/CS/82.

Design: 4 blocks of 6 plots.

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

Treatments (applied cumulatively 1971-73):	CHEM RES
None	None
Dexon, fungicide, at 78.5 kg	Dexon
BHC, insecticide, at 4.48 kg	BHC
Aldicarb, nematicide, at 11.2 kg	Aldicarb
Formalin, biocide, at 3000 l. of a 38% solution of formaldehyde	Formalin
Dexon, aldicarb and formalin together at the above rates	Dx/Al/Fo

NOTE: Treatment Dx/Al/Fo received only aldicarb and formalin treatments in 1971.

Basal applications: Manures: PKMg as Plot 4 on Barnfield:- Triple superphosphate at 170 kg, sulphate of potash at 540 kg and Kieserite at 540 kg. Weedkiller: Paraquat at 0.56 kg ion in 220 l. Insecticide: Demeton-s-methyl at 0.25 kg in 220 l.

Seed: Maris Bead, sown at 220 kg.

Cultivations, etc.: Paraquat applied: 12 Sept, 1973. KMg applied: 12 Dec. P applied: 17 Dec. Ploughed: 20 Dec. Power harrowed: 2 Apr, 1974. Rotary harrowed: 4 Apr. Seed sown and spring-tine cultivated: 5 Apr. Insecticide applied: 13 June. Harvested by hand: 19 Sept.

74/R/CS/82

NOTE: Development of wilt was recorded during July and August. Crop samples were taken for root disease assessment. Number of stems and crop height were recorded.

Standard error per plot.

Grain, tonnes/hectare: 0.492 or 16.2% (15 d.f.)

TABLES OF MEANS

GRAIN: TONNES/HECTARE

CHEM RES						Mean
None	Dexon	BHC	Aldicarb	Formalin	Dx/Al/Fo	
2.54	3.20	2.92	3.40	2.54	3.59	3.03

STANDARD ERROR OF DIFFERENCES

CHEM RES

0.348

Mean D.M.% 81.4