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72/R/CS/82 Chemical Control of Soil-borne Pathogens - S. Beans

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72/R/CS/82

CHEMICAL CONTROL OF SOIL-BORNE PATHOGENS

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

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

The second year, spring beans.

For previous year see 71/R/BE/1(t).

Design: 4 blocks of 6 plots.

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

Treatments (applied cumulatively to treatments in 1971) (T):-

None (O)

Fungicide, 70% dexion (powder) at 78.5 kg a.i. (F)

Insecticide, BHC (emulsion) at 4.48 kg a.i. (I)

Nematicide, 10% aldicarb (granules) at 11.2 kg a.i. (N)

Biocide, formalin at 3000 l of a 38% solution of formaldehyde in 64000 l (B)

Dexion, aldicarb and formalin together at rates shown above (NBF)

Treatments F, I, N, B and NBF were rotary cultivated in, immediately after the final application. Treatment NBF received only treatments N and B in 1971.

Basal applications: Manures: PK Na Mg rates as on Barnfield Strip 4, Weedkillers: Paraquat at 0.56 kg ion in 220 l. Insecticide: Phorate at 1.12 kg applied as granules.

Seed: Maris Bead sown at 220 kg.

Cultivations, etc.: Paraquat applied: 10 Sept, 1971. Ploughed: 9 Dec. Formalin applied: 15 Dec. Remaining chemicals applied and rotary cultivated in: 17 Mar, 1972. Seed drilled: 22 Mar. Insecticide applied: 17 June. Harvested by hand: 20 Sept.

NOTE: Development of wilt was recorded during July and August. Crop samples were taken for root disease assessment. Counts were made of stem eelworm.

Standard error per plot.

Grain, tonnes/hectare: 0.429 or 12.0% (15 d.f.)

72/R/CS/82

TABLES OF MEANS

GRAIN: TONNES/HECTARE

T

O	F	I	N	B	NBF	Mean
2.98	3.31	3.51	3.84	3.46	4.37	3.58

STANDARD ERROR OF DIFFERENCES

T 0.303

Mean D.M. %: 83.2