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73/RCS/116 - Effects of Stem Eelworm - Beans

Rothamsted Research

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73/R/CS/116

EFFECTS OF STEM EELWORM

Object: To study the effects of applying field bean straw infested with two races of stem eelworm *Ditylenchus dipsaci* on the yield and subsequent infestation of field beans - Highfield O and E III.

Sponsor: D.J. Hooper.

The first year, spring beans.

Design: 3 randomised blocks of 6 plots.

Whole plot dimension: 4.27 x 9.14. Area harvested: 0.00293.

Treatments: All combinations of:-

- | | |
|--|---------|
| 1. Bean straw infested with stem eelworm, <i>Ditylenchus dipsaci</i> , worked into soil, autumn 1972:- | EELWORM |
| Oat race | Oat |
| Giant race | Giant |
| 2. Rate of application of straw (tonnes) to give populations of eelworms:- | RATE |
| None | 0 |
| Single, 3.1 | Single |
| Double, 6.2 | Double |

Basal applications: Manures: (0:14:28) at 900 kg. Weedkiller: Simazine at 1.1 kg in 220 l. Insecticide: Phorate at 1.2 kg as granules on two occasions.

Seed: Minor sown at 220 kg.

Cultivations, etc.:- Ploughed: 16 Sept, 1972. PK applied: 27 Oct. Straw applied and all plots rotary cultivated: 3 Nov. Seed sown: 12 Mar, 1973. Weedkiller applied: 13 Mar. Insecticide applied: 11 June, repeated 19 June. Combine harvested: 4 Sept. Previous crops: Barley 1971 and 1972.

NOTE: Counts of stems showing symptoms of attack by stem eelworm made in July. Samples of seed were taken at maturity for the assessment of seed infestation.

Standard error per plot.

Grain, tonnes/hectare: 0.167 or 7.3% (11 d.f.)

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TABLES OF MEANS

GRAIN: TONNES/HECTARE

	RATE			Mean
	0	Single	Double	
EELWORM				
Cat		3.06	2.17	2.62
Giant		1.43	1.24	1.34
Mean	2.92	2.25	1.71	2.29*

STANDARD ERRORS OF DIFFERENCES

EELWORM	RATE	EELWORM RATE
0.097	0.097	0.137

Mean D.M. % 82.2

* Grand mean