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73/R/CS/113 - Effects of Collembola on Seedlings - Sugar Beet

Rothamsted Research

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73/R/CS/113

EFFECTS OF COLLEMBOLA ON SEEDLINGS

Object: To study the effects of insecticides on seedling damage by Collembola and yield of sugar beet - West Barnfield I.

Sponsor: C.A. Edwards.

The second year, sugar beet.

For previous year see 72/R/SB/1(t).

Design: 4 randomised blocks of 5 plots.

Whole plot dimensions: 6.40 x 4.57. Area harvested: 0.00146.

Treatments: Insecticides (kg), applied cumulatively to treatments in 1972:-

	INSECTIDE
None	None
Chlorfenvinphos, 4.5	Chlorfen
Diazinon, 4.5	Diazinon
DDT, 6.7	DDT
Parathion, 4.5	Parathio

Treatments applied to the soil and all plots spring-tine cultivated: 7 Feb, 1973.

Basal applications: Manures: (20:15:15) at 750 kg.

Seed: Amono, pelleted, sown at 13 kg.

Cultivations, etc.:- Ploughed: 27 Nov, 1972. NPK applied and power harrowed: 21 Mar, 1973. Seed sown: 23 Mar. Crop singled: 31 May. Tractor hoed: 6 June. Side hoed: 4 July. Lifted: 19 Nov.

NOTES: (1) Soil cores were taken before applying treatments and monthly through the growing season for counts of soil fauna.
(2) Plants were counted three times during the season.

Standard errors per plot.

Roots (washed): tonnes/hectare: 5.91 or 18.0% (12 d.f.)

Total sugar: tonnes/hectare: 0.944 or 17.5% (12 d.f.)

73/R/CS/113

TABLES OF MEANS

SUGAR BEET

INSCTCDE

None	Chlorfen	Diazinon	DDT	Parathio	Mean
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ROOTS (WASHED): TONNES/HECTARE

35.6	32.2	29.9	32.9	33.7	32.9
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STANDARD ERROR OF DIFFERENCES

INSCTCDE

4.18

SUGAR %

16.1	16.5	16.4	16.7	16.3	16.4
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TOTAL SUGAR: TONNES/HECTARE

5.75	5.33	4.91	5.51	5.49	5.40
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STANDARD ERROR OF DIFFERENCES

INSCTCDE

0.668