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73/R/M/4 - Maize & Sweet Corm. Control of Frit Fly - Mixed Crops

Rothamsted Research

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73/R/M/4

MAIZE AND SWEET CORN

CONTROL OF FRIT FLY

Object: To compare two insecticides and times and methods of application on incidence of frit fly (*Oscinella frit*) and yield of maize and sweet corn - Long Hoos IV 6.

Sponsors: J.C. Wilson, R. Bardner, K.E. Fletcher.

Design: 3 randomised blocks of 4 plots split into 4.

Whole plot dimensions: 3.66 x 24.7. Sub plot area harvested: 0.00134.

Treatments: All combinations of:-

Whole plots: 1. Crop:		CROP
	Grain maize, Pioneer 131	Maize
	Sweet corn, Early King	Sweetcorn
2. Phorate (1.68 kg) as granules:		PHORATE
	None	None
	Seedbed	Seedbed
Sub plots: 3. Dimethoate (0.67 kg) foliar spray:		DIMETH
	None	None
	Early, at 2-leaf stage	Early
	Late, when frit fly damage apparent	Late
	Combined early and late sprays	Earlylat

Phorate was applied as granules drilled with the seed. Dimethoate was applied as a spray in 290 l.

Basal applications: Manures: Ground chalk at 7.5 tonnes. (25:10:10) at 690 kg. Weedkiller: Atrazine at 1.7 kg in 290 l.

Seed: Precision drilled at 11,000 seeds per hectare.

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Cultivations, etc.:— Chalk applied: 25 Sept, 1972. Ploughed: 26 Sept.
NPK applied: 2 May, 1973. Power harrowed: 3 May. Seed sown: 11 May.
Dimethoate applied: early 14 June, late 3 July. Sweet corn harvested:
31 Aug. Maize harvested: 9 Nov. Previous crops: Barley 1971, winter
wheat 1972.

- NOTES: (1) Observations on incidence of frit fly larvae (*Oscinella frit*)
were made in spring and on adult populations throughout the
season.
(2) Maize. Yields of two plots PHORATE-Seedbed DIMETH-Late and
Earlylat were not taken because of the failure of the seed
drill. Estimated values were used in the analysis.

ERRATUM: The similar experiment reported in 1972 (72/R/M/5) showed the
rate of dimethoate as 1.68 kg. This should have been 0.67 kg.

Standard errors per sub plot.

Maize: Grain, tonnes/hectare:	0.380 or 5.8% (10 d.f.)
Sweet corn: Total saleable cobs, tonnes/hectare:	0.620 or 9.1% (12 d.f.)
No. of saleable cobs, thousands/hectare:	3.82 or 10.0% (12 d.f.)

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TABLES OF MEANS

CROP

Maize

GRAIN: TONNES/HECTARE

DIMETH

	None	Early	Late	Earlylat	Mean
PHORATE					
None	6.48	6.61	6.72	6.45	6.57
Seedbed	6.64	6.71	6.29	6.97	6.65
Mean	6.56	6.66	6.50	6.71	6.61

STANDARD ERRORS OF DIFFERENCES

DIMETH	PHORATE* DIMETH
0.220	0.311

* Within the same level of PHORATE only

Mean D.M. % 61.9

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CROP

Sweetcorn

TOTAL SALEABLE COBS: TONNES/HECTARE

DIMETH

	None	Early	Late	Earlylat	Mean
PHORATE					
None	3.70	5.66	4.01	5.28	4.66
Seedbed	8.60	8.71	9.47	8.95	8.93
Mean	6.15	7.18	6.74	7.11	6.80

STANDARD ERRORS OF DIFFERENCES

DIMETH PHORATE*
DIMETH

0.358 0.506

* Within the same level of PHORATE only

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CROP

Sweetcorn

NUMBER OF SALEABLE COBS: THOUSANDS/HECTARE

DIMETH

	None	Early	Late	Earlylat	Mean
PHORATE					
None	21.7	33.4	23.7	31.4	27.5
Seedbed	47.6	46.6	51.3	48.8	48.6
Mean	34.6	40.0	37.5	40.1	38.1

STANDARD ERRORS OF DIFFERENCES

DIMETH	PHORATE*
	DIMETH
2.21	3.12

* Within the same level of PHORATE Only