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Yields of the Field Experiments 1973

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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