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72/R/M/5 Maize and Sweet Corn Control of Fruit Fly

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72/R/M/5

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.

Sponsors: J.C. Wilson, J.W. Stephenson.

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

Whole plot dimensions: 3.05 x 6.10. Sub plot area harvested: 0.000372.

Treatments: All combinations of:-

Whole plots: 1. Crops: Grain maize, Sweet corn.

2. Phorate: 0, 1.68 kg.

Sub plots: 3. Dimethoate spray (DS): None (0), 1.68 kg at 2-leaf stage (1), 1.68 kg at 2-leaf stage, repeated three weeks later (2), at 1.68 kg at first sign of frit fly attack (3).

Phorate was applied as granules drilled with the seed. Dimethoate was applied as a spray in 340 l.

NOTE: Frit fly did not attack and treatment DS3 was not applied and therefore equals DS0.

Seed: Grain maize: Pioneer 131 sown at 11,000 seeds per hectare.

Sweet corn: Early King sown at 11,000 seeds per hectare.

Basal applications: 1600 kg (0:14:28). 130 kg N as 'Nitro-Chalk'.

Atrazine at 1.7 kg a.i. in 340 l.

Cultivations, etc.: PK applied: 30 Sept, 1971. Ploughed: 6 Oct. N applied, power harrowed: 2 May, 1972. Seed precision drilled: 3 May. Weedkiller applied: 12 May. Dimethoate applied: 12 June, 7 July. Harvested sweet corn at sweet corn stage: 13 Oct. Harvested grain maize at sweet corn stage: 30 Oct. Harvested sweet corn and grain maize at grain stage: 23 Nov.

NOTE: Observations were made on incidence of frit fly (*Oscinella frit*) throughout the season.

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Standard errors per plot.

Grain, tonnes/hectare: Whole plot: 0.273 or 35.9% (6 d.f.)
Sub plot: 0.207 or 27.2% (28 d.f.)

Total saleable cobs, tonnes/hectare:
Whole plot: 1.251 or 22.0% (6 d.f.)
Sub plot: 1.790 or 31.5% (28 d.f.)

No. of saleable cobs: thousands/hectare:
Whole plot: 5.76 or 21.3% (6 d.f.)
Sub plot: 8.74 or 32.3% (28 d.f.)

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TABLES OF MEANS

GRAIN: TONNES/HECTARE

CROP	PHDRATE: KG/HA		DIMETHOATE SPRAY (DS)			Mean
	0	1.68	0*	1	2	
Grain Maize	0.97	0.76	0.77	0.98	0.91	0.86
Sweet Corn	0.64	0.68	0.67	0.59	0.73	0.66
	PHDRATE: KG/HA					
	0		0.78	0.81	0.84	0.80
	1.68		0.66	0.76	0.81	0.72
Mean			0.72	0.78	0.82	0.76

CROP	PHDRATE: KG/HA			DIMETHOATE SPRAY (DS)		
	0	1	2	0	1	2
Grain Maize	0.93	1.13	0.89	0.62	0.84	0.94
Sweet Corn	0.64	0.49	0.79	0.69	0.68	0.67

Mean D.M. %: 73.1

* Duplicated treatment

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STANDARD ERRORS OF DIFFERENCES

GRAIN: TONNES/HECTARE

CROP	PHORATE	DS	CROP PHORATE	CROP DS	PHORATE DS	CROP PHORATE DS
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0.158	0.158		0.223			
1 and 2		0.085		0.189	0.189	0.267
0 v 1 or 2		0.073		0.179	0.179	0.253
0				0.169	0.169	0.239

Unless same level of CROP

1 and 2				0.120		
0 v 1 or 2				0.104		

Unless same level of PHORATE

1 and 2					0.120	
0 v 1 or 2					0.104	

Unless same level of CROP and PHORATE

1 and 2						0.169
0 v 1 or 2						0.147

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TOTAL SALEABLE COBS: TONNES/HECTARE

PHORATE: KG/HA DIMETHOATE SPRAY (DS)

	0	1.68	0*	1	2	Mean
CROP						
Grain Maize	6.42	6.98	6.88	6.89	6.13	6.70
Sweet Corn	4.61	4.75	4.17	4.54	5.84	4.68
	PHORATE: KG/HA					
	0		5.77	5.45	5.05	5.51
	1.68		5.28	5.98	6.92	5.87
Mean			5.53	5.72	5.99	5.69

	PHORATE: KG/HA		DIMETHOATE SPRAY (DS)			
	0	1	2	0	1	2
CROP						
Grain Maize	7.00	6.61	5.05	6.76	7.18	7.21
Sweet Corn	4.54	4.30	5.05	3.80	4.78	6.63

* Duplicated treatment

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STANDARD ERRORS OF DIFFERENCES

TOTAL SALEABLE COBS: TONNES/HECTARE

CROP	PHORATE	DS	CROP PHORATE	CROP DS	PHORATE DS	CROP PHORATE DS
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0.722	0.722		1.021			
1 and 2		0.731		1.150	1.150	1.627
0 v 1 or 2		0.633		1.028	1.028	1.453
0				0.888	0.888	1.256

Unless the same level of CROP

1 and 2			1.034			
0 v 1 or 2			0.895			

Unless same level of PHORATE

1 and 2				1.034		
0 v 1 or 2				0.895		

Unless same level of CROP and PHORATE

1 and 2						1.462
0 v 1 or 2						1.266

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NO. OF SALEABLE COBS: THOUS/HECTARE

PHORATE: KG/HA DIMETHOATE SPRAY (DS)

CROP	PHORATE: KG/HA		DIMETHOATE SPRAY (DS)			Mean
	0	1.68	0*	1	2	
Grain Maize	31.4	36.3	35.0	34.1	31.4	33.9
Sweet Corn	19.7	20.6	17.9	19.7	25.1	20.2
	PHORATE: KG/HA					
	0		26.5	25.1	24.2	25.6
	1.68		26.5	28.7	32.3	28.5
Mean			26.5	26.9	28.3	27.0

CROP	PHORATE: KG/HA			DIMETHOATE SPRAY (DS)		
	0	1	2	0	1	2
Grain Maize	34.1	31.4	26.0	35.9	36.8	36.8
Sweet Corn	18.8	18.8	22.4	17.0	20.6	27.8

* Duplicated treatment

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STANDARD ERRORS OF DIFFERENCES

NO. OF SALEABLE COBS: THOUS/HECTARE

CROP	PHORATE	DS	CROP PHORATE	CROP DS	PHORATE DS	CROP PHORATE DS
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3.33	3.33		4.70			
1 and 2		3.57		5.49	5.49	7.76
0 v 1 or 2		3.09		4.88	4.88	6.90
0				4.17	4.17	5.90

Unless the same level of CROP

1 and 2			5.04			
0 v 1 or 2			4.37			

Unless the same level of PHORATE

1 and 2				5.04		
0 v 1 or 2				4.37		

Unless the same level of CROP and PHORATE

1 and 2						7.13
0 v 1 or 2						6.18