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FIELD EVALUATION OF INSECTICIDES AND BOTANICALS AGAINST THE SPOTTED POD BORER, *Maruca Testulalis* (GEYER) ON LABLAB

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ABSTRACT

Field experiment conducted to evaluate the efficacy of insecticides against the larvae of *M. testulalis* on lablab showed that among the insecticides tested spray of endosulfan at 0.518 kg a.i/ha was superior to all other treatments in reducing the larval population. It had resulted in 79 per cent reduction in population with three days after treatment and 88.71 per cent reduction in five days after treatment because of the good contact action.

KEY WORDS : Spotted pod borer, Lablab, Control, Insecticides, Botanicals.

The spotted pod borer, *Maruca testulalis* (Geyer) is an important pest of grain legumes and gains its importance by establishing itself on the crop from vegetative to reproductive stage and cause substantial damage to flowers and pod setting.

MATERIALS AND METHODS

A field trial was conducted to evaluate the efficacy of four insecticides and two botanicals in the control of *M. testulalis* on lablab (var.Co 9) at Iruttuppalam Village, Thondamuthur Block, Coimbatore district.

The treatments were replicated thrice. For each replication the plot size was 9 m^2. Sprays were used at 740 l/ha and dusts were applied at 20 kg/ha. For assessing the efficacy of insecticides, in an area of 9 m^2 in each replication, five plants were selected at random and the larval population was assessed on these five tagged plants. Initial population count of *M. testulalis* was taken one hour before the treatment. Subsequently the larval population was recorded on 1, 3, 5, 7 and 10 days after treatment. The population reduction in each period of observation was worked out with reference to population before treatment. The data were analysed by factorial randomized block design.

RESULTS AND DISCUSSION

All the treatments tried were superior to untreated control at all the periods of observation (Table 1). Among the insecticides tested, spraying of endosulfan at 0.518 kg a.i./ha was found to be superior to all other treatments in reducing the larval population. Monocrotophos (0.296 kg a.i./ha) was next in order of merit. Neem seed kernel extract, HCH 10 D and neem oil were on a par in reducing the larval population but they were superior to carbaryl 5 D.

Considering larval population reduction at each period after treatment, in all the insecticides an increasing trend was noticed as the days progressed. At all the periods observed, endosulfan recorded significantly the highest population reduction over the other treatments. Next in order was monocrotophos. At one day after treatment neem seed kernel extract was next in order to endosulfan followed by monocrotophos and these two were on a par. At all the periods carbaryl 5D recorded the lowest larval population reduction.

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Table 1. Efficacy of insecticides for the control of *M. testulalis* on lablab.

Treatments/ Insecticides	% Population reduction after treatment (days)					Mean
	1	3	5	7	10	
Endosulfan 0.07%	45.11 (48.33)	79.23 (63.03)	88.71 (70.39)	88.71 (70.39)	88.71 (70.39)	78.09 (64.50)
Monocrotophos 0.04%	39.03 (36.68)	63.67 (53.07)	81.12 (65.39)	81.12 (65.39)	81.12 (65.39)	69.21 (57.18)
Neem oil 5%	25.06 (30.00)	42.16 (40.48)	55.23 (48.02)	64.65 (50.29)	68.80 (56.14)	51.18 (44.98)
Neem seed kernel extract 5%	38.35 (38.01)	52.94 (46.69)	61.27 (51.69)	61.27 (51.69)	61.27 (51.69)	55.02 (47.95)
HCH 10 D	25.54 (30.31)	45.75 (42.51)	63.76 (53.00)	66.14 (54.60)	66.14 (54.60)	53.46 (47.00)
Carbaryl 5 D	14.11 (21.94)	23.84 (29.14)	25.69 (30.30)	25.69 (30.30)	25.69 (30.30)	23.00 (28.39)
Control	0.00 (0.81)	0.00 (0.81)	0.00 (0.81)	0.00 (0.81)	0.00 (0.81)	0.00 (0.81)
Mean	26.74 (29.44)	43.94 (39.27)	53.68 (45.65)	55.68 (46.21)	55.96 (47.04)	

Comparison of significant effects	Level of significance	CD (P = 0.05)
Between treatments	0.01	3.876
Between periods	0.01	4.546
Treatments vs periods	0.01	8.670

Figures in parentheses represent arcsin percentage values

In endosulfan, monocrotophos, neem seed kernel extract and carbaryl 5 D the maximum mortality for the individual treatment was reached 5 days after treatment, and this was maintained at the same level 7 and 10 days after treatment also. In neem oil maximum mortality was noticed only 10 days after treatment, while it was seen 7 days after treatment in HCH 10 D which level was maintained 10 days after treatment also. The interaction between treatments and periods was also found to be significant. Srivastava (1980) reported that the application of 0.07 per cent endosulfan at 1000 l/ha was effective in controlling the pod borers in redgram in Uttar Pradesh.

Spraying of monocrotophos at 0.296 kg ai/ha was next in order in reducing the larval population up to 63.67 and 81 per cent respectively three days and five days after treatment. Translocation of monocrotophos to plant parts was more pronounced only three days after treatment (CIBA, 1969), and this could be the reason for increased reduction in population five days after treatment.

Among the dust formulations HCH 10 D was superior to carbaryl 5 D. Effectiveness of HCH dust have been reported by Nyiira (1971) and Singh and Taylor (1978).

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VARIETAL REACTION OF SORGHUM LINES TO AFLATOXIN PRODUCTION

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ABSTRACT

Thirty two sorghum cultivars were tested against Aflatoxin production. Among them three sorghum cultivars *viz.*,M 35-I, N - 13 and 648 A x Y - 75 were found resistant to aflatoxin production (aflatoxin 0.05 ppm) and twelve entries were moderately resistant to aflatoxin production (aflatoxin between 0.05 to 0.25 ppm).

KEY WORDS : Sorghum, Aflatoxin, Varietal reaction

Sorghum is one of the important cereal crops which is found to be contaminated with the fungus *Aspergillus flavus* Link ex Fries, producing aflatoxins as a metabolite (hepatotoxic). The potent effects of this toxin has created worldwide interest in its study and control. Screening of resistant varieties is the most important method to control this malady. Rao and Tulpule (1967) and Nagarajan and Bhat (1973) screened peanut varieties against aflatoxin production and established resistant germplasm lines. On sorghum very little work has been done for identifying the resistant lines against the aflatoxin production. Anandam (1970) initiated this type of work and found only one variety IS 2602 out of ten varieties screened as not supporting the production of aflatoxin. The present work was initiated to screen sorghum line against aflatoxin production on the grains.

MATERIALS AND METHODS

Healthy seed samples of thirty two popular sorghum cultivars were collected from All-India Coordinated Sorghum Improvement Project, Agricultural Research Institute, Rajendra Nagar, Hyderabad. Twenty grams of seeds of each entry were placed in 100 ml. conical flasks, washed thoroughly and autoclaved at 15 lb. psi for 15 min. After shaking well the

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