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Management of Linseed Budfly (*Dasineura lini* Barnes): Effect and Proper Use of Insecticides

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***Abstract* - Studies on Linseed budfly (*Dasineura lini* Barnes) have been done during the rabi season of 2007-08 at the surrounding region of Gwalior (MP). The effective and proper use of insecticides were conducted with the view to manage the pest effectively. Phosphamiden 0.03%, Monocrotophos 0.036%, Oxydemeton methyl 0.025%, Quinalphos 0.05% and Endosulfan 0.07% insecticides were applied at the time of bud formation and after fifteen days in the field against bud fly. Trial on untreated control of the pest comprising the different insecticidal application indicates that Phosphamidon 0.03% is most effective insecticide.**

Keywords : Budfly, Insecticides, Flax, buds

I. INTRODUCTION

Linseed (*Linium usitatissimum* Linneaus) also known as common flax is an important oilseed crop in India. Flax seeds are chemically stable while whole and milled seed can be stored about 4 months at room temperature with minimal or no change in taste and smell. Flax seed contain high level of dietary fiber including lignans, an abundance of micronutrients and omega-3 fatty acids. The linseed buds are infested by the fly and harm the crop. Many scientists have worked in this field to protect the crop from the fly.

The bud infestation by the fly has been reported by various scientists. Pruthi and Bhatia[1] made a preliminary study of the comparative susceptibility of different varieties of linseed at Pusa. Gupta *et.al.*[2], Jakhmola[3], Sood and Pathak[4], Pachori *et.al*[5], Sahu *et.al.*[6] studied on the chemical control of linseed budfly *Dasineura lini* and reported most effective insecticides.

For taking prophylactic action against regularly occurring linseed bud fly, application of insecticides is necessary and for proper management of the pest the information time and frequency of spraying insecticide is lacking.

Taking the above view the study on the management of linseed budfly has been undertaken on the detection of effect of insecticides and their proper spraying schedule (Malik *et.al*[7]. and Pal[8]) .

II. MATERIAL AND METHOD

The study was performed on effective and proper use of insecticides. The experiments were carried out during rabi season of 2007-08 at surrounding region of Gwalior (MP). All the experiments were conducted in black clay loam soil. The field was ploughed and row at the distance of 30 cm and then seeds of the flax were sowed at the distance of 10 cm each. Fertilizers were applied @ 40 kg nitrogen (urea), 40 kg phosphorous (super phosphate) and 32 kg potash per hectare. 10 plants were selected randomly for the experimental observations. At the time of budding the pest (budfly) infestation started to occur. Five insecticides (Phosphamiden 0.03% Monocrotophos 0.036%, Oxydemeton methyl 0.025%, Quinalphos 0.05% and Endosulphan 0.07%) were applied at the interval of fifteen days against linseed budfly after the initiation of the bud formation. The percentage of bud damaged (PBD) by the pest was calculated by applying the formula suggested by Abbott[9], and Lateef & Reed[10].

III. OBSERVATIONS

Five insecticides were applied, first at initiation of bud formation and second after 15 days in the field against linseed budfly. After first spraying of the insecticide the changes observed are as follows-

Table -1 Maggot population and percent bud infestation at different interval of time after first spraying during 2007-08

SNo	Insecticides a.i%	Days after first spraying			
		Number of maggots		Percent of buds infected	
		7	14	7	14
1	Phosphamiden 0.03	10.0	11.5	14.0(21.92)	13.0(20.96)
2	Monocrotophos 0.036	12.5	13.3	18.0(25.07)	19.0(25.76)
3	Oxydemeton methyl	12.8	14.8	19.0(25.76)	18.0(25.07)
4	0.025	13.0	15.0	19.0(25.76)	16.0(23.49)
5	Quinalphos 0.05	13.0	15.0	17.0(24.32)	21.0(27.20)
	Endosulfan 0.07	22.5	24.8	27.0(31.26)	29.0(32.54)
	Untreated Control	1.12	1.48	(0.98)	(1.08)
	S: Em.	3.2	4.3	(2.82)	(3.11)
	C.D. at 5%				

Transformed figures into angle in parentheses.

It is observed that Phosphamiden 0.03% was found most effective; however, it was at par with Monocrotophos 0.036%, Oxydemeton methyl 0.025%, Quinalphos 0.05% and Endosulphan 0.07%.

After second spray the maggot population and percent bud infestation at different interval of time is given below-

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Table 2 – Maggot population and percent bud infestation at different interval of time after second spraying during 2007-08.

S No.	Insecticides a.i%	Days after second spraying					
		No. of maggots			Percent of buds infected		
		3	7	14	3	14	7
1	Phosphamiden	8.3	6.3	5.3	17.0(24.1	16.0(23.4	22.0(27.8
2	0.03	10.	9.5	8.5	0)	9)	5)
3	Monocrotophos	3	8.5	8.5	19.0(25.7	20.0(26.4	26.0(27.8
4	0.036	10.	9.5	7.5	6)	5)	5)
5	Oxydemetonme	5	10.	9.8	23.0(28.6	18.0(25.0	25.0(29.9
	thyl 0.025	11.	5	17.	0)	7)	8)
	Quinalphos	5	23.	8	19.0(25.8	20.0(26.5	24.0(29.2
	0.05	11.	3	0.9	1)	0)	9)
	Endosulfan	3	1.1	0	19.0(25.8	21.0(27.9	27.0(31.2
	0.07	23.	2	2.6	1)	4)	9)
	Untreated	3	3.2	0	30.0(33.2	28.0(31.8	34.0(35.6
	Control	1.1	0		0)	7)	2)
	S: Em.	3			(1.22)	(1.36)	(1.82)
	C.D. at 5%	3.3			(3.53)	(3.93)	(5.52)
		0					

Transformed figures into angle in parentheses.

Three, seven and fourteen days after second spray of all insecticide treatments were significantly effective in checking the population of maggots. Three days after second spray, the population of maggots per 25 buds ranged from 8.3 in Phosphamiden 0.03% to 23.3 in untreated control. Phosphamiden 0.03% was most effective. It was at par with Monocrotophos 0.036%, Oxydemeton methyl 0.025%, Quinalphos 0.05% and Endosulfan 0.07%.

Seven days after second spraying population of maggots ranged from 6.3 in Phosphamiden 0.03% to 23.3 per 25 buds in untreated control. Phosphamiden 0.03% was significantly superior to other insecticides except Oxydemetonmethyl 0.025%, Monocrotophos 0.036% and Quinalphos 0.05%.

Fourteen days after second spraying maggots population ranged from 5.3 per 25 buds in Phosphamiden 0.03% to 17.8 in untreated control. Phosphamiden 0.03% was most effective and superior to other insecticides except Quinalphos 0.05%.

IV. CONCLUSION

After the experimental observation it was concluded that the linseed lose some of its potential yield due to the infestation of linseed budfly. Almost all varieties of linseed are susceptible to the linseed budfly to some or more extent. The insecticide phosphamiden 0.03% among five applied in our experiment is most effective than other insecticides. The insecticide should be applied at the time of appearance of flower buds so that the infestation is avoided and controlled at the initial stage of the crop.

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