Journal of Natural Sciences Research www.iiste.org
ISSN 2224-3186 (Paper) ISSN 2225-0921 (Online)
Vol.4, No.5, 2014

Insecticide Screening For Effectiveness of Controlling Onion Thrips (*Thrips Tabaci*, Lindemann)

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ABSTRACT
For the control of *Thrips tabaci* Lindeman Three insecticides product Movento240SC+Biopower276.6SL, Acephate75SP and Confidor200SL were applied against the onion (*Allium cepa*) thrips (*Thrips tabaci* Lindeman). The movento240SC+Biopower 276.6SP gave the highest results against the onion (*Allium cepa)* thrips (*Thrips tabaci* Lindeman) as compared to the other market standard insecticides of Acephate75SP and confidor200SL. The dose of Movento 240SP + Biopower 276.6SL 2.8 + 4.7 ml having more good results as compared to the other dose Movento 240SP + Biopower 276.6 SL 2.4 + 4.7 ml.
Keywords: onion thrips, insecticide use, insect control

INTRODUCTION

In the world, onion is assaulted by 66 diseases as well as 10 bacterial, 38 fungal, 06 nematode, 03 viral and 01 phytoplasmal disease, 01 parasitic plant and 07 miscellaneous diseases and disorders [1]. Onion thrips (*Thrips tabaci* Lindermann) is one of the major harmful insect pests of onion [2] In the Balochistan province and a severe pest of garlic in the North West Frontier Province (NWFP) of Pakistan [3]. In India, the thrips are dynamic throughout the year and rear on onion from November to May. When attacked by thrips, onion leaves become bent, crumpled and steadily dry up. The pest is very energetic at the time of flowering harmfully affecting both the yield and capability of the seeds [4]. Thrips are also concerned in the multiply of diseases such as fire blight of peas, pod twist of bean, bud necrosis in peanut and several other as well [5]. In the NWFP, *T. tabaci* is very significant pest due to dry and warm climate, which is appropriate for reproduction of onion thrips [6]. Domiciano evaluated the population variation of *T. tabaci* on onion at three sowing times, and the relation with climatic elements, as well as the best time for control [7].The thrips population interrelated negatively with relative humidity and positively with temperature. A population of 10 thrips/plant and temperature around 29^{o} C attached with dry season could cause severe damages to the onion crop. Rao and Swami found Carbofuran and Endosulfan was very efficient in falling the incidence of *T.tabaci* [8]. The result of Rogor (dimethoate) on *T. tabaci* in onions fields in Pakistan [9]. Two treatments were imposed with a 28-day period. The thrips were present from the 3rd week of October, with a population max out during the 3rd week of December. The variety TBK was somewhat charitable to the thrips assault as compared to the Phulkara variety. Population build-up was optimistically correlated with temperature but had a pessimistic correlation with the relative humidity. The pest population was firstly covered up by insecticide treatment but enlarged after 21 days.

MATERIAL AND METHODS

A study was carried out to evaluate the performance of different insecticides over the thrips of onion crop at Sheikhupura, village bansi nigar during 19-04-11 to 13-05-11. Five treatment of insecticides with different dosaege were applied and detail concentration were given in table.1 (Movento 240SC+Biopower276.6SL 2.4+4.7ml and 2.8+4.7ml, Acephate75SP 5.6gm and Confidor200SL 2.3 ml) were applied twice on the specific selected plot of 5 x 5= 25 meter square with the three replications. The insecticides doses that required for the application on the specific plot was calculated and dissolved in 2 liter volume of water. The required amount of insecticides was applied after 7 days intervals at the time of thresh hold level of thrips on onion crop. Number of thrips per 10 randomly plant collected was recorded before insecticide treatment i.e. 0 days, after first day of first insecticide application i.e. 01 days,03 days, 07 days, application and 2nd application was applied after 07 days and data was recorded after 0,01,03,07 and 14 days intervals. The number of thrips per 10 plants of each treatment and each replication were counted and took the average/10plant and average/1plant.

Trt.	Product name	Common name	Dose/acre in gm/ml	Dose/75 meter square
T_1	Untreated		_	_
T_2	Movento+biopower	Spirotetrament	125+250ml	2.4+4.7 ml
T_3	Movento+biopower	Spirotetrament	150+250ml	2.8_4.7 ml
T_4	Acephate 75SP	Acsphate	300gm	5.6gm
T_5	Confidor 200SL	Imidacloprid	120ml	2.3ml

Table1: *Concentrations of different insecticide were used per acre and per75 meter square*

RESULT AND DISCAUTION

The economic threshold level of onion thrips was 15 per plant whereas in our study before insecticides application maximum onion thrips was noted i.e. 20.37 per plant while minimum was 17.33 per plant.Onion thrips, *Thrips tabaci* Lindeman, is a key foliage-feeding pest of onion worldwide and the principal vector of a serious onion pathogen [10]. The control of onion thrips is very important in weeds and other crops growing areas because onion thrips also act as a vector for transformation of virus to different crops especially tomato, pepper and lettuce. Three insecticides product Movento240SC+Biopower276.6SL, Acephate75SP and Confidor200SL were applied against the onion (*Allium cepa*) thrips (*Thrips tabaci* Lindeman) during 18-04-11 to 13-05-11 at Sheikhupura, village bansi nigar. The doses of Movento 240SC+Biopower276.6SL 2.4+4.7ml and 2.8+4.7ml, Acephate75SP 5.6gm and Confidor200SL 2.3 ml were applied on the specific selected plot of 5 x 5= 25 meter square with the three replications. The literature revealed that dry environment conditions are favorable for growth of onion thrips. During the month of April and May the average temperature (25.7C^o, 33.8C^o), dew point (53.3, 61), wind speed (2.2, 6.4) and total precipitation (0.00 inches, 0.002 inches). During study days intervals increase the growth thrips correlated with rise of temperature at first time to last time of application intervals. At 14th days, precipitation washed away the onion thrips from the plants which leads to reduce the number of thrips below economic threshold level. *Ibrahim and Adesiyun* studied the environmental effect on thrips. The results explained that rainfall can be simulated a superior control can be attained, where thrips are rinsed by the force of the rain, not like chemical that may not arrive at the innermost leaves. The data was noted after first insecticide application was shown in figure. The insecticide i.e. movemento + biopower (T2) had most effectiveness against the thrips showed minimum average number of thrips i.e. 8.17 per plant than T1 i.e. control indicated least effectiveness against thrips i.e. 20.46 per plant. Whereas, other treatments were also reduced the number of thrips per plant as compared to control. Meteorological data represented that after one day of insecticides application had less effect on insecticide efficiency whereas in control help to increase the number of thrips. The data of seven days after the first application indicated that number of thrips per plant was increased with increasing the time interval (0-7 days) and after 7 days the number of thrips was not reduced from the economic threshold level. Therefore, for reduction the number of thrips another application of insecticide was done. The data was noted till 7th day after insecticide application was shown in figure. The insecticide i.e. movmento+biopower (T3) had most effectiveness against the thrips showed minimum average number of thrips i.e. 3.50 per plant than T1 i.e. control indicated least effectiveness against thrips i.e. 33.56 per plant. Whereas, other treatments were also reduced the number of thrips per plant as compared to control. Meteorological data represented that after one day of insecticides application had less effect on insecticide efficiency whereas in control help to increase the number of thrips.

FIRST INSECTICIDE APPLICATION

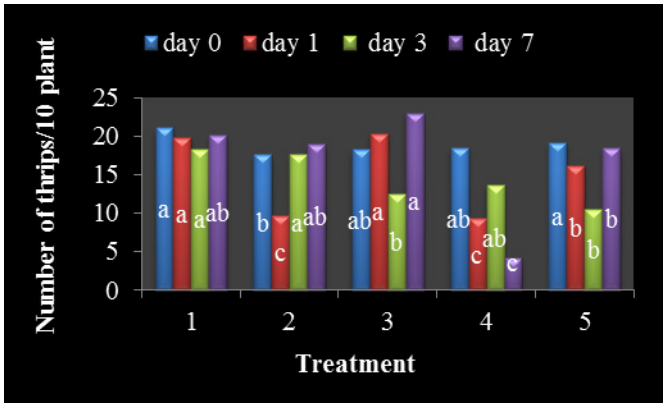

Figure1: *Effect of treatments (untreated, Movento 240SC+Biopower276.6SL 2.4+4.7ml and 2.8+4.7ml, Acephate75SP 5.6gm and Confidor200SL 2.3 ml) on onion thrips/10 plant after first application on 0, 1, 3 & 7 days*

SECEND INSECTICIDE APPLICATION

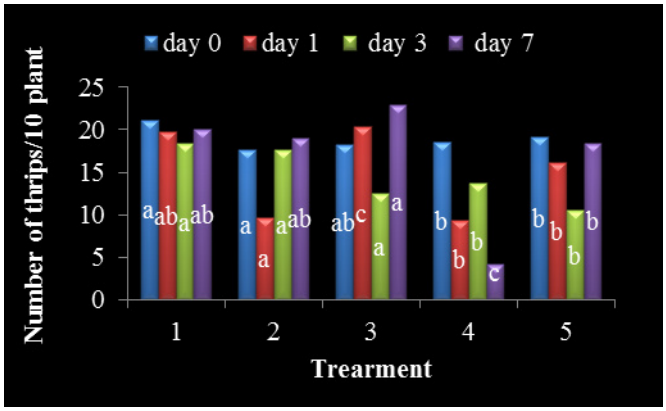

Figure2: *Effect of treatments (untreated, Movento 240SC+Biopower276.6SL 2.4+4.7ml and 2.8+4.7ml, Acephate75SP 5.6gm and Confidor200SL 2.3 ml) on onion thrips/10 plant after second application on 0, 1, 3 & 7 days*

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