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Research Article

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Study on brinjal insect pests and its management at garden experiment

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Abstract

There are 17 pest species were identified of them 5 were major types of pest. Among these, most species were boring the shoots and fruits of brinjal and cause severe infestation. 250 gm of neem leaves and 100 gm of bel leaves are cooked in a container for 10 minutes with 5 litre of pond water. The container was filtered and kept at room temperature. Now 100ml of neem oil was mixed with the extract and sprayed during evening hours for four times at monthly intervals. This extracts exerted strong anti-feedant activity to these insects. On the other hand two yellow and two violet pan sticky traps might be used also on the brinjal cultivated area for controlling these insects.

Keywords: Anti-feedant activity, brinjal crop, insect, pest management.

Introduction

The egg plants or brinjal (*Solanum melongena* L. belonging to the family solanaceae, is one of the most popular vegetables in India. The major brinjal growing states in India are Andhra Pradesh, Karnataka, west Bengal, Tamil Nadu, Maharashtra, Orissa, Uttar Pradesh, Bihar and Rajasthan (Kumar et al., 2019). There are so many causes of low productivity of the brinjal, one of the most important factors is the damage inflicted by the insect pests. It is subjected to attack by number of insect pests right from nursery stage till harvesting (Regupathy et al., 1997).

Insects attack on shoots and fruits and laid eggs on these areas. After hatching, the larvae bore in the growing tips of young shoots during vegetative stage of crop. Yellowing and wilting of affected shoot is the common symptoms of attack (Hedge et al., 2009). The present investigation is an eco-friendly approach for pest control of brinjal which are effective, biodegradable and do not have harmful effect on human bodies.

Materials and Methods

For field trials home garden (150 sq. ft) was used for research works at Hridaypur, North 24 parganas. 5 kg of dried cow dung and 5 kg of neem cake with mixed with 20 kg of soil.

All the species of insects were collected and identified from one year (March, 2018 to February, 2019) (Table 1).

Experiment-I: 250 gm of neem leaves and 100 gm of bel leaves are cooked in a container for 10 minutes with 5 litre of pond water. Now 100ml of neem oil was mixed with the extract and sprayed during evening hours for four times at monthly intervals.

Experiment-II: Two yellow and two violet pan sticky traps were used also on the brinjal cultivated area for controlling these insects.

Results and Discussion

Observation on population of insect pests of brinjal was recorded in the morning hour at weekly interval. Insects laid eggs inside the shoots and fruits of brinjal and causes withering of terminal shoots and dead hearts. They bores petioles of leaves for consumption. Bore fruits become out of shape. The highest intensity of these population were found from June to November. These insects were the actual key pests in the reduction of the brinjal yield in all over nation.

Table 1: Different types of brinjal pest species with their scientific name, family and its order.

Major pest:			
Common name	**Scientific name**	**Family**	**Order**
Stemborer	*Euzophera perticella*	Phycitidae	Lepidoptera
Aphid	*Aphis gossypii*	Aphididae	Hemiptera
Spotted beetle	*Henosepilachna dodecastigma*	Coccinellidae	Coleoptera
Shoot and fruit borer	*Leucinodes orbonalis*	Pyraustidae	Lepidoptera
Ash weevils	*Myllocerus subfasciatus*	*Curculionidae*	Coleoptera
Minor pests			
Pod bug	*Anoplecnemis phasiana*	Coreidae	Hemiptera
Leafhopper	*Amrasca devastans*	Cicadellidae	Hemiptera
Thrips	*Thrips tabaci*	Thripidae	Hemiptera
Cow bug	*Tricentrus bicolor*	Membracidae	Hemiptera
Mealy bug	*Coccidohystrix insolitus*	Pseudococcidae	Hemiptera
Hard Scales	*Aonidiella aurantii*	Diaspidiae	Hemiptera
Whitefly	*Bemisia tabaci*	Aleyrodidae	Hemiptera
Spider mite	*Tetranychus cinnabarinus*	Tetranychidae	Acari
Leaf webber	*Psara bipunctalis*	Pyralidae	Lepidoptera
Termite	*Trinervitermes biformis*	Termitidae	Isoptera
Grasshoppers	*Poicilocerus pictus*	Acrididae	Orthoptera
Leaf roller	*Antoba olivacea*	Noctuidae	Lepidoptera

Figure 1-6. Fruit broer infesting brinjal fruits, infested brinjal shoot, leaves and hole made on shoot and leaf with pest eggs.

Most of farmers used chemicals, some were controlled by chemical and physical methods. These chemicals were adversely affected our body. So using the man made bio-pesticides, author tried to break on their life cycle and significance results were screening from the field survey. Using cow dung and neem cake, the fertility of soil increased which also provide defence to plants against pests and deal with toxicty to both insect pests. Application of cow dung and neem cake is also help to reduce soil pest and nematodes. Broadcasted plants extract were also prevented from most of these identified pest species damages of young and adults plants. Another important observation was found that pollinator insects, bees and other useful organisms were not affected by using these manmade bio-pesticides. Using yellow and violet pan sticky traps, large number of leaf folder pest, stem borer pest, bugs, beetles pest, leaf hoppers pests were attracted the colour of yellow and violet and trapped its sticky substances.

There are several efforts have been made to control these serious pests by applying many market insecticides which is adversely affected on environmental pollution. Use of harmful chemicals and unacceptable higher level of pesticides residues on the crop besides human health risks. Therefore, conservation of bio-control agent in order to reduces the use of chemical pesticides in brinjal.

Conflict of Interest:

The authors declare that there is no conflict of interest.

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