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Studies on varietal susceptibility of oriental fruit fly, *Bactrocera dorsalis* (Hendel) on guava and its attraction to different poison baits

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Seven guava varieties *viz.* Lucknow-49, SeedLess, Behat Coconut, Red Flesh, Allahabad Safeda, Local and Pear Shaped were screened for their susceptibility to Oriental fruit fly, *Bactrocera dorsalis*, (Hendel) infestation at Dhaula Kuan, Distt. Sirmour (H.P.) during 2005-06. Smooth skinned varieties namely Red Flesh, Allahabad Safeda and Local were found to be highly susceptible to the fly attack (Infestation range 64.2 to 80.4%) whereas rough skinned Pear Shaped variety was least susceptible (35.1%) as compared to other varieties where the infestation ranged between 45. 7 to 56.5 per cent. Five baits namely fruit pulps of banana, guava and apple along with jaggery (l0% M:V) and jaggery alone @ 250 ml/bait and aqeous extract of Shyam tulsi (*Ocimum sanctum* var. Krishna) (1g crushed leaves in 4 ml water) @ 370 ml/bait were evaluated for their efficacy in attraction and killing of the fly. Fruit pulps of banana attracted maximum number of flies (23.2/week) followed by guava (18.2) as compared to other baits where the number ranged between 4.8 to 12.0/week.Use of less susceptible varieties and fruit pulps of banana and guava in poison baits have been suggested for better management of the pest.

Key words : Guava, Cultivars, Susceptibility, *Bactrocera dorsalis*, Baits.

INTRODUCTION

Guava popularly known as poor man's apple is one of the major sub-tropical fruits-grown in India. The fruits are either taken fresh or in processed forms and are rich source of proteins, vitamins and minerals. But like other crops, it is also attacked by a variety of insect- pests which limits its production to a great extent The Oriental fruit fly, *Bactrocera dorsalis*. (Hendel) is one of the key pests of this crop and monsoon crop is highly susceptible for its infestation (Naryanan and Batra, 1960). The fly is polyphagous in nature and attacks a variety of crops besides guava. The gravid female causes pin hole damage at the site of oviposition and lays eggs inside the fruit pulp. The maggots after emergence feed on the pulp and the fully fed maggots wriggle out from the fruit and pupate in the soil. Brown depressed spots appear at the site of infestation which results in rotting and premature dropping of the fruits. For checking the pest attack, growing of resistant varieties (Sandhu *et al.*, 1979; Rana *et al.*, 1990 Arora *et al.*, 1998 and Reddy and Vasugi, 2002) and use of fruit pulps (Stole, 2000; Kumar and Aggarwal, 1998; Aggarwl and Kumar, 1999; Jhala *et al.*, 2005 and Thomas *et al.*, 2005), aqeous extract of tulsi (Patel *et al.*, 2005) have been tried and proved effective. The present studies were, therefore, carried out to generate more informations for better management of fruit fly infestation.

MATERIALS AND METHODS

The present investigations were carried out in the guava orchards (under hot and humid conditions) of Regional Horticultural Research Station (HRRS) Dhaula kuan located in Paonta valley of Himachal Pradesh during 2005-06.

Varietal susceptibility:

In order to know the varietal susceptibility of guava to *B. dorsalis*, infestation, seven varieties *viz*. Lucknow-49 Allahbad Safeda, Pear Shaped, Seedless, Behat Coconut, Red Flesh and Local were screened for their susceptibility for its attack during 2005- 06. For this purpose, four trees of each variety of equal vigour and size and of 15 year of age were randomly selected in the orchards of the station and were marked for recording observations. The fruit picking was done from mid- August till third week of September and in total six pickings were obtained. Fifty fruits were randomly selected from the each picking and were examined for the fruit fly infestation. The fruit bearing pin hole damage and/or brown spots were considered infested. Mean per cent infestation was then calculated for each variety. Data obtained so were assigned arc sine trans-formations and were analysed statistically using Randomized Block Design.