

Research Paper :

Efficacy of various insecticides against fruit fly, *Bactrocera cucurbitae* (Coquillet) infesting cucumber

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SUMMARY

Among the nine insecticides tested, malathion (0.1%) proved to be the most effective against fruit fly on cucumber under the field conditions which was at par with fenthion (0.1%). The fenitrothion (0.03%) and alfamethrin (0.005%) stood second in order in their effectiveness. The highest yield of cucumber fruits (8299 kg/ha) was recorded in the treatment of malathion (0.1%) which was at par with fenthion (0.1%) (7982 kg/ha). While fenitrothion (0.03%) and alfamethrin (0.005%) gave 7648 and 7255 kg/ha yield, respectively. The application of malathion (0.1%) gave the highest and net realization of Rs. 19934/ha with cost benefit ratio of 1: 13.75 followed by endosulfan (0.05%) with net realization of Rs. 8609/ha and CBR 1: 10.44, fenthion (0.1%) with net realization of Rs. 18035/ha and CBR 1: 9.49 and fenitrothion (0.03%) with net realization of Rs. 16034/ha and CBR 1: 8.57.

Key words :

Insecticides,
Cucumber, Fruit
fly, *Bactrocera
cucurbitae*

Due to the most suitable and favourable agro-climatic conditions of Gujarat State, area under the cultivation of cucurbitaceous crops is increasing rapidly. Simultaneously, they are being attacked by a large number of insect pests. Among all the pests of cucurbits grown around Junagadh, fruit fly (*Bactrocera cucurbitae*) proved havoc to the cucurbit growers. The fruits damaged by the maggots of this notorious pest, not only remain unfit for human consumption, but also hit hard in the economy of the cultivators.

As all the cultivated cucurbits are vines or creepers, they provide ample hiding places to the insect pests. Even then, many research workers had strongly advocated the chemical control measures as the most effective and economical than any other method of insect control. Keeping all above factors in mind, the present investigation was undertaken to evaluate the efficacy of certain insecticides against fruit fly (*B. cucurbitae*) infesting cucumber crop under Junagadh conditions of Gujarat state.

MATERIALS AND METHODS

An experiment was conducted at College Farm, College of Agriculture, Junagadh Agriculture University, Junagadh (Gujarat) during summer season of 2007 in a Randomized Block Design to determine the efficacy of ten

different insecticides against fruit fly, *B. cucurbitae* on cucumber cv. GREEN GOLD. The seeds were sown in a plot size (gross) of 6.00 m x 4.50 m with spacing of 1.50 m x 60 cm. All the recommended agronomic practices were adopted. Two sprays of each insecticide were given, first at the time of flowering stage and second at 15 days after first spray. Foliar application of insecticides was given with the help of knapsack sprayer.

For recording the observations, five plants from each net plot area were tagged separately. The fruits from these plants were harvested periodically as and when they attained the marketable size. The damaged and healthy fruits were sorted out at each picking and observations on per cent fruit infestation were taken by counting the healthy and damaged fruits at 4, 8 and 15 days after spraying. The data on per cent fruit infestation were statistically analyzed. The yield of fruits from net plot area was converted in hectare basis and the economics were worked out.

RESULTS AND DISCUSSION

The results obtained from the present investigation are summarized below :

First spray :

4th day after first spray :

The data (Table 1) indicated that,

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