

Research Paper :

Bio-efficacy of bio-pesticides against thrips, *Thrips tabaci* infesting cotton

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SUMMARY

An experiment was conducted to evaluate the bio-efficacy of bio-pesticides against thrips, *Thrips tabaci* infesting hybrid cotton at Instructional Farm, College of Agriculture, Junagadh Agricultural University, Junagadh during *Kharif* season of 2007. The results revealed that the thiamethoxam (0.008 per cent) and acetamiprid (0.005 per cent) were found most effective against the pest. While, the combination of biopesticides with thiamethoxam (0.008 per cent) and acetamiprid (0.005 per cent) were superior over biopesticides alone against the cotton thrips.

Key words :

Bio-pesticides,
thrips, *Thrips tabaci*, Cotton

Cotton, the “white gold” is a premier commercial crop of Gujarat. In Gujarat, cotton is cultivated in 23.90 lakh hectares with a production of 101.00 lakh bales and productivity of 718 kg/ha (Anonymous, 2008). In India, 160 species of insect pests have been reported to attack the cotton crop right from the time of germination till the final harvesting of cotton (Agrawal, 1978). Due to introduction of transgenic cotton in India, problem of bollworm has been solved up to the greater extent. However, sucking pest causes damage throughout the crop period. Information regarding effectiveness of bio-pesticides against thrips infesting cotton is meager. Hence, an attempt was made to evaluate the bio-efficacy of bio-pesticides against the pest.

MATERIALS AND METHODS

With a view to test the bio-efficacy of bio-pesticides against thrips, *T. tabaci*, a field trial was conducted during *Kharif* season of 2007 at Instructional Farm, College of Agriculture, Junagadh on cotton variety, G. Cot. Hybrid-10. Eleven treatments were tested in Randomized Block Design with four replications. The crop was sown at the spacing of 120 cm x 45 cm apart having gross and net plot size of 5.4 m x 4.8 m and 3.6 x 2.4 m. Total three applications of the insecticides were taken. Five plants were randomly selected from each net plot and observation was recorded before 24 hours and 1, 3 and 7 days after

treatment from three leaves (upper, middle and lower) of each tagged plant. The data thus, obtained were converted into per cent mortality by using a modified formula given by Henderson and Tilton (1955).

RESULTS AND DISCUSSION

The results obtained from the present investigation are summarized in Table 1.

First spray :

Data presented in Table 1 indicated that the differences in mortality per cent of thrips in different treatments after 1 day, 3 days and 7 days of spraying were found statistically significant.

After 1 day of insecticidal spray, thiamethoxam (0.008 per cent) recorded the highest mortality of thrips (98.06%) which was statistically at par with acetamiprid (0.005 per cent), *V. lecanii* @ 1.25 kg/ha + thiamethoxam (0.004 per cent), *B. bassiana* @ 1 kg/ha + thiamethoxam (0.004 per cent) and *M. anisoplae* 1.25 kg/ha + thiamethoxam (0.004 per cent) that recorded 97.62, 95.13, 93.08 and 90.71 per cent mortality of thrips, respectively.

The treatments of *V. lecanii* @ 1.25 kg/ha + acetamiprid 0.0025 per cent, *B. bassiana* @ 1 kg/ha + acetamiprid 0.0025 per cent and *M. anisoplae* @ 1.25 kg/ha + acetamiprid 0.0025 per cent recorded 88.86 to 81.80 per cent mortality of the pest and found moderately effective. While, bio-pesticides alone viz., *V.*

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