

Bioefficacy of new chemistry molecules against sucking pests of Bt transgenic cotton

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ABSTRACT

Studies were conducted to evaluate some new chemistry insecticide molecules as foliar application for their bioefficacy against major sucking pests and toxicity against predators of Bt transgenic cotton at Department of Entomology, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola during 2013-2014 with eight treatment and three replications. After third spray the application of fonicamid 50 WG @ 0.02 per cent, dinotefuran 20 SG @ 0.008 per cent and imidacloprid 30.5 SC @ 0.005 per cent proved effective in recording minimum aphid population *i.e.* 1.27, 1.37 and 1.92 aphids per leaf, respectively. The treatment with dinotefuran 20 SG @ 0.008 per cent and 0.006 per cent, fipronil 5 SC @ 0.015 per cent, acetamiprid 20 SP @ 0.004 per cent and fonicamid 50 WG @ 0.02 per cent successfully checked the incidence of leafhopper with in the range of 0.63 to 0.93 leafhoppers/leaf at third spray. The application of fipronil 5 SC @ 0.015 per cent, fonicamid 50 WG @ 0.02 per cent, imidacloprid 30.5 SC @ 0.005 per cent, dinotefuran 20 SG @ 0.008 per cent and acetamiprid 20 SP @ 0.004 per cent effectively minimized the incidence of thrips population with in the range of 2.59 to 3.60 thrips per leaf at the end of third spray. Whereas, acetamiprid 20 SP @ 0.004 per cent proved effective in lowering down the whitefly population (0.99 whiteflies/leaf), which was closely followed by fonicamid 50 WG @ 0.02 per cent (1.10 whiteflies/leaf), fipronil 5SC @ 0.015 per cent (1.11 whiteflies/leaf), dinotefuran 20 SG @ 0.008 per cent (1.20 whiteflies/leaf), and imidacloprid 30.5 SC @ 0.005 per cent (1.34 whiteflies/leaf). However, during the present studies no deleterious effect of insecticidal treatments were observed on population of natural enemies. The highest seed cotton yield was recorded in the plot sprayed with fipronil 0.015 per cent, which was closely followed by dinotefuran 0.008 per cent, fonicamid 0.02 per cent, imidacloprid 0.005 per cent, acetamiprid 0.004 per cent and dinotefuran 0.006 per cent. On the basis of economics, imidacloprid 0.005 per cent proved to be the most economically viable treatment followed by acetamiprid 0.004 per cent, fipronil 0.015 per cent, dinotefuran 0.006 per cent and fonicamid 0.02 per cent. The present findings indicates that these insecticides can be suitably incorporated in an integrated management programme of sucking pests of cotton.

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