

RESEARCH ARTICLE

Evaluation of effective period of seed treatment insecticides against cotton jassids [*Amrasca biguttula biguttula* (Ishida)]

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ABSTRACT

The present study was conducted during *Kharif*, 2010-11 at the Experimental Farm of Cotton Improvement Project, Mahatma Phule Krishi Vidyapeeth, Rahuri to test the efficacy of imidacloprid 600 FS, thiamethoxam 350 FS and carbosulfan 25 DS as seed dressing insecticides against cotton jassid, *Amrasca biguttula biguttula* (Ishida). The results revealed that carbosulfan 25 DS @ 50 g kg⁻¹ seed was found to be effective in checking jassid population upto 42 DAE. The next promising treatment was carbosulfan 25 DS @ 40 g kg⁻¹ of seed, thiamethoxam 350 FS @ 4 ml kg⁻¹ of seed. However, it was with thiamethoxam 350 FS @ 4 ml kg⁻¹ of seed and phorate 10G @ 1 kg a.i. per hectare. Both seed treatment of carbosulfan, thiamethoxam and phorate proved most effective than imidacloprid in protecting the crop from jassids below economic threshold level in early growth period. These treatments appeared to be the most economical and recorded maximum seed cotton yield. Imidacloprid was observed to be less effective than carbosulfan and thiamethoxam and phorate against cotton jassids, might be due to continuous selection pressure of imidacloprid ultimately resulted into development of resistance in jassids.

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INTRODUCTION

Cotton is an important cash crop extensively cultivated in several states of the country, however, it suffers due to various insect pests causing heavy losses in yield. Among the vast array of insect pests, the problem of sap sucking pests has become more serious from seedling stage thereby resulting in considerable reduction in yield. A reduction of 22.85 per cent seed cotton yield due to sucking pests has been reported by Satpute *et al.* (1990). Of the various sucking pests jassid, *Amrasca biguttula biguttula* (Ishida) is the most destructive insect pest of cotton, which causes on an average 11.6 per cent reduction in seed cotton yield (Dhawan and Simwat; 1997).

A project on "Awareness-cum-Surveillance Programme for Management of Major Pests in Cotton-Soybean Based Cropping System in Maharashtra (2009-10)" has been initiated from June 2009 under the Head, Department of Entomology,

MPKV, Rahuri. The project deals with survey and surveillance of major insect pests of cotton and soybean in all districts of Western Maharashtra. Pest monitors and Pest scouts appointed by the Department of Agriculture M.S., Pune in different districts had recorded the observations on insect pests of cotton and the same was communicated through internet to the NCIPM, New Delhi, where data was analyzed and interpreted and sent to the university for final advisory for the management of insect pests. The overall observation data indicated that the per cent red leaves caused by jassids was continuously increased in Bt cotton treated with imidacloprid as seed treatment and foliar application since 21DAE. It indicated that repeatedly use of imidacloprid for seed treatment and foliar application resulted in problems like pest resistance and increased cost of production (Nemade *et al.*, 2007; Dahival and Arora, 2001).

With a view to confirm the pest resistance problem in jassid to imidacloprid the present investigation was carried