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RESEARCH ARTICLE

Bioefficacy of insecticides against sucking pests on soybean crop

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ABSTRACT

A field experiment was laid out in Randomized Block Design with six treatments including untreated control replicated four times. This crop was sown on 4th July 2010 in plot size of 25 square meter. In this experiment numbers of sucking pests were counted on the randomly selected five plants on which five leaves were taken three from upper and two from bottom in each plot. Observations were recorded 24 hours before the spraying of insecticides and after 24 hours, 3 days, 5 days, 7 days and 10 days of spraying of insecticides. Thiacloprid 240 SC, when applied as foliar spray at the rate of 180 g a.i./ ha was most effective against the sucking pests with minimum 1.8 insects/ plant, highest grain yield of 32.4 q /ha, 42% avoidable losses and 1.74:1 benefit cost ratio. It was followed by Thiacloprid 240 SC @ 150 g.a.i./ha.

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INTRODUCTION

Soybean is a wonder crop of twentieth century. It is an excellent source of protein and oil. It is a two dimensional crop as it contains about 40-42 per cent high quality protein and 20-22 per cent oil. It also contains 20-30 per cent carbohydrates. The protein quality of soybean is equivalent to that of meat, milk products and eggs. Hence, it is well established fact that soybean is cheap source of protein and edible oil. These characteristics have made soybean to fit well in sustainable agriculture. During the late sixties and early seventies, the soybean crop was considered to be comparatively safe crop as regards to insect pest attack. As 275 insect species have been recorded attacking soybean crop in India. Researchers in many parts of India have confirmed that seed yield and seed quality are being adversely affected by major insect pests *viz.,* girdle beetle, tobacco caterpillar, green semilooper, *Helicoverpa armigera*, jassids and white fly.

MATERIALS AND METHODS

A Field experiment was laid out in Randomized Block Design with seven treatments including untreated control replicated four times. The crop was sown on 4th July, 2010 in plot size of 25 square meters. The crop management practices (*i.e.* field preparation, sowing, weeding, fertilizer application etc.) were adopted as per the recommended practices.

In this experiment, number of sucking pests was counted from five plants/plot at seven days interval starting from 30 days after sowing till harvest of the crop. To assess the efficacy of different insecticides against sucking pests in soybean crop, two sprayings were given by hand operated knapsack sprayer. Pre-treatment observations were recorded 24 hours before spaying and post treatment after 24 hours, 3 days, and 7 days of spraying. The observations were taken from top three leaves and two middle leaves of each plant. In this trial, the density of whiteflies was comparatively higher than that of jassids. The layout and other treatment details of this experiment are given in Table A.

Design : Randomized Block Design
Treatment : 6
Replication : 4
Plot size : 25 square meter