

Research Paper :

Evaluation of some management schedules against brown plant hopper in rice



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SUMMARY

A field trial was conducted during *Kharif* season, 2004, repeated in *Rabi* season, 2004-05 and *Kharif* season, 2005 at the Regional Research and Technology Transfer Station (RRTTS), Keonjhar, OUAT Bhubaneswar. The performances of the neem derivatives like neem seed extract (NSE), neem oil (NO), multineem (commercial product of neem based pesticide) and a commercial Bt. formulation (Halt) were evaluated for their bioefficacy against brown plant hopper (BPH). Populations of BPH were recorded at 30 and 50 DAT. Results indicated that first round application with neem pesticides at 20 DAT and subsequent application with the same neem pesticides or with chemical pesticide like chlorpyrifos at 40 DAT could be the appropriate step to handle the BPH population in rice crop.

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Key words :

Neem seed extract, Neem oil, Mullineem, Bt. formulation, BPH, Brown plant hopper, IPM

The BPH occupies the major pest status because of accelerating momentum in its occurrence in rice ecosystem. In ecological term, BPH is a typical 'r' strategist and its population is kept under natural check only under low densities but if the population escapes this catch, it rapidly grows exponentially. So in the present investigation an attempt has been made to formulate an eco-friendly management schedule against BPH of transplanted rice by integrating neem derivatives, Bt formulation and synthetic pesticide, chlorpyrifos. A field trial was conducted during *Kharif* season, 2004 and the same experiment was repeated in *Rabi* season, 2004-05 and *Kharif* season, 2005 at the Regional Research and Technology Transfer Station (RRTTS), Keonjhar, Orissa operating under the control of Orissa University of Agriculture and Technology, Bhubaneswar to develop a bio-rational management strategy for brown plant hopper.

MATERIALS AND METHODS

The experiments were designed in a Randomized Complete Block Design (Factorial). A rice variety moderately resistant

to insect pests, *Lalat*, generated by OUAT, Bhubaneswar, Orissa and a susceptible rice variety *Jaya* were included in the test. Neem derivatives like neem seed extract (NSE), neem oil (NO) and multineem (commercial product of neem based pesticide) were also included in the experiment. A commercial Bt. formulation (Halt) was also utilized in the experiment. The performances of these biopesticides were studied for their bioefficacy against brown plant hopper. Recommended IPM practice and untreated check treatments were also included in the field experiments for the relative comparison of results. The nymphal and adult population of brown plant hoppers was collected by adopting water pan sampling technique on 10 hills. In a yellow plastic pan of 9" diameter, a small amount of water to the level of 1/5th of height of the yellow pan was taken and two to three drops of liquid detergent was added to the water taken in the yellow plastic pan. The pan was placed at the base of the hill and the hill was struck 3 times to dislodge the arthropods into the pan. In this manner, collection was made for individual treatment of each replication separately. After the collection of arthropods into the pan, they were

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