



RESEARCH ARTICLE

Efficacy of new insecticide molecules against leaf hoppers and plant hoppers in rice (*Oryza sativa* L.)

■ P. R. SHASHANK¹ *, J. MALLIKARJUNA², M. S. V. CHALAM³ AND T. MADHUMATHI³,

¹Department of Entomology, College of Agriculture, University of Agricultural Sciences, G.K.V.K., BENGALURU (KARNATAKA) INDIA

²Department of Entomology, College of Agriculture, Acharya N.G. Ranga Agricultural University, Rajendranagar, HYDERABAD (A.P.) INDIA

³Department of Entomology, College of Agriculture, A.N.G.R.A.U., BAPATLA (A.P.) INDIA

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*Corresponding author:
spathour@gmail.com

ABSTRACT

Field experiments were conducted during *Kharif* 2008-2009 to evaluate new insecticides against brown plant hopper (BPH), *Nilaparvata lugens* (Stal); white backed plant hopper (WBPH), *Sogatella furcifera* (Horvath) and green leaf hopper (GLH), *Nephotettix virescens* (Distant). Ethiprole (0.05 kg a.i./ha) and buprofezin (0.20 kg a.i./ha) were found to be highly effective against BPH and WBPH. Buprofezin (0.20 kg a.i./ha) and Thiamethoxam (0.025 kg a.i./ha) were highly effective against GLH. These new insecticides also gave higher rice grain yields *viz.*, 5.16 t/ha, 5.13 t/ha and 4.98 t/ha, respectively. All the insecticides tested, proved to be superior over control.

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INTRODUCTION

Rice (*Oryza sativa* L.) is the staple food for more than half of human population. Rice constitutes 52 per cent of total food grain production and 55 per cent of total cereal production in India (Saxena and Singh, 2003). The insect pests are a major constraint in rice production. Yield loss due to insect pests of rice ranges from 25 to 51 per cent (Panda and Rath, 2003). Pathak and Dhaliwal (1981) considered 20 species of major significance out of 100 species damaging rice. Of pests, sucking insects *viz.*, leaf hoppers (*Nephotettix virescens* (Distant) and *Nephotettix nigropictus* (Stal.) and plant hoppers (*Nilaparvata lugens* (Stal.) and *Sogatella furcifera* (Horvath) cause devastating damage. Use of insecticides forms one of the most effective management tools besides tactics like cultural and biological means. With this holistic approach, new insecticide molecules were evaluated.

MATERIALS AND METHODS

Field trials were conducted at Agriculture College Farm, Bapatla, Guntur (15°59'N and 80°13'E and 28 ft AMSL) during *Kharif* 2008-2009 in irrigated rice. The experiment was laid out in a Randomized Block Design using susceptible rice cultivar BPT-5204 (Samba mahsuri). Eight insecticides were evaluated with untreated control being replicated three times with plot size 25m². Two to three seedlings were planted per hill at 20×15 cm. The recommended doses of fertilizers were applied to maintain good plant stand throughout the crop period. Two sprays of each molecule were applied based on the economic threshold level.

Leaf and plant hopper density selected hills were gently tapped and those falling into the water were counted. The data on hopper density were recorded one day before (pre-treatment) and 1, 5, 10 and 15 days after imposing treatments.