

MONITORING OF INSECTICIDE RESISTANCE ON BROWN PLANTHOPPER, *NILAPARVATA LUGENS* STAL. POPULATION OF PRONE AREA IN CHHATTISGARH PLAIN

Randeep Kr Kushwaha*, Sanjay Sharma¹ and Vijay Kr Koshta²

Department of Entomology, CoA, IGKV, Raipur, Chhattisgarh, India- 492 012

Email: rndp2010@gmail.com

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Abstract: Monitoring of insecticide resistance on brown planthopper, *Nilaparvata lugens* Stal. population of prone area in Chhattisgarh plain was carried out during kharif 2009 and 2010. The field collected insects were reared for 5 generations in Entomology greenhouse before conducting toxicity tests. Susceptibility of 7-9 day old nymphs was assessed by spraying the commercial formulations of different group of insecticides at various concentrations on TN-1 plants upto runoff stage and observed the mortality after 24, 48 and 72 hrs. of spraying. The level of insecticide resistance in field population of percent mortality presented in form of resistance ratio (RR) (mortality of field population (RR_R & RR_D)/mortality of greenhouse population) was worked out. During 2009, the highest RR of Raipur and Dhamtari BPH population was noticed (1:0.22) and (1:0.04) in buprofezin, respectively and lowest in chlorpyrifos + cypermethrin and fipronil (1:1.0) in Raipur while Dhamtari in fipronil. During 2010, the maximum RR of Raipur and Dhamtari population was recorded (1:0.15) and (1:0.04) in cypermethrin and buprofezin, respectively. However, minimum population of Raipur BPH was (1:1.0) in fipronil and carbaryl and (1:0.98) in Dhamtari, respectively within 72 hrs. of spraying. On the basis of two years pooled mean, the maximum RR of Raipur BPH was noticed (1:0.27) in cypermethrin while Dhamtari in buprofezin followed by imidacloprid (1:0.43), respectively. Whereas, the minimum population of Raipur exhibited in carbaryl (1:0.97) and Dhamtari (1:0.98) in fipronil within 72 hrs. of spraying. The RR indicates that the minimum was observed in buprofezin followed by cypermethrin and imidacloprid. On the basis of information generated on field population of BPH revealed that it had developed considerable level of resistance against buprofezin, cypermethrin and imidacloprid. However, buprofezin is having different mode of action for controlling of BPH.

Keywords: Rice, Newer insecticides, Insecticide resistance, Relative efficacy of insecticide, *Nilaparvata lugens*

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*Corresponding Author

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