



**THE EFFECT OF INSECTICIDE ON PREDATOR-PREY MODEL
TO CONTROL THE BROWN PLANTHOPPER**

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ABSTRACT

The interaction of brown planthopper with its natural enemies can be represented in a predator-prey model. In this research, predator prey model influenced by insecticide is discussed. It is assumed that insecticide is applied at only one time when the population of brown planthopper is rised. The simulation results indicate that the brown planthopper population could be reduced significantly, but only in a moment. For a long periods of time, the brown planthopper population and their natural enemies will be oscillated and lead to the specified value. This means, the brown planthopper populations for long periods of time only depends on the mortality rate of predator and the level of interaction of the brown planthopper and predators.

Keywords: *Predator-prey model, insecticide, brown planthopper*