**Suggested topics:** Geographic Information Systems in Applied Insect Ecology

**Paper title:** Spatial extent of the Brown planthopper (BPH) *Nilaparvata lugens* (Stal.) in rice plantations in two provinces of Thailand

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**Abstract**

The rise in global temperature can affect the incidence and nature of threats from various agricultural pests since many insect populations will become larger underglobal warming. However, there is lack of quantitative assessment describing and explaining how these changes are occurring. In order to understand current problems better, there is need for research to provide a baseline to enhance risk assessments and the design of current and future management options providing policy makers with improved and insightful analysis.

Rice (*Oryza sativa* L.) is the world’s most important staple food for two-thirds of the human population and is a major food security crop in Thailand as well as in other countries of the Asian region. However, climate change and pesticides misuse by farmers have affected pest pressure causing huge crop losses during certain years by sucking pests like the Brown planthopper (BPH) *Nilaparvata lugens*. Geographic Information Systems (GIS) provide important tools in forecasting the risks of pests and diseases and can be even ingrated into existing integrated pest management (IPM) programmes to achieve optimal management when delineating the pest hot-spots and assesing the probability of pest outbreaks in different parts of a specific graographic region.

The objective of the present paper is to show preliminary results and analysis from the research using GIS technology to determine the spatial extent of the Brown planthopper (BPH) *Nilaparvata lugens* (Stal.) in rice plantations in two provinces of Thailand. The main goal was to identify spatial patterns of the pest in the survey areas. Assessing the incidence of the insect is based on the estimation of the insect populational density and the use of precise GPS coordinates of each sampled field in order to map the incidence and geographical distribution of the pest.

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