

Population fluctuations of brown plant hopper *Nilaparvata lugens* and white backed plant hopper *Sogatella furcifera* on rice

Abstract

Population fluctuation of Brown Plant Hopper (BPH) and White Backed Plant Hopper (WBPH) were studied in Myanmar for two seasons (rainy and summer). Experiments were conducted on a 5 ha rainfed unsprayed field and done in 5 experimental units with an area of 100x100 m. BPH and WBPH were counted from 30 rice hills out of 2000 hills randomly. Relative humidity, temperature, rainfall were also recorded. Population fluctuation study revealed that BPH population was high at 64 and 74 days after transplanting (in Mid September 2007) associated with heavy rainfall, high temperature and high humidity. The BPH population was lowest (in mid week October 2007) suggesting that low rainfall and low humidity were at least partially responsible for the decrease population of BPH. The WBPH was being passed through the same weather regime as BPH. When the rainfall decreased or trend to stop the population began to build up reach its peak. This trend of population fluctuation is not directly related with rainfall, but rainfall could be influencing the physiology of rice plant. This can be seen in the correlation and regression analysis. The fluctuation of plant hopper were correlated with temperature and showed higher correlation with rainfall patterns during the first cropping season. Second cropping season coincide with dry season, there was no rainfall and hopper population was observed to be correlated to temperature and relative humidity. Thus temperature, rainfall and relative humidity were observed to influence plant hopper population during the two different rice growing seasons.

Keyword: Population fluctuation; BPH and WBPH; Rice