B - 35

MANAGEMENT OF RICE BROWN PLANTHOPPER THROUGH RESISTANT VARIETIES

C. Kudagamage *and* **E. Nugaliyadda**
(*Central Rice Breeding Station, Batalagoda, Ibbagamuwa*)

Brown planthopper (Bph), *Nilaparvata lugens* (Stal) is a serious pest of rice in Sri Lanka. The conventional method of control of this pest is by the use of insecticides, but their continuous use can give rise to many complications such as harmful effects on non-target beneficial insects, development of resistance to insecticides and environmental pollution. Moreover, insecticides are costly to the average farmer.

The use of resistant varieties offers a less expensive and stable control tool for Bph. Recently Bg 397–2, a rice variety resistant to Bph was bred at Central Rice Breeding Station, Batalagoda.

When adult macropterous Bph were released into a cage containing different rice varieties, a significantly larger number of insects settled on susceptible varieties like Bg 96–3. In a greenhouse experiment, Bph exhibited definite non-preference for oviposition on resistant varieties. The survival of nymphs on resistant varieties was significantly lower than on susceptible varieties. The honeydew excreted by Bph, when allowed to feed on resistant and susceptible rice varieties was absorbed on filter papers treated with bromocresol green solution and the area of positive honeydew spots were measured to quantify the feeding activity of Bph on these varieties. It was found that Bph feed less on resistant variety like Bg 379–2.

In a large scale field test using Bg 379–2, it was found that the variety was initially infested with Bph but the population never increased to a level that causes an economic damage to the crop. The population of adults were low throughout the remaining growing period. There was a favourable build up of the natural predator of Bph, *Cyrtorrhinus* species. The quality characteristics of the rice grain were affected by Bph infestation.

The results showed that resistant varieties are useful in preventing crop losses caused by Bph. Since the application of insecticides is not required, there are no harmful effects on beneficial insects like *Cyrtorrhinus*.