

COMPARATIVE STUDIES OF SOME RICE GENOTYPES AGAINST WHITE BACKED PLANT HOPPER (WBPH) *SOGATELLA FURCIFERA* HORVATH.

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ABSTRACT: Sixty two rice genotypes including White backed plant hopper (WBPH) resistant and susceptible check varieties Ptb33 and TN1 respectively were evaluated against WBPH under net house condition at CRRRI Cuttack during 2006. The result of the experiment revealed that only Ptb33 was resistant and recorded damage score '0'. Two genotypes viz., Naveen, PR-114 were found to be moderately resistant recording damage score '1' and can be recommended for WBPH endemic areas. Six genotypes viz., Banskathi, CR-1014, PR-115, Padmini, Panidhan, Padmakeshari were less susceptible to the pest and in damage score '3'. Thirty four genotypes were found moderately susceptible to WBPH. The rest nineteen were highly susceptible and were completely killed by the pest and recorded damage score '9'.

Key words: Rice, white backed plant hopper (WBPH), *Sogatella furcifera*

The white backed plant hopper (WBPH), *Sogatella furcifera* (Horvath) damages rice crop in many parts of India including A.P., Assam, Bihar, Delhi, Haryana, H.P., T.N., U.P., W.B., M.P., Manipur, Orissa, Maharashtra, Rajasthan and Punjab (CHELLIAH and GUNATHILAGRAJ, 1990). It is a major pest of rice in hilly tracts of U.P. (SACHAN and GARG, 1992) and in Haryana after rice root weevil (KUSHWAHA *et al.*, 1982). This pest is more abundant during the early stage of the growth of rice crop, especially in nurseries. Under favorable conditions, WBPH produces several generations and can cause hopper burn in the rice crop. Both nymphs and adults suck phloem sap causing reduced vigor, stunting, yellowing leaves and delayed tillering and grain formation. Damage in the form of hopper burn frequently appears in large areas of a region or completely uniform in a rice field. To find out the suitable resistant or tolerant varieties attempt has been made to evaluate some released varieties against WBPH in net house conditions at Cuttack.

Sixty two rice genotypes including WBPH resistant and susceptible check varieties Ptb33 and TN1, respectively were evaluated against WBPH under net house condition at CRRRI Cuttack during 2006. Each variety was sown in a line in the plastic tray. A uniform plant population of 20 plants was maintained in each variety. A mother culture of WBPH was maintained and reared in the susceptible variety TN1 to get sufficient number of WBPH population of uniform sizes in the net house. After 10 days of germination, WBPH nymphs (mixed population of 2nd and 3rd instars) were collected and released on the seedlings at the rate of 7-8 insects per plant. Then the plastic trays were kept inside a cage for ten days. After ten days of insect feeding, observations were recorded on the per cent mortality of the plants as per the standard evaluation system (0-9 Scale).

The results of the experiment as depicted in table-1 revealed that three genotypes viz., Ptb33 was resistant and recorded damage score '0'. These resistant

varieties can be further utilized in resistant breeding programme. Two genotypes viz., Naveen and PR-114 were found to be moderately resistant recording damage score '1' and can be recommended for WBPH endemic areas. Six genotypes viz., Banskathi, CR-1014, PR-115, Padmini, Panidhan, Padmakeshari were less susceptible to the pest recorded damage score '3', Six were in damage score '5' and twenty eight were in damage score '7'. The rest nineteen were found to be highly susceptible and completely killed by the pest and recorded damage score '9'. In a similar artificial infestation screening trial under taken by Rath *et al* 2005 reported nine resistant varieties against this pest. In an artificial infestation studies (KHATTRI *et al.*, 1983) reported that the grain loss varied from 11 to 39% when 15 insects/hill was released at varying stages of plant growth and precise estimates on the damage causes by WBPH and the resultant losses are to be quantified in the field.

Table-1: Screening of rice genotypes against WBPH.

Sl. No.	Damage score	No. of genotypes	Genotypes
1	0	1	Ptb33
2	1	2	Naveen, PR-114
3	3	6	Banskathi, CR-1014, PR-115, Padmini, Panidhan, Padmakeshari
4	5	6	CRM-2203-2, CO-28, Durga, Gour-7, T-90, Rangasuli
5	7	28	Pusa-44, Kalinga-III, Tapaswini, Satabdi, Heera, VLD-16, Kalinga-II, Vijeta, Ratana, ADT-36, PY-3, Bala, Radhi, Ajaya, Tara, CRM-2203-1, CRM-2203-4, CRM-2203-10, CRM-2007-1, Gour-1, GR-2, GR-3, Gour-10, IR-64, Palghar-60, Sunachibuk, Sarbati, Sarla
6	9	19	Biraja, Saket-4, Sneha, Gour-III, Sattari, Udayagiri, Annada, CRM 2203-3, CRM2203-8, CRM 2007-3, GR-5, GR-101, IR-36, HMT (Kalahandi), PR-103, PR-111, Ratnasugandhi, Sambhamasuri, TN 1.

SES: Standard Evaluation System IRRI 1996

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