

## Varietal Susceptibility to the Brown Planthopper *Nilaparvata lugens* (Stal) in Rice

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The varieties Co 29, Co 36, Co 38 and 4611 are less susceptible to brown planthopper while R4-14, Bhavani, IR 20, IR 22, CR 12-178, Mala, Jayanthi, Cul. 658, CR 44-118-11, CR 44-121-1, RP 20-14, RP 502-36, TR 18, Cul. 21939, RP 176-6, CR 140-62, T(N)1, DGWG, M 40, Co 33-9, IR 3, and Co 39 are susceptible. The planthopper population is high in October which coincided with the post-flowering stage of the crop.

The brown planthopper *Nilaparvata lugens* (Stal) is a serious pest of rice and of worldwide distribution. It damages the crop by sucking the plant sap and by transmitting the grassy stunt virus disease. Thirumal Rao (1961) reported the occurrence of the pest for the first time in Andhra Pradesh. Its importance has increased during the past few years and the damage is severe in rice varieties which flowered in middle of October (Jayaraj *et al.*, 1974). Lower infestations caused reduced tillering, reduced crop vigour, fewer panicles and higher percentage of unfilled grains (Bae and Pathak, 1970). Heavy infestations cause complete drying up of the crop resulting in hopper burn due to desapping by adults and nymphs (Pathak *et al.*, 1969). Velusamy *et al.* (1975) reported the outbreak of this pest in Coimbatore district during August - September. In the present study, the rice varieties were screened for resistance to the brown planthopper under field conditions.

### MATERIALS AND METHODS

Twenty six rice varieties and  $F_1$ ,  $F_2$  progenies of crosses involving T(N) 1 x CO 13, DGWG x CO 33, Cul. 5824 x TKM 6 were evaluated for their resistance to brown planthopper under field conditions. In each variety, 25 hills selected at random were examined for the severity of damage in the post-flowering stage. The varieties which showed hopper-burn symptoms in all the hills examined were classified as susceptible and varieties which showed no signs of external symptoms in spite of harbouring insects as less susceptible.

### RESULTS

The rice varieties in the post-flowering stage were severely damaged. The infestation was mostly of macropterous form and the rice varieties in the tillering phase 30-40 days after planting did not suffer

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much damage. The population of adults and nymphs varied from 2500 to 3000 per hill and were seen from the base of the plant to the ear heads and sooty mould fungus covered the entire foliage. Total wilting and loss of chlorophyll was observed 2-3 days after severe infestation. The manifestation of external symptoms could not be observed in Co 29, Co 36, Co 38 and Cul. 4611 inspite of heavy population of 750 to 1000 per hill. In the remaining varieties the damage

was very severe resulting in total drying up of plants and the results are presented in Table. The progenies of crosses involving T(N) 1 x Co 33, DGWG x Co 33, Co 13 x T(N) 1 and Cul. 5824 x TKM 6 suffered severe hopperburn damage.

The varieties T(N)1, IR 8 and Co 39 transplanted during the first week of December 75 showed severe hopperburn symptoms in February, 76 and population of planthoppers varied from 400-700 per hill. Co. 29 transplanted during this period showed no signs of external damage though the population of planthoppers was as high as 400-500 per hill. The brown planthopper population varied from 25-30 per hill in T(N)1, IR 8, Co 39, 60 days after planting while the population varied from 500-700 per hill 100 days after planting in the above varieties.

TABLE: Reaction of rice varieties to Brown planthopper *Nilaparvata lugens* (Stal) in Kharif 75 season

S.No.	Susceptible
1.	RP 4-14
2.	Bhavani
3.	IR 20
4.	IR 22
5.	CR 12-178
6.	Mala
7.	Jayanthi
8.	Cul 658
9.	CR 44-118-11
10.	CR 44-121-1
11.	RP 20-14
12.	RP 502-36
13.	TR 18
14.	Cul. 21939
15.	RP 176-6
16.	CR 140-6
17.	T(N)1
18.	DGWG
19.	M 40
20.	IR 8
21.	Co 39
	Less Susceptible
22.	Co 29
23.	Co 36
24.	Co 38
25.	Cul. 4611

## DISCUSSION

The varieties Co 29, Co 36, Co 38 and Cul. 4611 are classified as less susceptible and varieties which exhibited hopperburn symptoms are classified as susceptible. Accordingly RP 4-14, Bhavani, IR 20, 22, CR - 12 178, Mala, Jayanthi, Cul. 658, CR - 44 118-11, CR.44-121-1, RP 20-14, RP 502-36, TR 18, Cul. 21939, RP 176-6, CR 140-62, T(N)1, DGWG, M 40, Co 33-9, IR 8 and Co 39 are classified as susceptible and susceptibility of IR 8, IR 20, IR 22 to brown planthopper has been reported earlier (Anonymous, 1975). Bhavani, Ratna and IR 20 were reported to be suscep-

tible to this pest by Velusamy *et al.* (1975).

The planthopper population was high in October which coincided with post-flowering stage and this is in agreement with the findings of earlier workers (Jayaraj *et al.*, 1974). The population varied from 25-30 per hill on 60 days old crop and 500-700 per hill on 100 days old crop. The abundance of planthoppers on young crop of 20-30 days age has been reported earlier (Anonymous, 1973).

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