Research Note :

Survival of Brown Plant Hopper (BPH) *Nilaparvata lugens* (Stal.) on Paddy Field Weeds

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In vitro study was carried out in the Glass house, Department of Entomology, College of Agriculture, Indira Gandhi Krishi Vishwavidylaya, Raipur (C.G.) during 2006-2007 to assess the survival of brown plant hopper (BPH), *Nilaparvata lugens* (Stal.) both nymphs and mature adults on different paddy field weeds, wild rice (*Oryza nevara*) and rice check (TN 1). The study revealed that BPH nymphal and adults survival was zero on all weeds. On wild rice (*Oryza nevara*) there was prolonged nymphal development, slow growth and low survival as compared to the insects caged with susceptible check TN1.

Key words : *Nilaparvata, Lugens,* Paddy, Field weeds, Survival

Brown plant hopper (BPH), *Nilaparvata lugens* (Stal.) is one of the most important insect pests attacking rice crop all over the world including India. The insect inflicts damage through sucking plant sap by remaining at the basal portion of rice plant. As a result, the plant gets wilted and dries off. Under field conditions, the damage spreads in circular spots. It is commonly believed that most delphacid plant hoppers feed, oviposit and develop primarily on monocots. *Nilaparvata lugens* has been reported on 4 families of plants and on over 20 genera of grasses in fact it is monphagous on *Oryza* and *Leersia* (formerly, *Oryza*). Brown plant hopper is a monophagous insect restricted to cultivated rice and its allied wild forms like *Oryza perenie* and *Oryza spontanea*.

The experiment was carried out in the Glass house, Department of Entomology, College of Agriculture, Indira Gandhi Krishi Vishwavidylaya, Raipur (C.G.) during 2006-2007.The experimental material consisted seventeen paddy field weeds, collected from research farm of IGKV and farmers' fields near by college. Weeds were planted in plastic pots and trimmed two times for getting fresh tillers. Plants were kept confined separately by placing inverted long cylindrical plastic tubes with their openings tied up with cotton cloth by a rubber

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Table 1 : Survival of brown plant hopper on different weeds collected from paddy field

Sr. No.	Weed name	Number of releases, 5-8 days age old insects			Number of releases adults		
		I phase	II phase	III phase	I phase	II phase	III phase
1.	*Oryza sativa*	√	√	√	√	√	√
2.	*Oryza nivara*	√	√	√	√	√	√
3.	*Cyprus difformes*	0	0	0	0	0	0
4.	*Scirpus* sp.	0	0	0	0	0	0
5.	*Cynotis axillaries*	0	0	0	0	0	0
6.	*Saccharam spontaneum*	0	0	0	0	0	0
7.	*Caesulia axilaris*	0	0	0	0	0	0
8.	*Echinoclova colonum*	0	0	0	0	0	0
9.	*Spleranthus acmela*	0	0	0	0	0	0
10.	*Agropyron repines*	0	0	0	0	0	0
11.	*Cynodon dactylon*	0	0	0	0	0	0
12.	*Dactylpium ezptium*	0	0	0	0	0	0
13.	*Ergastries* sp.	0	0	0	0	0	0
14.	*Sphearnthus indica*	0	0	0	0	0	0
15.	*Ludurigia actovalvis*	0	0	0	0	0	0
16.	*Alternanthera triandra*	0	0	0	0	0	0
17.	*Fimbristylis dichotomy*	0	0	0	0	0	0

band. On potted plants, ten insects of brown plant hopper (BPH), *Nilaparvata lugens* (Stal) were released on these weeds. This process was repeated for nymph and matured adults for three times each for further conformation. Survival of BPH nymphs was observed at the interval of 24 hours, after 3 days, 5 days, 7days and 10 days of insect release. Five replications were used in completely randomized design.

Survival of brown plan thopper (BPH), *Nilaparvata lugens* (Stal.) on common paddy field weeds were investigated under glass house conditions.Nymphal and adult survival was zero on all weeds (Table 1) except on rice (TNl) and wild rice (*Oryza nivara*). Where as wild rice (*Oyza nivara*) adverse affected nymphal development with high mortality and irregular prolongation of the nymphal period. Only a small proportion of BPH nymphs developed as adults when forced to stay and feed on the *Oryza nivara*. Similar results were reported by Kisimoto *et al.* (1985) that the BPH is a monophagous insect, restricted to cultivated rice and its allied wild forms such as *Oryza perenie* and *Oryza spontanea*.Weed plants play a role in survival of insect pest during off season and help the insects to carryover from one crop to another and season to season.It is evident that brown plant hopper is monophagous insect, restricted to cultivated rice and it's allied wild forms like *Oryza perenie*, *Oryza nivara* and *Oryza spontanea.*

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