

OCCURRENCE OF BROWN PLANTHOPPER (BPH) AND ITS PREDATORS ON RICE IN KARNATAKA

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ABSTRACT

The population of brown plant hopper (BPH), *Nilaparvata lugens* Stal. and its predatory fauna were recorded on eleven popular varieties of rice. The hopper burnt patch was observed in 40.38 per cent in the fields. The size of the patch varied from 1.2 to 18.3 m². The hopper burnt patches ranged from 30 to 63.75 %, whereas the variety, Jyoti recorded highest (75 %) hopper burnt patches.

Key words: Brown planthopper, Rice, Varieties, Predators

The population of brown plant hopper (BPH) *Nilaparvata lugens* (Stal) and its predatory fauna were collected from 11 varieties of rice grown in Cauvery command area (Table 1). A total of 208 fields were surveyed and samples were collected during November and December 2010, and the incidence of hopper burn was recorded. The presence of hopper burn symptom was considered for calculating per cent fields affected by BPH. From each site, three destructive samples were randomly collected. For each sampling a polythene bag was pulled on the hill from top to the bottom, the entire hill was covered, cut down, and the polythene bag was reversed. The bag was shaken rigorously, and cotton immersed in ethyl acetate was placed into the bags. The collected samples were taken to the laboratory for further observations on counts of BPH and natural enemies using stereobinocular microscope. The fauna were identified following Vijaykumar and Patil(2004).

During the survey, BPH was recorded on all varieties. The hopper burnt patch was observed in 40.38 % fields (Table 1). The size of the hopper burnt patch varied from 1.2 to 18.3 m². The variety, Jyoti recorded highest hopper burnt patches (75 %) followed by

MTU-1001 (63.15 %) BPT-5204 (50.00 %), JGL-1798 (44.44 %), IR-64 (40.74) and Kaverisona (30.00 %). The variety BPT-5204 recorded maximum number of BPH / hill (334.67 ± 43.66), followed by Ankursonam(53.89 ± 6.83), Kaverisona (48.67±6.66) Pro-Agro -6444 (26.33±9.50) and BR-2655 (26.33±8.74). Earlier studies by Dyck (2007) have reported that Pioneer Hybrid (PHB-71) and Jyoti were resistant to BPH which is in contrast with the present results. Similarly, higher incidence of BPH on BPT-5204 was reported from Khammam (Anonymous, 1993), Karimnagar (Anonymous, 1996) and Nalgonda district of Andhra Pradesh(Anonymous, 1997). The reasons for such variations could be the microclimate (Alam, 1971; Hirao, 1984; Sarma, 1978), migratory population (Dyck, 1977), plant character and natural enemies (Sarma, 1978).

Predatory spiders were observed on all varieties of rice. Maximum number of spiders were recorded from BPT 5204 (16.33 ± 4.58) followed by Kaverisona(4.33 ± 1.53). Predatory mirid bug and Carabids were recorded in all these varieties except BPT-5204 and Pro-Agro-6444.

Table 1. Occurrence of BPH on rice varieties

Varieties/hybrids	Total fields visited	No. of fields shown HB	BPH	Spiders	miridbug	carabids
Pioneer hybrid (PHB-71)	18	4 (22.22)	2.67±2.08	1.00±1.73	1.33±1.15	0.67±0.58
Jyoti	16	12 (75.00)	5.18±2.33	1.96±0.94	1.22±0.70	0.48±0.50
JGL-1798	09	4 (44.44)	11.78±1.95	1.67±1.53	0.33±0.58	0.17±0.29
MTU-1001	38	24 (63.15)	12.41±0.53	1.48±0.83	0.41±0.53	0.52±0.50
BR-2655	11	2 (18.18)	26.33±8.74	1.94±1.00	0.28±0.25	0.00±0.00
Thanu	34	9 (26.47)	7.28±1.60	0.61±0.54	0.78±0.39	0.78±0.39
BPT-5204	04	2 (50.00)	334.67±43.66	16.33±4.58	0.00±0.00	1.00±1.00
AnkurSonam	26	9 (34.61)	53.89±6.83	1.83±0.26	0.14±0.24	0.03±0.05
KaveriSona	10	3 (30.00)	48.67±6.66	4.33±1.53	1.00±0.00	0.33±0.58
IR-64	27	11 (40.74)	12.05±2.00	0.72±0.48	0.52±0.50	0.22±0.38

HB-Hopper burn (Figures in the parenthesis indicates percentage of fields which had one or more hopper burnt patches)

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