and untreated seeds were sown as checks. The crop also received 3 additional sprays with bacteria (10^8 CFU/ml) or fungarin when plants were 20, 30, and 40 d old.

Bacterial multiplication was monitored from root and shoot samples removed at 10-d intervals on NBY-R or NBY-RN agar. Fluorescent pseudomonad strains 7-14RN and 4-15R had low levels of 0.5×10^5 CFU/g tissue up to 40 d, and were not detected in subsequent samplings. Nonfluorescent strains 33R and 4-03R had high levels of 0.9×10^6 CFU/g tissue at 30 d, and 1.0×10^5 CFU/g tissue at 60 d and 110 d.

Leaf Bl and neck Bl were assessed (see table). It appears that the fluorescent pseudomonad bacteria strains, in spite of lower population dynamics, were more effective in reducing leaf and neck B1 severity. □

Effect of seed bacterization and sprays with antagonistic bacteria on B1 incidence in rice UPLRi-5. Cavinti, Philippines, 1988 wet season.

Treatment	Severity		Grain yield[c] (g)
	Leaf Bl[a]	Neck Bl[b]	
Bacterial strain			
4-03R	3.32	2.96	100.4
33R	3.49	3.70	95.5
4-15R	2.57	2.95	92.5
7-14RN	3.29	2.75	102.6
Fungarin	1.95	3.68	106.7
Check	6.27	3.77	96.3
LSD (0.05)	2.22	1.79	43.6

[a] Number of lesions/cm^2 leaf area. [b] Severity index = $\frac{\text{n (l) + n (2) + n (3) ..... n (9)}}{\text{total n}} \times 100$, where n (l), n (2), etc. are number of tillers with disease score 1, 2, or 9. [c] From 100 panicles/plot.

Insect management

Effect of plant age on whitebacked planthopper (WBPH) feeding

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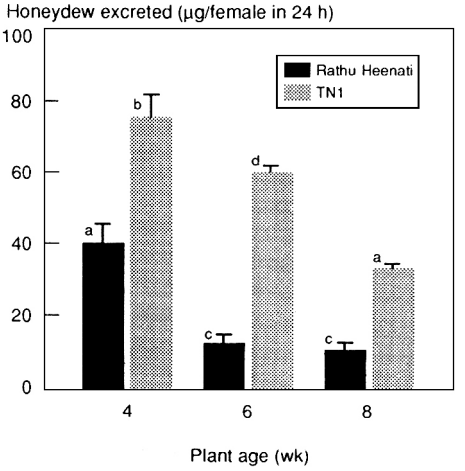
WBPH is a phloem feeder, with the amount of honeydew excreted regarded as an index of feeding. We studied WBPH feeding and rate of honeydew excretion on potted plants of susceptible and resistant varieties of different ages.

The secondary tillers of 4-, 6-, and 8-wk-old resistant Rathu Heenati and susceptible TNl plants were removed and each main tiller with soil placed in an 8- × 9-cm plastic pot. Each pot was covered with a medially perforated 8-cm-diameter plastic dish through which the tiller emerged. A medially perforated 7-cm-diameter filter paper disc was placed over the dish around the base of the tiller and covered by an inverted perforated plastic cup for a feeding chamber. The feeding chamber was fastened to the dish with "Sellotape."

Five newly emerged macropterous females, starved but water-satiated for 3-4 h, were introduced into the feeding chamber, and the hole plugged with cotton wool. The females were allowed to feed for 24 h.

The filter paper discs were removed, briefly immersed in a solution of 0.1% ninhydrin in acetone, and dried at room temperature. Purple or violet honeydew spots were cut off the disk and eluted in a solution of 0.8 ml of 1.2% aqueous copper sulfate and 4.2 ml of 85% ethanol.



Dry weight of honeydew excreted by *Sogatella furcifera* females on plants of different ages of resistant Rathu Heenati and susceptible TN1. Columns with the same letter are not significantly different at the 5% level by DMRT. Bars indicate ± standard deviation.

Color intensity of the eluent was measured on a spectrophotometer at 475 nm. The quantity of amino acids in honeydew was expressed in glutamic acid standard.

Regardless of plant age, two to four times less honeydew was excreted by WBPH on resistant Rathu Heenati plants than on susceptible TN1 (see figure). The differences possibly are due to the presence of repellents, toxins, or a feeding inhibitor in Rathu Heenati. WBPH feeding on both varieties decreased with plant age, possibly because of a decrease in the nutrient value of the rice plants. □

Virus diseases of some lepidopterous rice pests in the Philippines

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Dead and infected larvae of various lepidopterous pests were collected from ricefields at IRRI and in Laguna, Batangas, Palawan, and South Cotabato Provinces in the Philippines. Live larvae were reared on host plants