Seasonal population of rice leafhoppers and planthoppers at Varanasi, India

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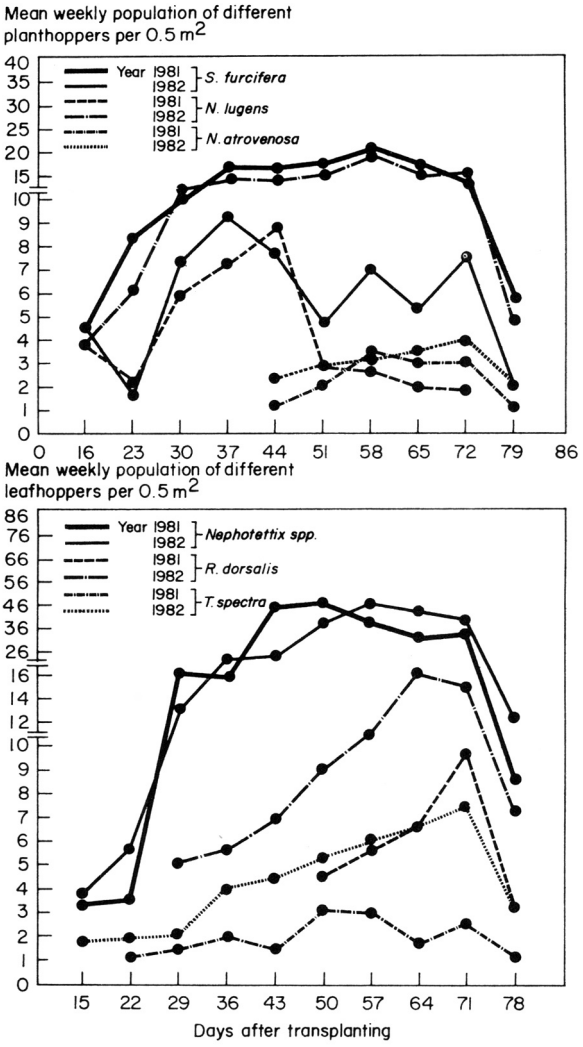
Leafhoppers and planthoppers are the most dominant insect pests in kharif. The most important of these are *Nephotettix virescens, N. nigropictus, Nilaparvata lugens, Sogatella furcifera, Recilia dorsalis, Tettigella spectra,* and *Nisia atrovenosa.* We recorded seasonal population density changes of these hoppers to determine how to develop management programs for their control.

Thirty rices were grown in a randomized block design with three replications at the BHU research farm in 1981 and 1982. Hopper infestation in 0.5-m^2 plots was recorded from 15 d after transplanting (DT) to 70 DT.

The figure shows that *Nephotettix* spp., *N. lugens,* and *S. furcifera* populations developed earliest in both years. *T. spectra* also appeared early in 1982 and at 22 DT in 1981. *R. dorsalis* and *N. atrovenosa* occurred first at 50 and 44 DT in 1981 and at 29 and 44 DT in 1982.

There was no relationship between peak population density and crop age. Peak populations developed early in 1981: *S. furcifera* at 37 DT, *N. lugens* at 44 DT, and *Nephotettix* spp. and *T. spectra* at 50 DT. Peak populations of *N. atrovenosa* and *R. dorsalis* were at 58 and 71 DT. In 1982, peak populations occurred later (see figure).□



Mean population density of leafhoppers and planthoppers at Agricultural Research Farm, B. H. U. Varanasi, 1981 and 1982 kharif.

Pest Control and Management
WEEDS

Yield improvement and economic return of herbicide application in broadcast rice

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On the Guadalcanal Plains, Solomon Islands, where rice has been grown intensively with heavy mechanization and short turnaround, weeds are a problem and herbicide use is vital to rice production. To estimate the effect of herbicide application (propanil, 360 g ai/litre) on weed population and rice yield, we conducted a trial in a previously weedy rice field. Major grass species were *Echinochloa colona* and *E. crus-galli.* There were very few broadleaf weeds in the experimental plot. Major broadleaf weeds on the rice farm were *Sphenoclea zeylanica* and *Monochoria vaginalis.*

Five propanil treatments were applied — 2, 3, 4, 5, or 6 litres/ha (0.76, 1.08, 1.44, 1.80, or 2.16 kg ai/ha) — using a knapsack sprayer. Each treatment was replicated 4 times in randomized complete blocks. A 5- × 10-m plot was one replication. To avoid disturbing seedling growth, herbicide was applied from a timber placed across the plot. Ten 1-m swaths were sprayed along the length of the plot.

IR9852-22-3 was seeded on prepared, flooded fields at 120 kg/ha. The field was drained 7 d after seeding (DS). Propanil was applied at 15 DS. Four days after herbicide application, the field was reflooded. N was applied as urea at 30, 40, and 40 kg N/ha at 30, 50, and 75 DS,