Species composition of *Nephotettix* in Tamil Nadu

S. Vennila and P. C. Sundara Babu. Tamil Nadu Agricultural University, Coimbatore 641003, India

We collected *Nephotettix* specimens from 12 rice-growing centers in Tamil Nadu: Kancheepuram, Tirur, Vellore, Cuddalore, Tiruchirappalli, Aduthurai, Madurai, Ambasamudram, Nagercoil, Paiyur, Coimbatore, and Bhavanisagar. Specimens were separated on the basis of morphological characters and sent to IRRI for identification.

Two additional species besides those already identlfied — *N. virescens* (Distant) and *N. nigropictus* (Stål) — were found (see table). For the additional species *N. malayanus* Ishihara and Kawase and *N. modulatus* Melichar, only females were found. Previous records of *N. malayanus* in India are available from Calcutta and Malabar Coast. *N. modulatus,* an African and Malagasian species, is reported for the first time in Asia.

All four species were recorded at Coimbatore only. *N. virescens* was found at all sites and was the only species at Cuddalore, Tiruchirappalli, and Nagercoil. *N. virescens* dominated in all places. When *N. nigropictus* was recorded, it was next to *N. virescens. N. nigropictus* was found in seven places, *N. malayanus* in two, and *N. modulatus* in six. □

Nephotettix **species in different regions of Tamil Nadu, India.**

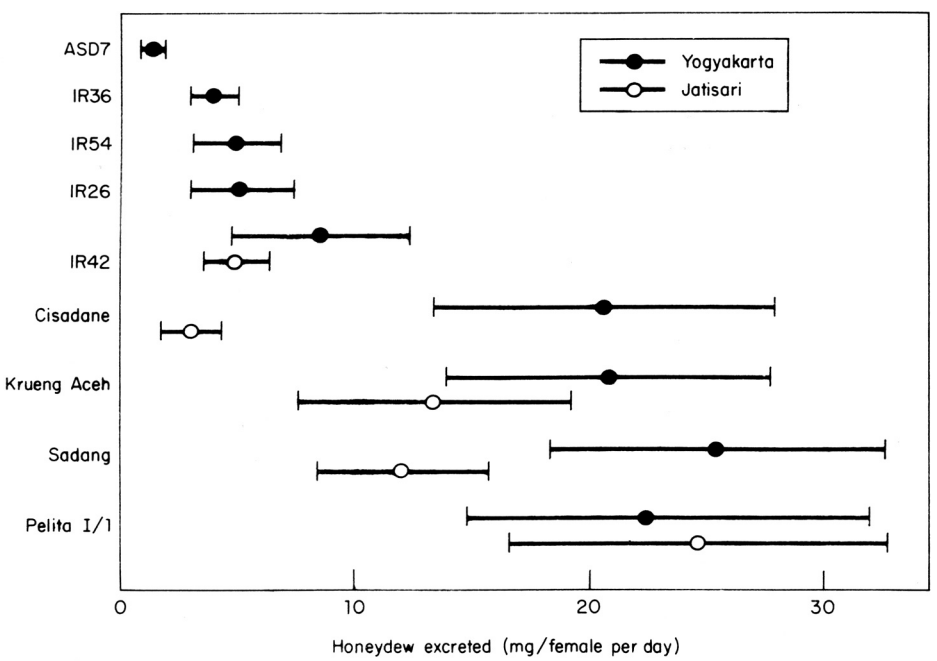
Locality	*Nephotettix spp.* (no.)	Species composition[a]							
		N. virescens		*N. nigropictus*		*N. malayanus*		*N. modulatus*	
		no.	%	no.	%	no.	%	no.	%
Kancheepuram	74	73	98.65		–		–	1	1.35
Tirur	204	196	96.08	4	1.96		–	4	1.96
Vellore	110	85	77.27	17	15.45		–	8	7.28
Cuddalore	44	44	100.00		–		–	–	–
Tiruchirappalli	233	233	100.00		–		–		–
Aduthurai	189	177	93.65		–	2	1.06	10	5.29
Madurai	278	231	83.09	47	16.91		–		–
Ambasamudram	25	23	92.00	2	8.00		–		–
Nagercoil	31	31	100.00		–		–		–
Paiyur	32	28	87.50	4	12.50		–		–
Coimbatore	144	109	75.71	19	13.19	4	2.77	12	8.33
Bhavanisagar	29	23	79.31	4	13.79	–	–	2	6.90

[a] – = not found.

New genetic makeup of brown planthopper (BPH) populations in Central Java, Indonesia

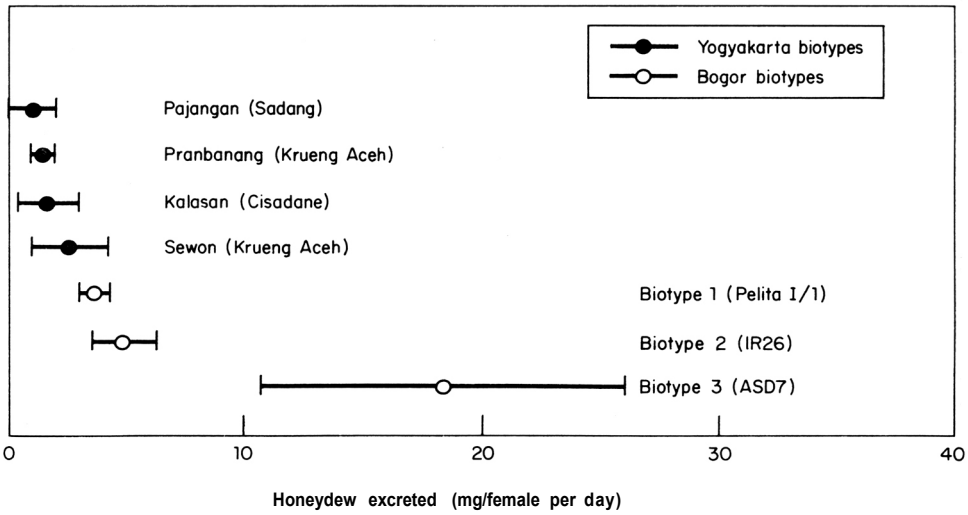
K. Sogawa, Soekirno, and Y. Raksadinata. Indonesia-Japan Joint Programme on Food Crop Protection, Directorate of Food Crop Protection, P. 0. Box 36, Pasarminggu, Jakarta, Indonesia

BPH populations had been below the economic injury level on IR36 and Cisadane until recently. However, BPH populations which started to infest Cisadane in Yogyakarta in 1985 became prevalent in Central Java this year. Development of populations that could break down Cisadane resistance was closely related to the spread of new high-yielding national varieties Krueng Aceh and Sadang, whose genetic resistance to the BPH is rather vulnerable.



1. Honeydew excreted by adult females of Yogyakarta and Jatisari populations of the BPH on selected rice varieties. Mean and 95% confidential ranges are indicated by spot and bar, respectively.

Bioassays demonstrated that Central Java populations could feed and reproduce on Cisadane, Krueng Aceh, and Sadang as readily as on susceptible Pelita I/1, but not on IR36, IR42, and IR54 (Fig. 1). Inability to feed on ASD 7 clearly distinguishes Central Java populations from biotype 3 (Fig. 2). Central Java populations were characterized by selective virulence on a certain group of varieties with the BPH resistance gene *bph 2* and were distinct from North Sumatra populations, which can infest all varieties with the *bph 2* gene. Such differences in virulence between Central Java and North Sumatra populations corresponded to the level of BPH resistance in the varieties on which both populations developed.



2. Honeydew excreted on ASD7 by adult females of Yogyakarta populations collected from 4 different places, and Bogor biotypes 1, 2, and 3 maintained on Pelita I/1, IR26, and ASD7, respectively.

This indicates that BPH populations are able to modify their biotypic makeup in accordance with quantitative as well as qualitative variations of genetic resistance in host varieties to maximize their fitness values. Central Java populations pose a problem with nomenclature of **BPH** biotypes in the field. □

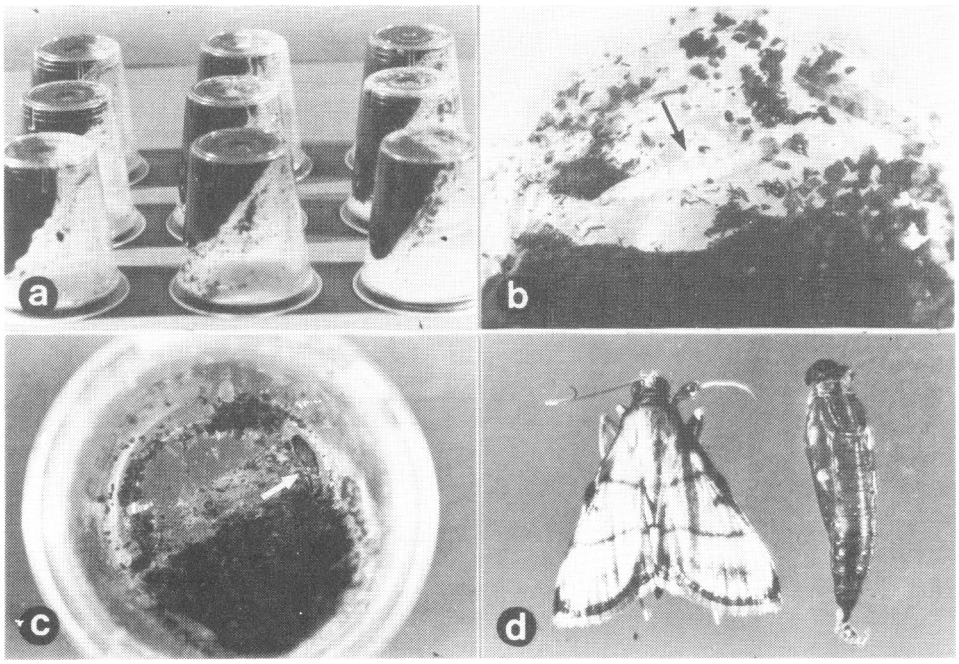
Artificial diet for rearing rice leaffolder (LF)

Z. R. Khan, International Centre of Insect Physiology and Ecology, Nairobi, Kenya, and Entomology Department, IRRI

Several artificial diets for lepidopteran insects were evaluated for rearing LF *Cnaphalocrocis medinalis* (Guenée). A modified velvetbean caterpillar commercial diet was the most suitable. The diet consisted of 1,500 ml water, 17.5 g agar, and 230 g dry mix.

Six to eight grams of the diet was placed in a clear plastic cup (4.5 cm long, 4 cm diam) and baked in a 35°C oven for 24 h to evaporate excess water (too much humidity in the cup was found to be detrimental to survival of first-instar larvae). Two newly emerged first-instar larvae of *C. medinalis* were released in each cup and the cups covered with snug-fitting lids. The cups with larvae were inverted in an incubator at 27 ± 2°C, 65-70% relative humidity, and 12:12 photoperiod (see figure). Survival and growth of the insect were monitored daily, and compared with insect growth on 30-d-old susceptible IR36 rice plants.

Larval development on this diet (14-21 d, 16.2 d average) was almost the same as on IR36 plants (17 d). The percentage of larvae completing development was also quite high (93%). Average pupal weight was 21.02 mg, compared with 17.8 mg on IR36 plants. Average longevity of males (8.3 d) and females (9.6 d) was similar to that of insects reared on susceptible rice plants (7.8 and 9.3 d). Average fecundity of females reared on the artificial diet (182 eggs/ female) was similar to that of



Rearing rice LF on an artificial diet. a) Inverted clear plastic cups with artificial diet, b) LF larva feeding on the diet, c) LF pupa in the plastic cup, and d) a LF pupa and an adult developed on the diet. IRRI, 1987.