

Light Trap A Tool for Forecasting the Incidence of Some Insect Pests of Rice

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The effectiveness of light trap for surveillance and forecasting as well as for control of the green rice leaf hopper was shown in Japan by Kobayashi *et al* (1966) and Sasamoto *et al* (1968). Thus, the Chinsura type of light trap was installed in rice field at Main Rice Research Station, Nawagam for three *khari* seasons of the years 1971, 1973 and 1974. The collections made and counted, were for green rice leaf hopper, *Nephotettix cincticeps* Uhler and for the moths of rice leaf folder, *Cnaphalocrosis medinalis* Guenee, for the period from June to December during the growing period of rice. The data are given in Table 1.

From the data given in Table 1, it can be seen that the high population densities of green rice leaf hoppers i.e. 16005 and 5609 were recorded during October 1971 and 1974 respectively, while it was 13954 during September 1973. Data also revealed that the highest peak in population densities was observed three months after the period, when population was built up to more than 500. (621 and 650

during August 1971 and 1974 respectively while 746 during July 1973). Taking into consideration the meteorological data (year 1971 and 1973) it can be inferred that the initiation of build up, as well as increase in population, continued upto the period, till the relative humidity remained high and difference between maximum and minimum temperature remained narrow. Similar was the trend for the year 1974 but population build up was much low. Probably because the relative humidity did not rise beyond 77 per cent. Further, number of rainy days and amount of rain, preceding and during the period of initial build up of population, remaining less in 1974 as compared to other years. This shows that when the number of rainy days were less, the intensity of initial build up remained low (1974), as compared to where number of rainy days were more (1971 and 1973). Thus environmental factors did play important role for population build up in the area. It can therefore be concluded that light trap alongwith meteorological observations, can work as a fine tool for surveillance and forecasting of the incidence of green rice leaf hopper, *N. cincticeps*. The observation must be started one month in advance of planting.

Similarly, the trend of catch of rice leaf roller moths, *C. medinalis* indicated that the peak period of activity remained to be September and octo-

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TABLE 1

Number of green rice leaf hopper. *N. cincticeps* and the moth of rice leaf

1971											1973
Month	Average Temp. in OF		Average R.H. %	Rainfall in M.M.	No. of Rainy days	No. caught in light trap		Av. Temp. in of		Average R.H. %	
	Max.	Mini.				Nep- hot- ett- ix- cin- cti- ceps	Cna- pha- loc- ros- ism- edi- nalis	Max.	Mini.		
June	92.60	79.80	80.80	239=522	5	34	Nil	97.50	80.25	77.00	
July	87.75	72.22	77.75	212=344	8	46	Nil	87.50	78.00	88.75	
August	83.25	76.00	90.25	308=610	13	621	10	84.50	76.50	87.50	
September	87.50	75.50	86.50	374=142	11	7066	353	81.33	76.33	93.60	
October	88.00	70.40	84.60	000=000	—	16005	252	81.75	72.75	85.25	
November	87.75	58.00	62.50	000=000	—	4491	414	68.00	63.50	63.50	
December	82.60	52.20	66.60	000=000	—	121	25	74.75	55.25	76.25	

G. medinalis caught at Chinsura light trap folder

1974										
Rainfall in MM	No. of Rainy days	No. caught in light trap	Ave. in	Temp. O.F.	Ave- rage R.H. %	Rain fall in MM	No. of Rainy days	No. caught in light trap		
		Nep- hot- ett- ix- cin- cti- ceps	Cna- pha- loc- roc- ism- edi- nalis	Max.	Mini.			Nep- hot- ett- ix- cin- cti- ceps	Cna- pha- loc- roc- ism- edi- nalis	
019=000	4	10	Nil	99.50	79.75	76.56	2.800	1	Nil	Nil
144=000	12	746	15	93.25	79.75	72.50	61.200	3	20	Nil
177=050	16	1125	8	88.25	77.75	76.00	25.400	6	650	2
288=000	18	13954	43	94.00	76.50	77.50	40.900	5	4929	30
002=000	1	8645	231	92.50	73.25	77.25	008.400	3	5609	103
000=000	—	3350	12	87.25	56.50	60.00	000=000	—	4248	42
000=000	—	1659	13	79.75	56.50	59.00	000=000	—	754	5

ber. Thus the light trap can be used for warning farmers well in advance; provided meteorological observations are also taken in to consideration simultaneously, long time before planting.

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REFERENCES

Kobayshi, U. K. Enyo, Johnes and Y. Ukawa. 1966. Recent increase in captures of the green rice leaf hopper (*Nephotettix*

cincticeps Uhler) by light traps (In Japanese). *Proc. Hansai Plant Protect. Sec.* 8:57-62.

Sasamoto, K. M. Kobayashim and H. Shiraishi 1968. Insect control by light trap. I. Attracting effectiveness of various lamps of different wave lengths against the green rice leaf hopper *Nephotettix cincticeps* Uhler. (In Japanese). *Jap. J. Appl. Entomol. Zool.* 12: 164-170.