

TARC Note

Incidence of the Rice Gall Midge, *Orseolia Oryzae* (Wood-Mason), at Different Localities in Northern Thailand

The rice gall midge, *Orseolia oryzae* (Diptera, Cecidomyiidae), is a major pest of rice in the wet season in northern Thailand. Ecological studies of the insect^{1,2)} have been carried out at Phan Rice Experiment Station located 800 km north of Bangkok.

Rice cultivation is made almost simultaneously in northern Thailand: seeding in June, transplanting in July and harvesting in December. Rice varieties used by farmers are Niaw Sanpathong, Kao Dawk Mali, Muey Nawng 62-M etc., and they are photoperiod-sensitive. Their panicle primordia are formed at the end of September even when transplanting has been delayed to August. Therefore, their vegetative period is about 4 months, during which a sharp increase of population density of the rice gall midge occurs. The insect produces galls which

cause unproductive tillers. After the panicle primordium formation, the insect starts to decrease in number. A peak of the number of damaged tillers caused by the insect is observed at the maximum tillers stage. A total of 15 localities distributing from Maesai in Chiengrai Province to the Phrae Rice Experiment Station in Phrae Province was selected to examine damaged tillers at the maximum tillers stage at the end of September (Fig. 1). The distance from Maesai to Phrae is 250 km. A total of 50 hills was sampled at random at each locality to examine percentage of damaged tillers (number of galls/total number of tillers). This survey was carried out for 5 successive years from 1977 to 1981.

As given in Fig. 2, very high percentages of damaged tillers, 48 and 45% on the average, were observed in Pasang and Ban Chong respectively. The highest percentage was 78% at Ban Chong in 1979 and 72% at Pasang in 1980 as shown in Fig. 3. The percentages in Pafek and Maesai ranged from 30 to 40%, and those in Maechan and Pakodam were 21 to 20% on the average, although 63.8% of damaged tillers was observed

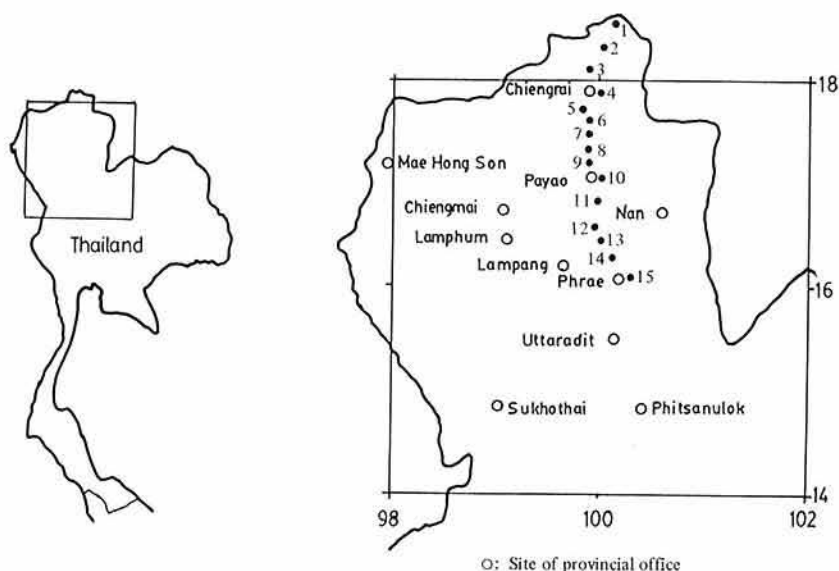


Fig. 1. Fifteen localities selected for the survey

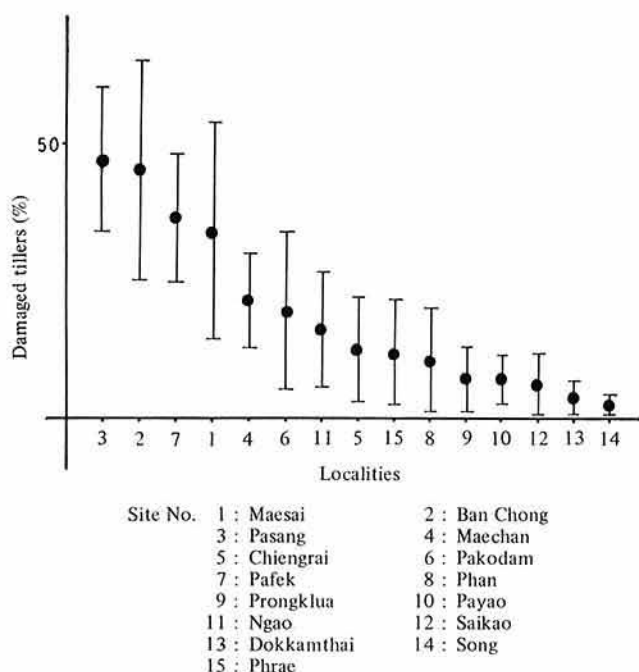


Fig. 2. Percentage of damaged tillers caused by the rice gall midge at different localities (1979-1981). Bars indicate statistical variance.

at Maechan in 1979. The percentage of damaged tillers was between 10 and 20% in Ngao, Chiengrai, Phrae, and Phan, and it was lower than 10% in Prongklua, Payao, Saikao, Dokkamthai and Song. In Dokkamthai, gall midge damage was completely not observed from 1977 to 1979.

From this result, it can be said that the insect widely occurs in the northern part of Thailand, but the damage is severer in areas closer to the boundaries between Burma and Laos, showing the highly infested areas restricted within 100 km distance between Maesai and Pafek in Chiengrai Province. In other words, the incidence of the insect in northern Thailand shows a decline from that in Maesai (Chiengrai Province) to that in Song (Phrae Province). This finding indicated important localities to which control measures have to be employed with more emphasis than to other localities.

In the highly damaged areas, big flora of wild rice was found around the paddy fields. The wild rice is an important host of the insect in the dry season,⁴⁾ and the population density of the insect in the wild rice in the dry season seems to

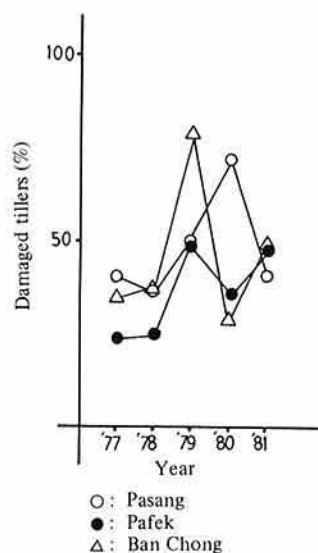


Fig. 3. Annual fluctuation of percentage of damaged tillers caused by the rice gall midge in highly damaged areas.

determine the severity of the damage by the insect in the wet season rice.³⁾ Investigation on the annual fluctuation of the insect incidence

has to be continued from that point of view, as a basic study of forecasting method and control measures of the insect. The writers express thanks to Dr. Tanongchit Wongsiri, Deputy Director, Department of Agriculture, and Mr. Prakob Leumsaeng, Chief of Rice Pest Branch, Entomology and Zoology Division, Department of Agriculture, for valuable suggestions given in course of the present study. Thanks are also due to Mr. Chumnong Pulsawasdi, Chief of Phan Rice Experiment Station, for his kind cooperation.

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