

Jinrapa Phothikasikorn 2006: Impacts of Agricultural and Public Health
Insecticides on *Anopheles minimus* species complex, Vectors of Malaria in
Western Thailand. Doctor of Philosophy (Entomology), Major Field: Entomology,
Department of Entomology. Thesis Advisor: Associate Professor Chitapa Ketavan,
Docteur d'Universite (Hons). 129 pages.
ISBN 974-16-2967-2

The findings of this study indicated the strong association between
malaria transmission and ethnic groups. There were at least six ethnic groups that are
highly migratory due to the occupation activities in Thong Pha Phum and Sai Yok Districts
of Kanchanaburi Province. Of 232 respondents interviewed, 202 knew the malaria disease.
Under the same group of respondents, 102 are at risk of malaria during the epidemic period
of dry season.

Insecticide usage in the six villages was surveyed. Bong Ti Noy Village
(BTN), Sai Yok District was the highest pesticides used area whereas Mae Num Noy
Village (MNN), Thong Pha Phum District was the lowest pesticides used area. There were
significantly lower in mosquito density in the high-pesticide location (BTN) compared to
the low-pesticide location (MNN) during the entire study period ($P < 0.05$).

There is one prominent biting peak of *Anopheles minimus* (2100-2300 hrs)
from both MNN and BTN. The average larval density fluctuated in two selected villages
throughout the year with highest density in cool season. In addition, behavioural responded
of two wild caught populations on *An. minimus* species A and C to operational field doses of
three agricultural compounds, carbaryl, malathion and cypermethrin, and three public health
chemicals, DDT, deltamethrin, and lambda-cyhalothrin were characterized using excito-
repellency test system and conclude that contact irritancy and non-contact repellency was
present in both test populations across all six chemicals.


Student's signature


Thesis Advisor's signature

13 Oct 2006