

Pisit Poolprasert 2007: Population Studies of the *Anopheles minimus* Complex, Vector of Malaria in Thailand: Genetics and Behavioral Aspects. Master of Science (Entomology), Major Field: Entomology, Department of Entomology. Thesis Advisor: Associate Professor Pongthep Akkratanakul, Ph.D. 65 pages.

Six-field populations of *Anopheles minimus s.l.* from Kanchanaburi Province were compared using isozyme starch gel electrophoresis to study the gene flow rate between and among populations. From eight enzyme systems, 9 loci with 6 polymorphism were detected. Small levels of genetic differentiation were observed when all populations were compared ($F_{ST} = 0.053$). The highest percent polymorphic loci were recorded in Bong Ti Noi, whilst the lowest was in Tha Kradan. Gene flow among the six local populations varied from 4.30 to 62.25 reproductive migrants per generation. However, overall gene flow migration was only 4.47 when all populations were studied. Isolation by distance among all populations showed no correlation between genetic and geographical distance ($P > 0.05$).

Additionally, an investigation of the house entering behavior of *An. minimus s.l.* into the experimental huts was performed using human landing collection method. High proportion of *An. minimus s.l.* entered the huts was found shortly after sunset and continued throughout the night with an obvious peak during 1900-2100 hr. Additional trials were conducted after huts were sprayed either with DDT and deltamethrin. Comparative results showed DDT had even more powerful repellency effect over deltamethrin.

Student's signature

Thesis Advisor's signature

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