INFECTION AND TRANSMISSION OF THE DENSOVIRUS IN *ANOPHELES MINIMUS* IN RELATION TO LOCAL DISTRIBUTION IN KANCHANABURI PROVINCE, THAILAND.

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This study investigated the temporal and spatial occurrence of natural densovirus infection in *Anopheles minimus* mosquitoes. Densoviruses are linear single-stranded DNA viruses belonging to the family Parvoviridae, and are believed to be widespread insect pathogens. In addition, oral infectivity and efficiency of transovarial transmission was examined in the laboratory, as well as the pathogenicity of a newly-identified Thai mosquito densovirus strain for *Anopheles minimus* mosquitoes.

A total of 7,950 adult mosquitoes were obtained over a period of one year from the three human-biting collection sites (indoor, peridomestic, and forest), and one cow-baited trap site. Of these, 989 adult mosquitoes were PCR-tested for the presence of densovirus. Infection frequency varied significantly between collection sites and between months. Average infection frequency at each site ranged from 2.5% to 15.0%. A total of 455 *An. minimus* larvae were collected from four different collection sites, of which 173 were PCR-tested for densovirus infection. The frequency of larval densovirus infection varied significantly between months and between sites. Average infection frequency at each site ranged from 36.2% to 12.5%.

In laboratory experiments, two viral concentrations (low and high) were used to orally infect first-instar *An. minimus* larvae. Mortality did not differ significantly between larvae reared under low-virus concentrations and non-infected controls. However, mortality increased substantially under high viral concentrations, compared to that of both uninfected controls and low virus conditions. Infection rates in F_1 progeny of infected females ranged from 25% to 53%. Determination of the effect of densovirus infection on fecundity revealed no significant difference between infected and control females.