

**MORPHOLOGICAL VARIATIONS FOR SUSCEPTIBILITY AND
TRANSOVARIAL TRANSMISSION OF DENGUE VIRUS
IN *Aedes Aegypti***

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ABSTRACT

The morphological variations of *Aedes aegypti* were studied in 16 localities of Thailand by examination of newly emerged adults obtained from field larval collection. The variations were sorted into dark and pale forms of which the former was more widely distributed than the latter. To determine their susceptibility to oral infection with dengue type 2 virus (DEN-2), wild caught mosquitoes (Chiang Rai and Satun strains) were selected into distinct dark and pale forms and subsequently were fed on virus-erythrocytes-sugar solutions by artificial membrane feeding. It was found that the pale form was significantly more susceptible than the dark form of *Ae. aegypti*. The infected mosquitoes of both forms were also further determined for transovarial transmission of DEN-2 by tracing descendants of the individual infected females through to the third generation (F1-F3). Results of filial infection rates (FIR) of both forms revealed that the overall FIRs of each generation gradually declined with subsequent generations. In addition, the FIRs to DEN-2 in each subsequent generation of both forms were similar. The present study suggests that the pale form may be a more important vector of dengue virus than the dark form, especially in some areas where the pale form has higher density. However, both forms of *Ae. aegypti* mosquitoes could play an important role in the maintenance of dengue virus in nature through vertical transmission.