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STUDIES ON SUSCEPTIBILITY AND TRANSOVARIAL TRANSMISSION  
OF DENGUE VIRUS TYPE 2 IN AEDES AEGYPTI  
MOSQUITO STRAINS COLLECTED IN THAILAND

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## SUMMARY

Four colonized strains of Aedes aegypti mosquitoes from Ubol, Chiangmai, Yala, and Bangkok provinces of Thailand were evaluated for their susceptibilities to infections with dengue serotype 2 (DEN-2) virus by intrathoracic inoculation and by feeding on hanging drops of virus-blood-glucose mixture as well as for their ability to transovarially transmit DEN-2 virus to their progenies after intrathoracic inoculation. The infection rates of mosquitoes were determined by plaque assay, frozen section and brain smear techniques. The last technique was modified from the well-known head squash technique. All mosquito strains were uniformly susceptible to intrathoracic inoculation, but statistically significant differences in susceptibility to oral infection were observed between Bangkok and other three strains of mosquitoes employed. Infection and dissemination of virus in mosquitoes after oral infection were traced by fluorescent antibody staining of mosquito thin section and the infection rates of the internal organs of the four geographic strains of mosquitoes were evaluated. It appeared that A. aegypti mosquitoes have multiple anatomical barriers against DEN-2 virus invasion. Transovarial transmission (TOT) of DEN-2 virus were demonstrated in Ubol and Bangkok strains A. aegypti mosquitoes after intrathoracic inoculation of the parent females. The minimal filial infection rates were rather low, ranging from 1:3,866 - 1:6,566. Infected progeny of

both sexes were detected in the first and the second ovarian cycles. The Chiangmai and Yala A. aegypti strains gave no positive result. The role of TOT in maintenance of dengue virus in the nature during interepidemic period in Thailand was discussed.



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