

## **HUMAN BLOOD FEEDING PATTERNS OF THE DENGUE VECTOR, *Aedes Aegypti***

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Feeding patterns of the dengue vector, *Aedes aegypti* for individual human hosts were examined from Thai villages during high and low dengue transmission seasons from February 2000 to January 2003. We used PCR-based profiling of human DNA in mosquito blood meals. Aspiration collections were conducted inside homes in four Thai villages near Mae Sot, Thailand. Human microsatellite markers were amplified at six polymorphic loci and one region of the human x and y-chromosomes. A computer-matching program was employed to match human DNA fingerprints in mosquito blood meals to profiles of community resident volunteers and field crew members. The person(s) who were fed on and the frequency of feeding from different people were determined. Feeding frequency across human host age classes was analyzed after correcting for population age structure. Controlled time-series experiments with one and multiple hosts were conducted to identify the limits of DNA detection using this approach. The frequency of alleles in the human host population was also determined to identify rare alleles that would be useful in matching partial DNA profiles. Results over multiple years, dengue transmission seasons and villages will be presented.

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## **IDENTIFICATION OF LARVAL *ANOPHELES* MOSQUITO HABITATS USING GIS AND REMOTE SENSING IN SOUTH KOREA**

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This entomological study was made during July to September 2003 in malaria-endemic of Ganghwa Island and Paju City, South Korea. The aims of this study are to use RS/GIS to examine the temporal and geographic distribution of adult *Anopheles* mosquitoes to determine whether there is a link between adult mosquito distribution and location of larval habitats and to identify larval habitats that produce key vector species in order to target the control efforts. We mapped out breeding habitats and patients addresses of both areas using Global Positioning System (GPS). Adult and larval mosquito sampling was conducted throughout the two areas, and mosquito distribution and abundance mapped. Four species (*An. sinensis*, *An. lesteri*, *An. pullus*, and *An. sineroides*) that were frequently collected from light traps were also abundant as larvae. The GIS databases were used to quantify spatial and temporal relationships between larval habitats and characterization of adult mosquito density in the associated villages. High spatial resolution satellite data (LANDSAT and QuickBird) are used to provide up-to-date baseline mapping of recent or temporary development activities such as irrigation schemes, forest