

RISK FACTORS FOR MALARIA INFECTION AMONG RUBBER TAPPERS LIVING IN A MALARIA CONTROL PROGRAM AREA IN SOUTHERN THAILAND

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Abstract. Rubber tappers work begins at midnight during the feeding time of *Anopheles maculatus* and *An. minimus*, two common malaria vectors in southern Thailand. We studied the association between rubber tapper behavior and malaria infections as reported to the Notified Disease Surveillance System during 2010 in Prachuab Khiri Khan Province, Thailand. In that province insecticide treated bednets are distributed free to the population and insecticide residual spraying is performed annually. A random sample of 394 rubber tapper households was interviewed from October 2010 to May 2011. Twenty-six households (6.6%) had at least one family member who contracted malaria during 2010. Poisson regression was used to identify potential characteristics associated with malaria. Multilevel Poisson regression was used to test for simultaneous effects of tapper behavior and household risk for malaria infection. The estimated incidence rate ratio (IRR) for contracting malaria among those owning a farming hut was 2.9 (95% CI 1.1-7.3, $p < 0.05$) after controlling for other variables. Even in areas where control programs are in place, malaria infection among rubber tappers is common. Given the Thai Government's plan to expand the rubber plantation areas to other regions of the country without specific prevention for this at-risk population, the malaria burden in Thailand may increase.

Keywords: rubber plantation, malaria, risk, insecticide-treated net (ITN), long-lasting insecticidal net (LLIN), farming hut, Thailand

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