POPULATION DYNAMICS OF ADULT MOSQUITOES (DIPTERA: CULICIDAE) IN MALARIA ENDEMIC VILLAGES OF KUALA LIPIS, PAHANG, MALAYSIA

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Abstract. Mosquitoes in malaria endemic areas needs to be monitored constantly in order to detect demographic changes that could affect control measures. A 12-month mosquito population survey was conducted in several malaria endemic areas in Pos Lenjang, Kuala Lipis, Pahang, Malaysia. Collection of mosquitoes using a human landing catch technique was carried out indoors and outdoors for 12 hours from 7:00 pm to 7:00 am for 42 nights. Anopheles maculatus Theobald (31.0%), Armigeres flavus Leicester (11.3%), Armigeres annulitarsis Leicester (11.0%), Culex sitiens Theobald (9.6%) and Aedes albopictus Skuse (7.0%) were the predominant species caught in the study area. The salivary gland and midgut of all anopheline mosquitoes were dissected to determine the presence of malaria parasites but none were positive. A high rate of human biting by An. maculatus was detected during December, but the rate was lower in January. Mosquito larvae were carried by the rapid current of the river downstream causing a decrease in the larva population. Of the five predominant species, only Ar. annulitarsis exhibited a significant positive correlation in numbers with monthly rainfall (p<0.05). An. maculatus biting activity peaked during 10:00 pm to 11:00 pm. Ae. albopictus, Ar. annulitarsis, and Ar. flavus exhibited similar activities which peaked during 7:00 pm to 8:00 pm.

Keywords: adult mosquito, population dynamic, malaria endemic villages, Malaysia

INTRODUCTION

Malaria remains the most significant vector-borne parasitic disease in the tropical and subtropical world (Sungsit et al, 2006), including Malaysia, even though

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Vol 42 No. 2 March 2011 malaria control activities over the past few decades have greatly reduced the incidence of malaria (MOH, 1994). Malaria is a disease caused by protozoa and transmitted by the bite of infective mosquitoes (Sadonsham and Thomas, 1965). Anopheles maculatus is the principal vector of human malaria in Peninsular Malaysia (Reid, 1968). The Malaria Eradication Program (MEP) was launched in Malaysia in 1969. In 1980, the MEP objectives were modified to a more realistic approach towards controlling the disease, known as the Malaria