A-08 Seasonal abundance, parasite carriage and insecticide resistance in two anopheline vectors of malaria

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Seasonal abundance, parasite carriage and insecticide resistance of *Anopheles culicifacies* and *An. subpictus* were investigated in Galewela, Matale district, from August 1995 to May 1996 to rationalise effective insecticidal control measures.

Bimonthly collection (using bovid-baited trap huts and indoor-resting), yielded 170 *An.culicifacies* and 568 *An.subpictus* mosquitoes.

Peak abundance periods were: *An. subpictus*-December 1995 and *An. culicifacies* - February 1996. The head-thoraces tested using ELISA indicated the presence of *Plasmodium vivax* sporozoite antigens. (*An. culicifacies* 1/170, *An. subpictus* 3/568). The blood meals of fed mosquitoes contained human immunoglobins. A house to house (n=60) survey within the study site revealed 7 *P.vivax* and 1 *P.falciparum* cases of malaria during the study period.

Resistance levels were tested for 3 insecticides belonging to 3 major insecticide groups: organophosphate - malathion, carbamate -propoxur and pyrethroid - permethrin. 326 *An. culicifacies* and 205 *An. subpictus* adult mosquitoes were tested for bioassays. Adult mosquitoes were exposed to different dosages of insecticides and log probit-dosage mortality curves were obtained, WHO discriminating dosages were used to evaluate the resistance. Results suggest that *An. culicifacies* population is homogeneous and 100% resistant for malathion and permethrin, heterogeneous and about 70% resistant for propoxur. *An. subpictus* population is heterogeneous and about 70% resistant for malathion and permethrin, homogeneous and less resistant for propoxur.

The results show that both vectors are important in the transmission of malaria within the study site. *An. culicifacies* population is more resistant than *An. subpictus* population for all 3 insecticide groups. Carbamates would be a better alternative in malaria vector control programmes.

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