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POSTER

## **Resting behavior of malaria vectors in Mannar District of Sri Lanka with reference to zooprophyllaxis**

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### **Background:**

The most important factors for effective zooprophyllaxis in reducing malaria transmission are the presence of predominate populations of a strongly zoophilic mosquitoes and domestic animals for their blood-meal.

### **Methods:**

Resting behavior of anopheline mosquitoes was evaluated using indoor and outdoor mosquito collection techniques. Mosquitoes were captured using 389 outdoor cattle-baited traps and indoor hand catches in 5672 houses at 12 possible malaria sensitive areas situated 12 km apart; Pesali, Keeri, Erukkallampeddi, Moor, Vankalai, Narawallikulam, Vanchiyankulam, Arvanum, Arrippu, Kokkupadayan, Koolankulam and Pandaraveilli for 12 months (June 2012 to June 2013) on a weekly basis. These areas had mostly homogenous characteristics in vegetations and house type. All collected mosquitoes were identified using standard taxonomic keys. A hypothesis test was conducted to determine whether there is a difference between indoor and outdoor collections.

### **Results:**

A total of 3986 anopheline mosquitoes were collected from both indoor (n= 3122) and outdoor (n= 864) collection techniques. *Anopheles subpictus* was found to account for over 97.5% (n= 3887) of *Anopheles* species collected in the study areas. Other species were; 1.4% *An. peditaeniatus* (n= 57), 0.6% *An. varuna* (n= 22), 0.3% *An. pallidus* (n= 10), 0.2% *An. nigerrimus* (n= 7), 0.05% *An. tessellatus* (n= 2), and 0.03% *An. aconitus* (n= 1). Only 3 species namely, *An.*

*subpictus* (n= 485), *An. tessellatus* (n= 2) and *An. aconitus* (n= 1) were recorded from indoor hand catches. In experimental cattle-baited hut trials, *An. subpictus* (n= 3026) was found to have the highest exophilic tendency (96.9%) compared to other anophelines encountered. The hypothesis test suggests that there was a significant difference of *An. subpictus* attracted to cattle-baited traps and human dwellings ( $P = 0.008$ ). Although the main vector *An. culicifacies* was absent, the presence of the secondary vector *An. subpictus* was observed in high numbers in the District.

### **Conclusion:**

Exophilic and zoophilic tendencies of *An. subpictus* are conducive for zooprophyllaxis. The study further indicates that zooprophyllaxis may be a potential strategy for malaria control. It is recommended that in areas with a predominant *An. subpictus* population, cattle could be kept close to human dwellings to maximize the effects of zooprophyllaxis.

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