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POSTER

Blood-feeding Patterns of *Anopheles* Mosquitoes in Malaria-endemic Areas of Sri Lanka

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Background: Studies on host preference patterns in blood-feeding of anopheline mosquitoes are crucial for incriminating them as malaria vectors. However, little information is available on the host preferences of *Anopheles* mosquitoes in Sri Lanka. Therefore, the objective of the present study was to determine the hematophagic tendency of the anophelines.

Methods: Adult *Anopheles* mosquitoes were collected using Cattle Baited Trap Collection (CBTC), Cattle Baited Net Collection (CBNC), Window Trap Collection (WTC), and Hand Collection (HC) from selected sentinel sites in Mannar (3) and Trincomalee (5) Districts during June 2011- June 2012. Each blood fed mosquito was processed in to 9 cm whatman filter papers within 24 hours after blood meal has taken. DNA was extracted using the dried blood meal protocol of the QIAmp DNA mini kit.

A multiplexed, Real Time Polymerase Reaction (RT- PCR) assay targeting 8 animals was developed for two panels (Panel 1: Bovine, cat, pig, monkey; Panel 2: Human, rat, dog, chicken) to identify the host meal of *Anopheles*. Human Blood Index (HBI), Forage Ratio (FR) and Host Feeding Index (HFI) were calculated.

Results: A total of 216 field caught freshly engorged females mosquitoes belonging to 12 *Anopheles* species was analyzed. The host preference of anophelines observed in this study was bovine (86.17%), human (1.84%), cat (0.46%) and pig (0.46%). Only 6.91 % was positive for both human and bovine. In addition 5.0 % of the total samples tested were unknown.

The overall HBI and HFI in the present study were low indicating the humans were not the preferred host for the tested anopheline species. Nevertheless, a small proportion engorged *An. aconitus* (0.37), *An. culicifacies* (0.27), *An. barbirostris* (0.2), *An. annularis* (0.125) and *An. subpictus* (0.12), *An. peditaeniatus* (0.08), *An. pseudojamesi* (0.04) and *An. barbumbrosus* (0.04) contained human blood, The FRs for human were <1.0 for most of the *anophelines*, except *An. aconitus* (1.04).

Conclusion: The presence of human blood, in mosquito species indicates the possibility of them transmitting malaria. Hence, further studies on vector competence are needed to determine the role of each of the above anopheline species currently as efficient vectors of malaria.

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