

OP 07 - Is the affinity of sandflies to human blood increasing?

R. W. C. K. Kumarasiri^{1*}, S. A. S. C. Senanayaka², M. R. F. Siraj², D. S. Shantha²,

B. G. D. N. K. De Silva³, N. D. Karunaweera²

¹Post Graduate Institute of Medicine, University of Colombo, Sri Lanka

²Department of Parasitology, Faculty of Medicine, University of Colombo, Sri Lanka

³Department of Zoology, Faculty of Applied Sciences, University of Sri Jayawardanapura

Introduction: There is contradictory evidence as to the biting preference of sand flies though they are considered zoophilic in the past. A change in the feeding preference of sand flies may be an outcome of its increasing affinity to human blood. Cutaneous leishmaniasis (CL) cases in Sri Lanka has been rising since 2001, affecting all 25 districts at present. Molecular-based identification of host blood meal contents was done to determine the feeding preference, as part of the first vector-based island-wide study, conducted to understand the changing trends in bionomics among Sri Lankan sand-flies.

Methodology: The blood-fed female sandflies were collected by using the CD miniature light traps, within the human habitats in ten selected sites covering all provinces. Conventional PCR was done targeting the cytochrome b (CYTB) gene on 270 sandfly DNA extractions. The extracts of the positive PCR amplicons were used for molecular identification of the sandflies by two PCRs targeting the COI and CYTB genes. The sequences were obtained for all the positive amplicons of the three PCR protocols. The edited sequences were compared with reference sequences available in GenBank-NCBI for their identities.

Results: PCR-based identification of the blood meal was successful in 210 samples, 153 were *Phlebotomus argentipes* fed on human (86%) followed by cattle (10%) and minute numbers on other animals (dogs, rats and mongoose), 57 were *Sergentomyia spp* fed on human (99%) and Lizard (1%).

Conclusion: The anthropophilic nature of the *P. argentipes* and *Sergentomyia spp* in Sri Lanka is demonstrated in an environment where other hosts were also available. The probable changing affinity of the sandflies to human blood indicates the importance of further entomological studies.

Keywords: Sandfly, affinity to human blood, blood-meal, feeding preferences

*Email: rwckalpani@gmail.com