

ENTOMOLOGICAL INVESTIGATIONS ON MALARIA VECTOR STUDIES IN EARLIER CONFLICT AREAS OF SRI LANKA AFTER 30 YEARS

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Entomological investigations on the abundance of malaria vector mosquitoes have not been studied in northern and eastern parts of the Sri Lanka over the past 30 years due to the separatist war. The main aim of this study was to explore diversity and abundance of *Anopheles* mosquitoes in earlier conflict areas in Sri Lanka.

Monthly entomological monitoring was carried out at 60 possible malaria sensitive localities situated approximately 12 km apart in 15 selected sentinel sites in Ampara (4), Batticaloa (3), Mannar (3) and Trincomalee (5) districts for 32 months (June 2010 to August 2013). Adult mosquitoes were collected by WHO recommended techniques.

Out of 701,356 anophelines collected, *An. culicifacies* was noted only in Ampara, Batticaloa and Trincomalee Districts. Although the main vector *An. culicifacies* (n= 1,876) was low in numbers, the presence of secondary vectors including *An. subpictus* (n= 205,594) were high in these areas. *An. nigerrimus* (n= 227,057), *An. barbirostris* (n= 35,150), *An. vagus* (n= 21,161), *An. pallidus* (n= 17,403), *An. annularis* (n= 4,882), *An. varuna* (n= 3151), *An. tessellatus* (n= 718) and *An. aconitus* (n= 591) were the other species reported. There was a change in breeding habitats of *An. culicifacies* and *An. subpictus*. They were found more conducive to breeding in built wells, brackish water habitats and waste water collections which were below 3 mg/l of dissolved oxygen (2.85 ± 0.03). These results indicate that particularly *An. culicifacies* has adapted to breed in wide range of water bodies including waste water collections although they were earlier considered to breed in clean and clear water with high dissolved oxygen. The adaptation of the major and subsidiary vector mosquitoes to widespread water bodies (along with increase in imported cases) could be a potential factor for the increase in the incidence of malaria in the future even though reported cases are low at present. Further, entomological surveillance detected the presence of *An. jeyporiensis* from the country after 106 years. Hence, more classical entomological studies are required to describe species currently found in the country; revision of morphological identification keys is a step in this direction.

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