

A-21: The impact of vector control measures on the indoor resting density of Anophelines in hamlets of Lunugamvehera Irrigation Scheme

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Though *Anopheles culicifacies* is the most efficient and the principal vector of malaria in Sri Lanka, *An. subpictus* and *An. annularis* have also been observed to act as secondary vectors. Indoor residual spraying against the vector continues to be the major strategy for malaria control. However there are setbacks due to several operational problems. Development of insecticide resistance is a major problem.

This study was carried out in 3 hamlets numbered 2, 3 and 5 of Lunugamvehera Irrigation Scheme during 1992 – 1993. All houses in hamlet 2 were under indoor residual application with Malathion 50% W.D.P. at 2 g/m² 3 monthly. Households of hamlet 3 were supplied with permethrin impregnated bed nets at a dosage 0.25g/m² and re-treated 6 monthly. Both control measures were implemented in hamlet 5. Vector prevalence was monitored using bovid-baited net trap collections. The indoor resting density of anophelines was monitored by pyrethrum spray collections in a sample of houses in each hamlet. Susceptibility level of *An. culicifacies* for both malathion and permethrin was also tested.

Indoor resting densities of *An. culicifacies* recorded from hamlet 2, 3 and 5 during the study period were 8.17, 11.72 and 2.09 respectively and significantly different at 5% level ($t^2= 6.468$ d.f =2). Though indoor resting densities of *An.subpictus* were 245, 253, and 204 in hamlet 2, 3 and 5 respectively it was not significantly different.

As walls and under surfaces form the preferred resting places of *An. culicifacies*, the use of permethrin impregnated bed nets alone would not have a greater impact on them. Therefore permethrin impregnated bed nets can be used as a supplementary control measure with an indoor residual insecticide for better control of *An. culicifacies*. The lethal action of permethrin on malathion resistant vector mosquitoes would also retard a build-up of vector resistance to malathion.