

INTERVENTION MODELS OF MOSQUITOE LARVAL HABITATS AND THEIR IMPACTS ON MALARIA TRANSMISSION. A CASE STUDY

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ABSTRACT

The focus of contemporary malaria control efforts has been shifted from environmental management to reliance on drugs and insecticides. As a supplement to treated nets and prompt access to treatment, measures targeted against the larval stage of malaria vectors are promising strategies for urban areas. The study tested three scenarios of larval interventions with empirical data and examined the impacts of these scenarios of larval interventions on parasitological indicators of malaria transmission.

Data was collected on ecological parameters; mosquito larvae density and geographic location for each site. Sampling techniques were used to select the *Anopheles* habitats for three scenarios of larval control. To specify our model, the total productivity parameter was constructed by gathering empirical data on the contribution of various types of larval habitats, to represent the population of emerging female mosquitoes.

126 breeding sites were examined. We demonstrate that larval interventions can effectively and efficiently reduce the entomological inoculation rates and incidence of malaria in urban areas of Africa. We further show that larval interventions are but one tool and when used with other interventions such as bed nets, can significantly improve efficacy and cost-effectiveness.

Finally, we state that targeted intervention itself is a strategy and that its inclusion in the vector control strategies can play a vital role in combating malaria in Africa.