

Prospects For Malaria Control Through Manipulation Of Mosquito Larval Habitats And Olfactory-Mediated Behavioural Responses Using Plant-Derived Compounds.(2017)

Jackson M Muema¹, Joel L Bargul¹, Sospeter N Njeru², **Joab O Onyango³, Susan S Imbahale⁴**

¹ Jomo Kenyatta University of Agriculture and Technology

² Kisii University

³ **Department of Chemical Science and Technology, Technical University of Kenya**

⁴ **Department of Applied and Technical Biology, Technical University of Kenya**

Abstract

Malaria presents an overwhelming public health challenge, particularly in sub-Saharan Africa where vector favourable conditions and poverty prevail, potentiating the disease burden. Behavioural variability of malaria vectors poses a great challenge to existing vector control programmes with insecticide resistance already acquired to nearly all available chemical compounds. Thus, approaches incorporating plant-derived compounds to manipulate semiochemical-mediated behaviours through disruption of mosquito olfactory sensory system have considerably gained interests to interrupt malaria transmission cycle. The combination of push-pull methods and larval control have the potential to reduce malaria vector populations, thus minimising the risk of contracting malaria especially in resource-constrained communities where access to synthetic insecticides is a challenge. In this review, we have compiled information regarding the current status of knowledge on manipulation of larval ecology and chemical-mediated behaviour of adult mosquitoes with plant-derived compounds for controlling mosquito populations. Further, an update on the current advancements in technologies to improve longevity and efficiency of these compounds for field applications has been provided.

Keywords

Malaria Vector control Anopheline mosquitoes Plant-derived compounds Larval habitat manipulation Mosquito functional ecology Integrated vector management

Parasites & Vectors Vol.10(1) pp184

See more at: <https://parasitesandvectors.biomedcentral.com/articles/10.1186/s13071-017-2122-8>