

II. Abstract

Malaria causes over half a million deaths annually, making it the most important vector-borne human disease. During the pre-DDT era, it was common practice to control mosquitoes by first understanding their ecology, but that research was abandoned after the development of broad spectrum insecticides. However, current control methods are losing efficacy due to the evolution of insecticide resistance and failing drug therapies, and new control methods are urgently needed. In light of these challenges, the importance of basic mosquito knowledge and impacts on infectious disease dynamics is finally being revisited. One of the most unexplored components of mosquito ecology is plant feeding. The weed *Parthenium hysterophorus* is of interest because it is very attractive to *Anopheles* mosquitoes and contains a compound similar to known antimalarial drugs. Therefore, it has been suggested that *P. hysterophorus* may augment vector control strategies by inhibiting malaria parasites within mosquitoes, however, this hypothesis has never been tested. The goal of this study is to determine whether a compound found in *P. hysterophorus* has antimalarial activity in *Anopheles* mosquitoes.