Larvicidal Activity of Clausena Anisata Fruits and Leaves Extracts against Anopheles Gambiae Giles S.S, Culex Quinquefasciatus Say and Aedes Egyptiae

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Abstract
Aim: The study aimed to evaluate larvicidal efficacy of Clausena anisata fruits and a leaf extracts against the 3rd instar Anopheles gambiae Giles s.s, Culex quinquefasciatus Say and Aedes egyptiae larvae.
Methods: The protocol developed by the World Health Organisation was adopted with minor modifications.
Results: The larvicidal activity study of Clausena anisata has revealed the selectivity of plant parts against the mosquito larvae. The leaf extracts displayed high potency against the 3rd instar Anopheles gambiae in which ethyl acetate leaf extract demonstrated high activity at LC50 of 0.0977 µg/mL followed by methanolic (LC50 0.9362 µg/mL) and chloroform (LC50 4.2384 µg/mL) extracts. The fruit ethyl acetate selectively exhibited the highest activity against A. egyptiae with LC50 of 5.3346 µg/mL. Culex quinquefasciatus larvae exhibited more resistance compared to A. gambiae and A. egyptiae larvae in which LC50 range of 78.658 – 178.895 µg/mL after 72 hours was displayed.
Conclusion: The leaves and fruits of C. anisata are potential source of botanical mosquito repellants and thus employed for the management of mosquito borne diseases. Leaves extracts selectively exhibited activity against A. gambiae indicating its potential use in the control of malaria. Fruits ethyl acetate extract had better activity against A. egyptiae larvae suggesting its use in the management of dengue fever, chikungunya and yellow fever viruses. It is apparently evident that C. anisata leaf extracts possess high potency against A. gambiae larvae compared to Bacillus Thuringiensis, subsp. Israeliensis (BTI®) which is the larvicidal product with high specificity against mosquito larva.

Key words
Larvicidal
Anopheles gambiae Giles s.s
Culex quinquefasciatus Say
Aedes egyptiae
Clausena anisata.