

Chemical Composition and Mosquito Larvicidal Properties of Essential Oil from Leaves of an Iranian Indigenous Plant *Zhumeria majdae*

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Abstract

The use of natural products derived from plants in mosquitoes control is an alternative method for minimizing the side effects of chemical pesticides on the environment. In the current study chemical composition of essential oil extracted from an indigenous plant, *Zhumeria majdae* was determined and identified by gas chromatography (GC) and GC-mass spectrometry (MS) analysis. In addition, the larvicidal activity of essential oil was evaluated against two important mosquito vectors, *Anopheles stephensi* and *Culex quinquefasciatus*. Thirty constituents, representing 97.86 % of the oil, were identified. The main constituents of the oil were camphor (38.84 %), linalool (31.18 %) and camphene (7.73 %). *Z. Majdae* volatile oil showed significant toxicity against larvae of both species. The LC50 and LC90 values against *An. stephensi* larvae were 61.34 and 135.81 ppm and for *Cx. quinquefasciatus* were 88.51 and 191.56 ppm after 24 hours, respectively. Our findings indicated that the essential oil from *Z. majdae* leaves may be explored as a potential mosquito bio-larvicide.

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