Evaluation of the Larvicidal Activity of Essential Oils from Some Plants on Culicidae Larvae (Diptera; Nematocera)

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Abstract:

The fourth instar larvae of *Culiseta longeareolata* were the subject of a toxicological study using the essential oils of Eucalyptus globulus and *Ocimum basilicum*. Different doses of 10%, 5%, 2.5%, 1.25% have been conducted in the laboratory on the L4 larval stages. These preliminary tests carried out according to a methodology inspired by the standard World Health Organization protocol revealed the significant evolution of mortality as a function of time and of the doses used for the two bio-pesticides. *Eucalyptus globulus* essential oil has remarkable larvicidal properties; it induces 90% mortality after 72 hours of treatment at a concentration of 10%. The DL50 and DL90 values against fourth instar larvae were 120 and 260 g/l for *Cs. longiareolata*. The results proved the potential use of this natural product as an alternative to synthetic insecticides for controlling mosquitoes.

Keywords:

Culisita longeareolata, formulated essential oils, *Eucalyptus globulus*, *Ocimum basilicum*, larva, mortality, toxicity test.