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Citrus-based essential oils could be used for dengue vector mosquitoes control

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Dear Editor:

The mosquitoes *Aedes aegypti* (L) and *Aedes albopictus* (Skuse) (Diptera : Culicidae) are important vectors of dengue fever in tropical and subtropical parts of the world. Chemical control has been considered as an effective tool for their management in different areas of the world. However, injudicious use of the chemicals result in environmental pollution, ill effects to humans and other animals, and the development of insecticide resistance, which ultimately limits the efficacy of many insecticides^[1]. Essential oils can be used for mosquito control with no harmful effects to the ecosystem and non-target organisms. Essentials oils from different plants have been found very effective against malarial and dengue mosquitoes. Currently, many researchers are trying to evaluate the potential of citrus-based oils against mosquitoes, mainly because of having terpenes. These terpenes have antifeedent and/or growth regulatory effect in mosquitoes besides their medicinal use^[2]. Citrus-based essential oils (Family Rutaceae) are very potent against dengue mosquito *Aedes albopictus*^[3–10]. The oils from citrus cultivars like *Citrus grandis*, *Citrus sinensis*, *Citrus paradisi*, *Citrus reticulata*, *Citrus limon*, *Citrus aurantium* have shown strong activity against *Aedes albopictus* under laboratory conditions^[3,5–10]. These oils have secondary metabolites, which are very helpful for the plants in deterring insect pests^[11]. In case of citrus oils, many researchers have also found limonoids being very active against mosquitoes^[3,12].

Citrus-based essential oils could be very helpful in the management of dengue fever mosquitoes; however, there is a need to evaluate their efficacy in field conditions.

Conflict of interest statement

We declare that we have no conflict of interest.

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