

A new potential alternative to mosquito control discovered

October 11 2017



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Natural essential oils extracted from the peel of a citrus fruit could be an effective new eco-friendly alternative in mosquitoes control programs, reports a new study published today in *Natural Product Research*.

The [essential oils](#) were extracted in large amounts from the peel of a fruit similar to an orange, which is available throughout many countries

in the world. With such ease of access and productions of the oils, it could potentially be used in areas which have little or no access to an alternative.

Believed to be the first ever example of such an experiment, it was found that the essential oils were highly effective in mosquitocidal activity on the larvae, leading researchers to conclude it could be used as an eco-friendly alternative in mosquitoes control programs.

To extract the three essential oils, *Citrus reticulata* L., *C. reticulata chinase* Blanco and *C. sinensis* Osbeck, 100 g of the air-dried peels of three citrus species were cut into small pieces and then hydro distilled. Researchers from the Department of Pesticide Chemistry and Technology and the Department of Tropical Health at Alexandria University in Egypt then conducted bioassay and biochemical experiments with controls on the larvae of mosquitos to ascertain the effectiveness of the essential oils in mosquitocidal activity.

Dr. Mohamed E. I. Badawy, lead author and professor at the Department of Pesticide Chemistry and Technology at Alexandria University in Egypt commented "This study, which we believe to be the first of its kind, shows that the essential oils from the peels of citrus plants were very effective against larvae and adults. This means there could be a natural and hugely accessible product available which could be used as a method of mosquito control."

With [mosquitoes](#) being responsible for the transmission of many diseases to humans and animals in the world due to rapid urbanization and poor water management, the potential for an easily accessible and non-toxic mosquito control program is much needed. However, it would be beneficial and necessary to complete further research into the area in order to further clarify the effectiveness of the essential oils used and the results of this study.

More information: Mohamed E. I. Badawy et al, Chemical composition of the essential oils isolated from peel of three citrus species and their mosquitocidal activity against *Culex pipiens*, *Natural Product Research* (2017). [DOI: 10.1080/14786419.2017.1378216](https://doi.org/10.1080/14786419.2017.1378216)

Provided by Taylor & Francis

Citation: A new potential alternative to mosquito control discovered (2017, October 11) retrieved 23 April 2024 from <https://phys.org/news/2017-10-potential-alternative-mosquito.html>

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