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Mosquitocidal and larvicidal activities of *Piper betel* essential oil

Malaria, Dengue and Filaria are mosquito-borne infections, which have become major international public heath concerns. WHO has estimated that 300-500 million cases of malaria occur annually killing more than 1 million people.

Essential oil hydrodistilled from *Piper betel* was tested for activity against mosquito species using two bioassay. The WHO standard method for adult mosquito susceptibility test was performed against *Culex quinuefasciatus*, *Anopheles tessellates* and *Aedes aegypti* to determine it's knock-down and mortality effects.

Filter paper impregnated with 2 ml betel oil (2% v/V) in ethanol was air dried and inserted into a chamber. 20 adult mosquitoes were put in to it and knocked down insects were counted, after 30 min. They were transferred to a non-treated chamber and after 24 h the number dead counted. 2% betel oil solution showed 100% knock-down and mortality against both *A. tessellates* and *A aegypti* while a 1% solution although weakly toxic to *A. tessellates*, was sufficient to cause 100% Knock-down and mortality against *C. quinaqufasciatus*.

The oil was also tested following WHO standard method for mosquito 3rd instar larvae against the larvae of *C. quinquefasciatus* and *A. tessellatus*. Betel oil solutions were introduced into beakers containing 25 larvae and % mortality at 1h, 3h, 20 h, 24 H, 48 calculated. 1% ethanol served as control.

125 ppm solution in ethanol showed 100% mortality against *A. tessellatus*. At 500 ppm it also showed 100% mortality and at 125 ppm, 98.67% mortality against *C. quinquefasciatus*. *P. betel* leaf oil has promising mosquitolarvicidal and mosquitocidal properties against the species tested.