

Chemical study, antioxidant analysis and evaluation of the larvicidal potential against *Aedes aegypti* larvae of essential oil of *Ocimum basilicum* Linn.

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The purpose of this research was to accomplish chemical study, antioxidant analysis and evaluation of the larvicidal potential against *Aedes aegypti* larvae of essential oil from the leaves of *O. basilicum* Linn. The research was carried out in the Pharmacognosy and Phytochemistry Laboratory, Department of Biological and Health Sciences, Federal University of Amapá (UNIFAP), between July 2013 and March 2014. Arthropoda Laboratory, Department of Biological and Health Sciences, Federal University of Amapá (UNIFAP) between September 2013 and March 2014. The essential oil was obtained by hydrodistillation; the identification and quantification of components was achieved with the use of GC-MS analysis. The antioxidant activity was evaluated by the method of sequestration of DPPH. The essential oil was tested in the third larval state of the development of the mosquito *Aedes aegypti*. The third larval instar were exposed to different concentrations of the oil (500, 400, 300, 200 and 130 ppm) in triplicates. Chromatographic

analysis identified that the major constituents found in essential oil of *O. basilicum* were limonene (13%), 1,8-cineole (15%), linalool (20%) and methyl chavicol (45%). In trials of free radicals sequestration, the essential oil showed (AA%) 67.35 ± 1.11 in the highest concentration and inhibitory concentration, IC₅₀ value of 61.517 mg/mL. The essential oil of *O. basilicum* showed larvicidal potential with CL₅₀ of 67.22 ppm. A more detailed study should be done to verify the larvicidal potential and biological mechanism of action, as several authors claimed that the constituent of essential oils affect the nervous system of the mosquito *Aedes aegypti* and the action mechanism is not yet fully elucidated. New studies demand the development of tests using samples of lower concentrations to verify the degree of toxicity in other animal species, including man and preparation of formulations that may function as a natural alternative to combat mosquito larvae.