



Formulation of Tobacco Based Mosquito Repellent to Avoid Dengue Fever

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Abstract : Commercial mosquito repellents contain synthetic substances such as DEET (N, N-diethyl-3-methylbenzamide), DEPA (N, N-diethyl phenylacetamide), permethrin, and deltamethrin as active component, which can be absorbed to human body and cause some systemic poisoning. This research studies the potential of tobacco leaves based repellent which is not only safe for human but also environmentally friendly. Tobacco leaves were extracted using fast pyrolysis at 500°C. The condensed biooil was then made into biomass based repellent. The repellent was tested directly to human to evaluate the effects on the skin and the effectivity as a repellent. The active compounds of repellent found were nicotine, d-Limonene, indole, and pyridine. Nicotine was the highest substance from biooil at 31.1%; 16.7%; and 18.9%, respectively. Biooil was added to repellent mixture as active compound with different concentration (0%; 0.5%; 1.5%; and 3%, all in %wt). Repellent tested showed a desired result, where not only the repellent didn't take any side effect on human skin, the effectivity of each concentration was 38.7%; 45.8%; 46.4%; and 57.1%, respectively.

Keywords : Biooil; Mosquito Repellent; Pesticide; Tobacco Leaves.

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