ABSTRACT

Mosquitoes have a role in human life because it can be a major vector of a disease. One of them is the Aedes aegypti as the vector of dengue fever (Dengue Haemorrhagic Fever). Synthetic chemical insecticides are often used to avoid mosquito bites. The use of these insecticides can cause the vectors become resistant, and have a negative impact on the environment. Botanical insecticide is environmentally friendly and relatively does not cause resistance. Patchouli (Pogostemon cablin Benth) is one type of essential oils plant which can be used as an insecticide. Given its benefits as controlling insect populations, the patchouli oil has a good prospect to be developed as one of insecticide raw materials. This study aims to obtain anti-mosquito spray formula with patchouli oil as active agent in accordance with the Indonesian National Standard (SNI). Factor that serve as the treatment is the type of solvent, using methanol and hexane solvent. Into the formula with the respective solvent concentrations of active ingredient applied different tests with three levels, namely 5%, 10%, and 20%. The result is 6 kinds of formula, namely: M5 (methanol solvent, patchouli oil concentration 5%), M10 (methanol solvent, patchouli oil concentration 10%), M20 (methanol solvent, patchouli oil concentration 20%), H5 (hexane solvent, patchouli oil concentration 5%), H10 (hexane solvent, patchouli oil concentration 10%), and H20 (hexane solvent, patchouli oil concentration 20%). The best formula of this research is M20 formula (methanol solvent, patchouli oil concentration 20%), with 5.04 of pH value, 0.95 g/ml of specific gravity, 99.84% of emulsion stability percentage, 0.97 ml of
foam formulation in the solution, and 78.48% of rejection effectiveness.

Keywords: anti-mosquito, spray, insecticide, patchouli oil

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