

**THE FORMULATION OF LIQUID BATH SOAP WITH HOT
METHOD BASED ON CITRONELLA OIL (*Cymbopogon
nardus*) AND ANTIBACTERIAL ACTIVITY TEST AGAINST
*Staphylococcus aureus***

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ABSTRACT

Citronella essential oil (*Cymbopogon nardus*) has an antibacterial activity. Chemical compound as an antibacterial in citronella essential oil are citronellal, geraniol, and citronellol. The purpose of this formulation was to determine combination of the best concentration to addition of citronella essential oils and surfactant *cocamidopropyl betaine*, to determine the characteristics and effectiveness of antibacterial liquid bath soap essential oils of citronella-based surfactant *cocamidopropyl betaine* against bacteria *staphylococcus aureus*. Shower gel was made of twenty-five formulas and a formula without the addition of citronella essential oil with varying concentrations were 1.5%-3.5% and variations concentration of surfactant *cocamidopropyl betaine* were 17.5%-27.5%. The Soaps were evaluated covered hedonic test, organoleptic, pH, viscosity, alkali-free as well as activity against bacteria *staphylococcus aureus*, Hedonic test results on a statistical analysis of *one-way* ANOVA. Hedonic test results showed that twenty-five formulas of liquid bath soap citronella essential oil taken the top five preferred respondents formulas was formula A3B5, A4B4, A5B3, A5B4 and A5B5 respectively. Based on one way ANOVA test showed no significant difference in terms of color, smell and shape ($\text{sig}(p) > 0.05$). The test results are non-alkaline pH and fifth formulas meet ISO standards. While the fifth viscosity test results do not meet the ISO standard formula. The whole formula liquid bath soap citronella essential oil (A3B5, A4B4, A5B3, A5B4 and A5B5) have antibacterial activity against *staphylococcus aureus*, where formula was the formula most A5B5 well as produce inhibition zone diameter highest of 14.6 mm.

Keywords : Liquid soap, citronella essential oil, *cocamidopropyl betaine*, antibacterial