

ABSTRACT

FORMULATION OF LIQUID SOAP EKSTRACT OF BETEL LEAF (*Piper betle* L) AND BILIMBI FRUIT (*Averrhoa bilimbi* L)

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Soap is an essential component in everyday life used by the general public as a cleaning agent. Green betel leaf (*Piper betle* Linn) and bilimbi fruit (*Averrhoa bilimbi* Linn) are medicinal and antiseptic plants. Scientific research indicates that both green betel leaf and bilimbi fruit have antibacterial properties due to their flavonoid, alkaloid, saponin, and tannin content. This study aims to develop a liquid soap formulation as an antiseptic and determine its efficacy.

The research utilized an experimental method. The extracts of green betel leaf (*Piper betle* Linn) and bilimbi fruit (*Averrhoa bilimbi* Linn) were formulated into liquid soap preparations with varying concentrations of 13%, 14%, and 15% of KOH. The physical characteristics of the liquid soap green betel leaf (*Piper betle* Linn) and bilimbi fruit (*Averrhoa bilimbi* Linn) preparations, including organoleptic evaluation, homogeneity test, pH test, foam height test, and density test, were examined. The data were analyzed using SPSS 25.

The data were analyzed theoretically and statistically using the Shapiro-Wilk test for data normality and the Levene Statistic for data homogeneity. Normal and homogeneous data were subjected to ANOVA, while normal but non-homogeneous data were analyzed using the Kruskal-Wallis test. Based on the characteristic test results, Formula I met the quality characteristics of liquid soap with a pH value of 10,2, foam height of 113,66mm, and density of 1.032 g/ml. Formula II did not meet the foam height requirements (132mm) and Formula III (182mm). Formula III did not meet the pH test requirements (7-10), with a value of 12.87.

keyword : antiseptic, liquid soap, green betel leaf extract, bilimbi fruit extract