

EFFECT OF CONCENTRATION AND MACERATION TIME OF NONI FRUIT (*Morinda citrifolia* L.) EXTRACT ON THE ANTIBACTERIAL ACTIVITY AGAINST *Staphylococcus aureus*

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ABSTRACT

Noni fruit (*Morinda citrifolia* L.) is a plant commonly used by the community as a traditional remedy for skin diseases. This fruit is known to contain bioactive compounds such as flavonoids, phenolics, and alkaloids. Flavonoids and alkaloid compounds are known to possess biological activities. Several studies have shown that noni fruit extract can inhibit the growth of *S. aureus*, however the minimum inhibitory concentration (MIC) of the extract against *S. aureus* has not been clearly determined. This study aimed to determine the effect of variations in concentration and maceration time of noni fruit extract on its antibacterial activity against *S. aureus* and to identify its minimum inhibitory concentration (MIC). This research was an experimental laboratory study. Extraction was carried out using the maceration method with 96% ethanol solvent for 24 hours and 72 hours, with extract concentrations of 40%, 60%, and 80%. Antibacterial activity was evaluated using the disc diffusion method on Mueller Hinton Agar (MHA) medium. The results of the ANOVA test showed that variations in extract concentration and maceration time on the inhibition zone diameter of noni fruit extract against the growth of *S. aureus* had a significance value of $p=0,481$ ($p>0.05$). At 24 hour maceration, inhibition zones of 2,25 mm and 1,75 mm were observed at concentrations of 60% and 80%, respectively, whereas the 72 hour maceration showed no antibacterial activity. It can be concluded that the antibacterial activity of noni fruit (*Morinda citrifolia* L.). The antibacterial effectiveness of noni fruit (*Morinda citrifolia* L.) extract against *S. aureus* was not significantly affected by variations in concentration and maceration time. The MIC was observed at the 24 hour maceration at a concentration of 60%.

Keywords: Antibacterial, Noni fruit, MIC, Maceration, *Staphylococcus aureus*