

# **Production of Beluntas Leaf (*Pluchea indica*) Nanoparticle Soap and Testing of Its Activity as an Antimicrobial**

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## **ABSTRACT**

Beluntas (*Pluchea indica*) is a native biological resource in Indonesia and is usually used as herbal medicine, but its potential as an antimicrobial agent in nanoparticle soap has not been tested. The aim of this research is to utilize beluntas leaves as a high-efficiency local product to be developed as nanoparticle soap in accordance with Indonesian National Standards (SNI) and test its activity as an antimicrobial.

Preparation of silver nanoparticles (AgNPs) was carried out by optimizing concentration, time and pH. Making solid bath soap is done by saponifying vegetable oil with NaOH using the cold process method. Making solid bath soap from beluntas leaves was done by adding methanol extract of beluntas leaves (soap A), silver nanoparticles of beluntas leaves (soap B), and soap without beluntas leaves as a comparison (soap C). Testing the quality of solid bath soap was carried out according to SNI 2016. Next, an antimicrobial activity test was carried out using several bacteria and fungi. The antimicrobial activity test was carried out using the Kirby-Bauer diffusion method.

The results showed that the phytochemicals of beluntas leaf extract contain flavonoids, saponins, tannins and alkaloids. All synthetic soaps meet the quality according to SNI and have antimicrobial activity in the strong category

Key words:

Kata Kunci: *beluntas, nanoparticles, antimicrobial, natural soap*