

ABSTRACT

Rizka Adinda Diva, 2402022112005. **Development of the Potential of Incorporating *Curcuma xanthorrhiza* Roxb. Extract and Bacterial Cellulose Hydrogel as Wound Dressings.** Under the guidance of Endang Kusdiyantini and Melbi Mahardika.

Java turmeric has been widely used throughout Indonesia as a herbal medicine to treat various diseases, such as stomach ailments, liver disorders, constipation, dysentery, diarrhea, fever in children, arthritis, hypotriglyceridemia, hemorrhoids, vaginal discharge, rheumatism, skin rashes, including bacterial infections. Bacterial cellulose (BC) is a structural carbohydrate consisting of linear glucan molecules bound by hydrogen bonds, which looks similar to plant cellulose, but with nano-sized polymer fibers. The purpose of this study was to determine the potential of 96% ethanol extract of java turmeric and bacterial cellulose hydrogel as wound dressings, to determine the compound content of 96% ethanol extract of java turmeric by thin layer chromatography, to provide an overview of the adsorption capacity of BC hydrogel, and to analyze the antibacterial activity of BC hydrogel-java turmeric extract against *Staphylococcus aureus*. The working method in this study includes the production of Nata de Coco as a raw material for bacterial cellulose hydrogel, extraction of java turmeric rhizome with 96% ethanol, incorporation of java turmeric extract into the hydrogel by soaking for 72 hours, identification of the java turmeric hydrogel-extract compound with FTIR, and antibacterial test of the java turmeric hydrogel-extract against *Staphylococcus aureus*. The results showed that curcumin was the compound identified in the thin layer chromatography (TLC) test results. Based on the FTIR results, the hydrogel was proven to be able to absorb 96% java turmeric ethanol extract well. About nine (9) peaks were found representing the curcumin and xanthorrhizol functional groups, the main compounds of java turmeric. The optimal antibacterial activity of the java turmeric hydrogel-extract was an extract concentration of 60%.

Kata kunci: Curcumin, FTIR, *Nata de Coco*, *Staphylococcus aureus*.