

**ABSTRACT****THE EFFECT OF CHITOSAN AND *Piper betle* L. LEAF EXTRACT CONCENTRATION ON CHARACTERISTICS AND WOUND HEALING ACTIVITY OF SPRAY GEL CHITOSAN *Piper betle* L. LEAF EXTRACT**

Laily Zuhroh

Chitosan is a polysaccharide consisting of glucosamine and N-acetylglucosamine which can be used as wound healing. *Piper betle* L. extract which has activity as antibacterial can be used to improve the effectiveness of chitosan as wound healing agent. The spray gel has benefit such as can reduce the pain when delivering the drug to the wound, cold sensation, and easy to cleaning after product application. The spray gel has a specific characteristic such as organoleptic, viscosity, pH, spreadability, and drying time. This study was to determine the addition of chitosan and *Piper betle* L. extract concentration against the physical characteristics and antimicrobial activity. The results showed that the addition of chitosan concentration can affect the spray gel characteristics, that increasing viscosity, but the pattern spreading and drying time was reduced. In the antimicrobial activity test using suspension test method, it showed that the addition of chitosan and *Piper betle* L. extract concentration are increasing antimicrobial activity. In the wound healing activity test, the results indicated that chitosan- *Piper betle* L. extract can significantly improve wound healing activity in burn wound rats compared to control group.

Keywords : chitosan, *Piper betle* L, spray gel, wound healing