

ABSTRAK

Fika Nuraini. 2026. Formulasi dan Uji Aktivitas Antibakteri Sediaan Film Kombinasi Ekstrak Kunyit (*Curcuma Longa* L.) dan Jintan Hitam (*Nigella Sativa* L.) Terhadap Bakteri *Acinetobacter Baumannii*. Skripsi. Program Studi Farmasi, FIKS, Universitas PGRI Madiun. Pembimbing (I) Dra. Arum Suprobrorini, M.Si., Pembimbing (II) Dr. Apt. Vevi Marita, M.Fram.

Infeksi kulit dan luka bakar yang disebabkan oleh *Acinetobacter baumannii* merupakan masalah kesehatan serius sehingga diperlukan pengembangan terapi alternatif. Kombinasi ekstrak kunyit (*Curcuma longa* L.) dan jintan hitam (*Nigella sativa* L.) berpotensi menjadi antibakteri alami. Penelitian ini bertujuan untuk mengembangkan dan mengevaluasi sediaan film kombinasi ekstrak kunyit (*Curcuma longa* L.) dan jintan hitam (*Nigella sativa* L.) sebagai alternatif terapi untuk infeksi kulit. Penelitian ini merupakan penelitian *experimental laboratory*, uji aktivitas antibakteri pada penelitian ini menggunakan metode difusi cakram yang terdiri dari F0 basis (tanpa ekstrak), F1 (kunyit 0,1% dan jintan hitam 0,2%), F2 (kunyit 0,2% dan jintan hitam 0,2%), dan F3 (kunyit 0,2% dan jintan hitam 0,1%). Data yang diperoleh dianalisis menggunakan SPSS dengan metode *one way* ANOVA. Hasil penelitian ini menunjukkan variasi konsentrasi ekstrak memengaruhi keseragaman bobot, nilai pH dan indeks swelling (kemampuan film dalam menyerap air) $p = < 0,05$. Sediaan film kombinasi ekstrak kunyit dan jintan hitam berhasil diformulasikan dengan karakteristik fisik yang memenuhi persyaratan serta memiliki aktivitas antibakteri terhadap *Acinetobacter baumannii*. Aktivitas antibakteri sediaan film terhadap *Acinetobacter baumanii* memiliki daya hambat namun masih dalam kategori lemah yaitu F0 (1,06 mm), F1 (2,11 mm), F2 (1,48 mm), dan F3 (1,41 mm). Analisis lanjutan menggunakan metode Tukey HSD menunjukkan tidak terdapat perbedaan signifikan antar formula F0, F1, F2 dan F3. Namun F1 menunjukkan diameter zona hambat paling besar diantara kelompok lain, meskipun aktivitas antibakterinya masih tergolong lemah sediaan film ini masih berpotensi sebagai kandidat terapi luka karena juga memiliki aktivitas antiinflamasi, antioksidan, serta mampu mendukung proses penyembuhan dan regenerasi jaringan.

Kata Kunci : Kunyit, Jintan Hitam, Formulasi sediaan Film, Karakteristik fisik sediaan film, Aktivitas antibakteri.

ABSTRACT

Fika Nuraini. 2026. Formulation and Antibacterial Activity Evaluation of Film Containing a Combination of Turmeric (*Curcuma longa* L.) and Black Cumin (*Nigella sativa* L.) Extracts Against *Acinetobacter baumannii*. Undergraduate Thesis. Pharmacy Study Program, Faculty of Health and Science (FIKS), Universitas PGRI Madiun. *Advisor* (I): Dra. Arum Suprobrorini, M.Si. *Co-Advisor* (II): Dr. Apt. Vevi Marita, M.Farm.

Skin infections and burn wounds caused by Acinetobacter baumannii represent a serious health problem, highlighting the need for the development of alternative therapeutic approaches. The combination of turmeric (Curcuma longa L.) and black cumin (Nigella sativa L.) extracts has potential as a natural antibacterial agent. This study aimed to develop and evaluate a film formulation containing a combination of turmeric (Curcuma longa L.) and black cumin (Nigella sativa L.) extracts as an alternative therapy for skin infections. This study aimed to develop and evaluate a film formulation containing a combination of turmeric (Curcuma longa L.) and black cumin (Nigella sativa L.) extracts as an alternative therapy for skin infections. This study employed an experimental laboratory research design, antibacterial activity was evaluated using the disk diffusion method with four formulations: F0 (film base without extracts), F1 (0.1% turmeric and 0.2% black cumin), F2 (0.2% turmeric and 0.2% black cumin), and F3 (0.2% turmeric and 0.1% black cumin). The obtained data were analyzed using SPSS with one-way analysis of variance (one-way ANOVA). The results demonstrated that variations in extract concentration significantly affected weight uniformity, pH value, and swelling index (the film's ability to absorb water) ($p < 0.05$). The combined turmeric and black cumin extract films were successfully formulated with physical characteristics that met the required standards and exhibited antibacterial activity against Acinetobacter baumannii. However, the antibacterial activity remained in the weak category, with inhibition zone diameters of 1.06 mm (F0), 2.11 mm (F1), 1.48 mm (F2), and 1.41 mm (F3). Further analysis using Tukey's Honestly Significant Difference (HSD) test revealed no statistically significant differences among formulations F0, F1, F2, and F3. Nevertheless, F1 produced the largest inhibition zone compared with the other formulations. Although its antibacterial activity was still classified as weak, this film formulation remains a promising candidate for wound therapy due to its additional anti-inflammatory and antioxidant properties, as well as its potential to support wound healing and tissue regeneration.

Keywords: Turmeric, Black Cumin, Film Dosage Form, Physical Characteristics of Film Dosage Form, Antibacterial Activity.