

## INTISARI

Luka bakar didefinisikan sebagai kerusakan jaringan akibat paparan atau kontak langsung dengan sumber panas. Kandungan senyawa flavonoid, triterpenoid, saponin, dan tanin dalam daun binahong (*Anredera cordifolia*) dan herba pegagan (*Centella asiatica*) diyakini memiliki aktivitas penyembuhan luka bakar. Penelitian ini bertujuan untuk mengoptimasi salep ekstrak daun binahong dan herba pegagan, serta mengetahui efektivitas penyembuhan terhadap luka bakar derajat II pada tikus putih (*Rattus norvegicus*) galur Wistar.

Diujikan salep dengan lima variasi konsentrasi untuk mengetahui konsentrasi optimum terhadap penutupan luka, yaitu salep binahong 2%, salep pegagan 2%, salep kombinasi binahong-pegagan 1:1, 1:2, dan 1:3. Efektivitas diketahui melalui persentase penutupan luka pada tikus. Formula optimum diperoleh melalui optimasi komposisi PEG 400 dan PEG 4000 menggunakan metode *Simplex Lattice Design* pada *Design Expert* versi 13. Formula optimum diverifikasi melalui evaluasi sifat fisik meliputi organoleptik, homogenitas, uji pH, uji viskositas, uji daya sebar, dan uji daya lekat. Stabilitas sediaan diketahui melalui uji stabilitas dipercepat selama empat minggu. Data penelitian akan dianalisis secara statistik.

Hasil penelitian menunjukkan salep binahong 2% memiliki efektivitas penutupan luka bakar terbaik. PEG 400 dan PEG 4000 sebagai komponen basis berpengaruh atas nilai pH, viskositas, daya lekat, dan daya sebar salep. Formula optimum dengan komposisi PEG 400 dan PEG 4000 sejumlah 71,6715 gram dan 10,7286 gram telah memenuhi syarat sediaan salep yang ditentukan dengan nilai viskositas 6614,69 cPoise, daya sebar 5,49 cm, dan daya lekat 4,46 detik. Uji stabilitas fisik dipercepat terhadap formula optimum menunjukkan adanya penurunan viskositas dan daya lekat, disertai peningkatan daya sebar sediaan yang dapat disebabkan oleh meningkatnya energi kinetik molekul fluida, sifat higroskopis PEG, dan perbedaan suhu pengujian. Hal ini menunjukkan bahwa lama penyimpanan berpengaruh terhadap sifat fisik sediaan.

**Kata kunci:** *Anredera cordifolia*, *Centella asiatica*, luka bakar, salep

## ABSTRACT

Burn is defined as damage or loss of tissue due to exposure or direct contact with a heat source. The flavonoid, triterpenoid, saponin, and tannin compounds in binahong (*Anredera cordifolia*) leaves and gotu kola (*Centella asiatica*) herbs are believed to have burn healing activity. This study aims to optimize the ointment of binahong leaf extract and *Centella asiatica* herb, and determine the effectiveness of healing against second-degree burns in white rats (*Rattus norvegicus*) Wistar strain.

The ointment was tested with five concentration variations to determine the optimum concentration for wound contraction, namely 2% binahong ointment, 2% gotu kola ointment, madeira-vine and gotu kola combination ointment 1:1, 1:2, and 1:3. Effectiveness is known through the percentage of wound contraction in white mouse. The optimum formula was obtained through optimization of the composition of PEG 400 and PEG 4000 using the *Simplex Lattice Design* method on *Design Expert* version 13. The optimum formula was verified through evaluation of physical properties including organoleptic, homogeneity, pH test, viscosity test, spreadability test, and adhesion test. The stability of the preparation is known through an accelerated stability test for four weeks. The research data will be analyzed narratively and statistically.

The results showed that 2% binahong ointment had the best burn contraction effectiveness. PEG 400 and PEG 4000 as base components affect the pH value, viscosity, adhesion, and spreadability of the ointment. The optimum formula with the composition of PEG 400 and PEG 4000 in the amount of 71.6715 grams and 10.7286 grams has met the requirements of the ointment preparation determined with a viscosity value of 6614.69 cPoise, a spreadability of 5.49 cm, and an adhesion of 4.46 seconds. Accelerated physical stability test of the optimum formula showed a decrease in viscosity and adhesion, accompanied by an increase in dispersion of the ointment, which can be caused by an increase in the kinetic energy of fluid molecules, the hygroscopic nature of PEG, and differences in testing temperature. This shows that length of storage affects the physical properties of the preparation.

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Keywords: **Anredera cordifolia**, **Centella asiatica**, **burn wound**, **ointment**