

ABSTRAK

TIARA EKA RIANI. Formulation and Evaluation of the Physical Properties of Aloe Vera (*Aloe vera L.*) Gel Ointment for Diaper Rash Treatment (supervised by Nurlina and Iskandar Zulkarnain)

Diaper rash is a common skin irritation in infants caused by friction, moisture, and prolonged use of diapers. This study aimed to formulate an aloe vera (*Aloe vera L.*) gel ointment as a topical therapy using a water-soluble base combination of PEG 400 and PEG 4000. Three formulations were tested with PEG 400:PEG 4000 ratios of F1 (65:35), F2 (70:30), and F3 (75:25). Physical characteristics were evaluated before and after temperature stability testing, including organoleptic properties, homogeneity, viscosity, adhesiveness, spreadability, and skin moisture. Results showed that all formulations remained stable in terms of organoleptic properties and homogeneity. Formula F3 exhibited the most suitable viscosity before stability testing, while F2 demonstrated the best viscosity stability after temperature exposure. Adhesiveness increased with higher PEG 400 content, while all formulations exceeded the ideal spreadability range, though not significantly in statistical terms. Moisture testing revealed enhanced skin hydration, with F3 showing the most consistent results.

Keywords: Diaper rash, aloe vera, ointment, formulation, stability



ABSTRAK

TIARA EKA RIANTI. Formulasi Dan Evaluasi Sifat Fisik Salep Penghilang Ruam Popok Gel Lidah Buaya (Aloe vera L) (dibimbing oleh **Nurlina dan Iskandar Zulkarnain**)

Ruam popok merupakan iritasi kulit yang umum terjadi pada bayi akibat gesekan, kelembapan, dan penggunaan popok dalam waktu lama. Penelitian ini bertujuan untuk memformulasikan salep gel lidah buaya (Aloe vera L.) sebagai terapi topikal menggunakan kombinasi basis larut air PEG 400 dan PEG 4000. Tiga formula diuji dengan rasio PEG 400:PEG 4000 yaitu F1 (65:35), F2 (70:30), dan F3 (75:25). Evaluasi karakteristik fisik dilakukan sebelum dan sesudah uji stabilitas suhu meliputi organoleptik, homogenitas, viskositas, daya lekat, daya sebar, dan kelembapan kulit. Hasil menunjukkan seluruh formula stabil secara organoleptik dan homogenitas. Formula F3 memiliki viskositas paling sesuai sebelum uji stabilitas, sedangkan F2 menunjukkan kestabilan viskositas terbaik setelah uji suhu. Daya lekat meningkat seiring peningkatan PEG 400, sementara daya sebar seluruh formula melebihi batas ideal namun tidak signifikan secara statistik. Uji kelembapan menunjukkan peningkatan hidrasi kulit, dengan F3 memberikan hasil paling konsisten.

Kata kunci : Ruam popok, lidah buaya, salep, formulasi, stabilitas