

## INTISARI

Minyak atsiri cengkeh (*Syzygium aromaticum*) dan kayu manis (*Cinnamomum burmannii*) diketahui memiliki aktivitas tabir surya yang berpotensi untuk dikembangkan menjadi suatu sediaan kosmetika. Secara umum, penelitian ini bertujuan untuk memperoleh suatu produk tabir surya dari kombinasi rempah asli Indonesia yakni cengkeh dan kayu manis dalam bentuk sediaan krim.

Penelitian yang dilakukan merupakan penelitian eksperimental. Diuji aktivitas tabir surya kombinasi minyak atsiri cengkeh dan kayu manis dengan menentukan nilai *Sun Protection Factor* (SPF) secara in vitro menggunakan spektrofotometer UV-Vis. Kombinasi dengan nilai SPF terpilih kemudian diformulasi menjadi sediaan krim minyak dalam air (m/a). Krim yang dihasilkan diuji nilai SPF in vitro dan dievaluasi sifat fisiknya dengan pemeriksaan organoleptis, homogenitas, derajat keasaman (pH), daya sebar, daya lekat, dan viskositas. Dilakukan pula uji stabilitas dipercepat guna mengukur stabilitas fisik sediaan. Data yang didapat kemudian dianalisis secara deskriptif dan statistik.

Kombinasi minyak memiliki aktivitas tabir surya dengan nilai SPF  $48,21 \pm 0,34$  pada konsentrasi 0,5% minyak cengkeh dan 1% minyak kayu manis. Sediaan krim m/a hasil formulasi mengalami penurunan nilai SPF menjadi  $34,47 \pm 0,33$ . Krim memiliki sifat fisik yang baik dan sesuai dengan standar serta tidak memisah selama tiga siklus *freeze-thaw cycling test*, namun krim mengalami perubahan pH dan peningkatan viskositas yang signifikan.

**Kata kunci:** kosmetik, krim m/a, minyak atsiri, spektrofotometri UV-Vis

## ABSTRACT

*Essential oils of clove (*Syzygium aromaticum*) and cinnamon (*Cinnamomum burmannii*) are known to have sunscreen activity which has the potential to be developed into a cosmetic. In general, this study aims to obtain a sunscreen cream preparation from a combination of native Indonesian spices namely cloves and cinnamon.*

*The research conducted is an experimental study. Sunscreen activity of clove and cinnamon essential oils is tested by determining the in vitro Sun Protection Factor (SPF) value using a UV-Vis spectrophotometer. Combination with the selected SPF value was then formulated into an oil-in-water (o/w) cream preparation. The resulting cream were evaluated for in vitro SPF value and their physical properties by examining organoleptic, homogeneity, degree of acidity (pH), spreadability, adhesiveness, and viscosity. An accelerated stability test was also carried out to measure the physical stability of the preparations. The data obtained were then analyzed descriptively and statistically.*

*The combination of clove and cinnamon oil had sunscreen activity with an SPF value of  $48,21 \pm 0,34$  at the chosen concentration of 0,5% clove oil and 1% cinnamon oil. The oil combination was formulated to be an o/w sunscreen cream and the SPF value decreased to  $34,47 \pm 0,33$ . The preparations has good physical properties including organoleptic, homogeneity, pH, viscosity, spreadability, and adhesion according to standards. The cream preparation also has good stability as indicated by the absence of separation during three cycles of the freeze-thaw cycling test. However, the cream underwent a significant change in pH and increase in viscosity after the accelerated stability test.*

**Keywords:** *cosmetic, o/w cream, essential oil, UV-Vis spectrophotometry*