

## INTISARI

Suplemen antioksidan dari bahan alam dapat menjadi alternatif dalam membantu menangkal efek radikal bebas penyebab timbulnya penyakit degeneratif. Penelitian ini bertujuan untuk mengetahui aktivitas antioksidan madu premium *nectar Ceiba* dan Rambutan, serta mengetahui pengaruh variasi *xanthan gum* dan propilen glikol terhadap karakteristik fisik sirup untuk menghasilkan formula optimum *honey-based syrup* ekstrak bunga krisan dan herba pegagan.

Madu dibandingkan aktivitas antioksidannya kemudian madu dengan aktivitas antioksidan terbaik digunakan sebagai basis formula. Ekstrak bunga krisan dan herba pegagan dibuat dengan metode maserasi. Ekstrak diuji antioksidannya kemudian diformulasikan menjadi sediaan sirup. Sediaan diuji karakteristik fisiknya meliputi organoleptis, pH, daya tuang, densitas, dan viskositas. Respon tiap karakteristik dianalisis menggunakan *software Design Expert*. Verifikasi formula optimum dilakukan dengan *one sample t-test*. Evaluasi stabilitas sirup dilakukan selama tiga siklus *freeze thaw* dan dianalisis menggunakan *one way ANOVA*.

Madu premium *nectar Ceiba* dipilih sebagai basis dalam formulasi. Pengurangan konsentrasi *xanthan gum* dengan peningkatan konsentrasi propilen glikol menghasilkan daya tuang, densitas, dan viskositas yang menurun. Didapatkan formula optimum dengan komposisi *xanthan gum* 0,099% dan propilen glikol 10,401%. Hasil analisis formula optimum menunjukkan tidak adanya perbedaan signifikan antara nilai prediksi dan hasil percobaan pada semua parameter. Hasil uji stabilitas *freeze thaw* menunjukkan hasil sirup yang baik dan stabil.

**Kata Kunci:** Sirup Herbal, Antioksidan, *Xanthan Gum*, Propilen Glikol

## **ABSTRACT**

*Antioxidant supplements from natural ingredients can be an alternative in helping to counteract the effects of free radicals that cause degenerative diseases. This study aims to determine the antioxidant activity of premium Ceiba and Rambutan nectar honey, and to determine the effect of variations in xanthan gum and propylene glycol on the physical characteristics of the syrup to produce the optimum formula of honey-based syrup of chrysanthemum flower extract and gotu kola herb.*

*Honey was compared for antioxidant activity, then honey with the best antioxidant activity was used as the formula base. Chrysanthemum flower and gotu kola herb extracts were prepared by maceration method. The extracts were tested for antioxidants and then formulated into syrup preparations. The preparation was tested for physical characteristics including organoleptics, pH, pourability, density, and viscosity. The response of each characteristic was analyzed using Design Expert software. Verification of the optimum formula was done with one sample t-test. Evaluation of syrup stability was carried out for three freeze thaw cycles and analyzed using one way ANOVA.*

*Ceiba premium honey nectar was chosen as the base in the formulation. Reduction in xanthan gum concentration with an increase in propylene glycol concentration resulted in decreased pourability, density, and viscosity. The optimum formula was obtained with a composition of xanthan gum 0.099% and propylene glycol 10.401%. The results of the optimum formula analysis showed no significant difference between predicted values and experimental results in all parameters. The freeze thaw stability test results showed good and stable syrup results.*

**Keywords:** *Herbal Syrup, Antioxidant, Xanthan Gum, Propylene Glycol*