

INTISARI

Ekstrak buah mengkudu (*Morinda citrifolia* L.), daun kumis kucing (*Orthosiphon aristatus* (Bl.) Miq.), dan herba seledri (*Apium graveolens* L.) aktif sebagai antihipertensi. Pembuatan sirup ketiga kombinasi ekstrak tersebut dapat memperbaiki rasa dan meningkatkan kenyamanan penggunaan oleh masyarakat. Penelitian ini bertujuan untuk mengetahui pengaruh variasi sorbitol 70% dan propilen glikol terhadap sifat fisika-kimia dan stabilitas fisik sediaan sirup.

Ekstrak kental dibuat menggunakan pelarut etanol 70% dan dikarakterisasi dengan uji daya lekat, susut pengeringan, dan analisis kandungan senyawa marker di dalam ekstrak. Sediaan sirup dibuat dalam 8 formula yang dioptimasi menggunakan metode *Simplex Lattice Design* (SLD) dan diamati sifat fisiknya meliputi organoleptis, viskositas sirup, kemudahan tuang, derajat keasaman (pH), uji tanggap rasa, dan uji durasi stabilitas pada hari ke-0 hingga hari ke-7.

Peningkatan sorbitol dan propilen glikol pada jumlah tertentu, masing-masing dapat meningkatkan nilai derajat keasaman (pH), skor tanggap rasa, dan durasi stabilitas namun tidak mempengaruhi nilai viskositas dan kemudahan tuang. Formula optimum yang diperoleh memiliki komposisi sorbitol 70% sebesar 20,7 gram dan propilen glikol sebesar 24,3 gram. Data uji sifat fisik hasil percobaan diverifikasi dengan sifat fisik hasil prediksi menggunakan uji *one sample t-test*. Evaluasi stabilitas fisik sirup formula optimum diperoleh dari analisis menggunakan *paired sample t-test*. Respon sifat fisik yang paling optimum memiliki nilai derajat keasaman (pH) sebesar 4,6, tanggap rasa 3,9 dan durasi stabilitas selama 5,7 hari. Uji sifat kimia dilakukan dengan menghitung kadar relatif senyawa marker pada 8 formula sirup rekomendasi dan sirup formula optimum. Hasil uji statistik menggunakan ANOVA menunjukkan kadar relatif yang berbeda signifikan antar formula sirup. Hal tersebut menandakan formulasi dapat mempengaruhi kadar relatif senyawa marker di dalam sirup kombinasi ekstrak.

Kata Kunci :

Ekstrak, Mengkudu, Kumis Kucing, Seledri, Sirup, Sorbitol 70%, Propilen Glikol, *Simplex Lattice Design*

ABSTRACT

Extract of noni (*Morinda citrifolia* L.), java tea's leaves (*Orthosiphon aristatus* (Bl.) Miq.), and herbaceous celery (*Apium graveolens* L.) are active as an antihypertensive. In order to improve flavor and administration convenience, those three extracts combination should be formulated in syrup dosage form. This aims of this study is to determine the effect of 70% sorbitol and propylene glycol variation on the physical-chemical properties and physical stability of the syrup dosage form

Viscous extracts were made by maceration method using ethanol 70% and characterized by a test of adhesion, drying shrinkage, and analysis of marker compounds within the extract. Syrup were made in 8 different formulas, optimized using Simplex Lattice Design (SLD) method and were checked for the physical properties, including organoleptic, viscosity, ease castings, degree of acidity (pH), perceptive taste test, and duration of stability test on day 0 to day 7th.

An increase of each sorbitol and propylene glycol at a certain amount can increase degree of acidity (pH), perceptive taste score and duration of stability but does not affect viscosity and ease castings. Optimum formula was obtained with composition of 70% sorbitol and propylene glycol are 20.7 grams and 24.3 grams consecutively. One sample t-test was conducted to verify between the predictions of the physical properties of the optimum formula with the experimental results. Physical stability of the optimum formula syrup was evaluated by analyzing using paired sample t-test. Optimum response of physical properties have 4.6 on degree of acidity (pH), perceptive taste of 3.9 and duration of stability in 5.7 days. Chemical properties of the test measured by calculating the relative concentration of marker compound in 8 different syrup formulas and optimum syrup formula. Statistical test results using one-way ANOVA showed a significant different of relative levels between syrup formulas. This indicates the formulation can affect the relative levels of marker compounds in combination extract syrup.

keywords : Extract, Noni, Java Tea, Celery, Syrup, Sorbitol 70%, Propylene Glycols, Simplex Lattice Design