

## ABSTRAK

Clarita Natalie (01038200006)

### **OPTIMASI FORMULA *POVIDONE* DAN *SODIUM STARCH GLYCOLATE* DALAM SEDIAAN SOLID *SPRINKLE FORMULATION* EKSTRAK BUAH MENGGKUDU (*Morinda citrifolia* L.)**

Skripsi, Fakultas Ilmu Kesehatan (2024)

(XV + 85 halaman; 24 tabel; 16 gambar; 21 lampiran)

Buah mengkudu (*Morinda citrifolia* L.) merupakan tanaman obat tradisional yang banyak digunakan untuk pengobatan alternatif dan komplementer. Kuersetin merupakan salah satu senyawa aktif dari buah mengkudu yang dapat memberikan efek imunomodulator. Penelitian ini bertujuan untuk menentukan kadar flavonoid total ekstrak buah mengkudu dan formula optimum dari sediaan solid *sprinkle formulation* ekstrak buah mengkudu (*Morinda citrifolia* L.) dengan variasi konsentrasi *povidone* sebagai pengikat dan *sodium starch glycolate* sebagai penghancur. Evaluasi *sprinkle formulation* meliputi uji organoleptik, bebas etanol, kelembapan, waktu alir, sudut diam, indeks kompresibilitas, waktu larut, dan keseragaman kandungan. Optimasi formula dilakukan dengan metode *simplex lattice design*. Formula optimum kemudian dianalisis secara statistik dengan uji normalitas dan *one sample t-test*. Kandungan total flavonoid dalam ekstrak etanol buah mengkudu adalah 1,654 mgQE/g. Hasil formula optimum *sprinkle formulation* diperoleh dengan proporsi *povidone* 2,703% dan *sodium starch glycolate* 2,297%. Nilai *desirability* formula optimum adalah 0,833. *Sprinkle formulation* berupa granul berwarna coklat muda dengan rasa manis dan aroma khas, serta tidak mengandung etanol berdasarkan uji kualitatif. Karakteristik fisik dari formula optimum adalah sebagai berikut: kelembapan 1,913%, waktu alir 13,415 g/s, sudut diam 30,303°, indeks kompresibilitas 6,282%, waktu larut 250,16 detik, dan keseragaman kandungan 11,905%.

Kata Kunci: mengkudu, *sprinkle formulation*, optimasi formula

Referensi: 79 (1998-2024)

## **ABSTRACT**

*Clarita Natalie (01038200006)*

### **FORMULA OPTIMIZATION OF POVIDONE AND SODIUM STARCH GLYCOLATE IN SOLID SPRINKLE FORMULATION OF NONI FRUIT EXTRACT (*Morinda citrifolia* L.)**

*Thesis, Faculty of Health Sciences (2024)*

*(XV + 85 pages; 24 tables; 16 pictures; 21 appendices)*

*Noni fruit (*Morinda citrifolia* L.) is a traditional medicinal plant widely used for alternative and complementary medicine. Quercetin is one of the active compounds in noni fruit that can provide immunomodulatory effects. This study aims to determine the total flavonoid content in noni fruit extract and the optimum formula of solid sprinkle formulation of noni fruit extract (*Morinda citrifolia* L.) with concentration variations of povidone as a binder and sodium starch glycolate as a disintegrant. The evaluations included organoleptic test, ethanol-free test, moisture content, flow time, angle of repose, compressibility index, dissolution time, and content uniformity. Formula optimization was carried out using simplex lattice design method. Optimum formula was analyzed using normality test and one-sample t-test. The total flavonoid content of noni fruit extract was 1,654 mgQE/g. Optimum formula was obtained at a proportion of 2,703% povidone and 2,297% sodium starch glycolate with desirability value 0,833. The sprinkle formulation was in form of light brown granules with sweet taste and distinctive aroma, and it was ethanol-free. The physical characteristics of the optimum formula were as follows: moisture content 1,913%, flow time 13,415 g/s, angle of repose 30,303°, compressibility index 6,282, dissolution time 250,16 seconds, and content uniformity 11,905%.*

*Keywords: noni, sprinkle formulation, formula optimization*

*References: 79 (1998-2024)*