INTISARI

Sambiloto (*Andrographis paniculata* (Burm.f.) Nees) dan mimba (*Azadirachta indica* A.Juss.) diketahui dapat membantu penurunan kadar gula dalam darah. Kedua ekstrak ini perlu dikembangkan menjadi sediaan tablet yang lebih mudah dalam produksi, pengemasan, dan penggunaanya. Tujuan penelitian ini adalah untuk mengetahui komposisi optimum dan pengaruh bahan penghancur *Sodium Starch Glycolate* (SSG) dan bahan pengisi *Microcrystalline Cellulose* (MCC) terhadap sifat fisik tablet serta kandungan andrografolid dan kuersetin dalam tablet ekstrak herba sambiloto dan ekstrak daun mimba.

Herba sambiloto dan daun mimba diekstraksi dengan metode maserasi menggunakan etanol 70%. Tablet dibuat dengan metode granulasi basah. Variasi komposisi *Sodium Starch Glycolate* (SSG) antara 2,05-8,22%, sedangkan *Microcrystalline Cellulose* (MCC) antara 36,3-42,47%. Tablet diuji sifat fisik tablet seperti keseragaman bobot, kekerasan, waktu hancur, dan kerapuhan. Formulasi tablet dioptimasi dengan metode *Simplex Lattice Design* (SLD). Hasil sifat fisik tablet formula optimum diverifikasi dengan hasil prediksi SLD menggunakan analisis statistik *One Sample T-test* dengan taraf kepercayaan 95%. Analisis kuantitatif kadar relatif andrografolid dan kuersetin dengan metode KLT Densitometri.

Hasil penelitian menunjukkan bahwa penurunan kadar bahan penghancur SSG dapat menurunkan kerapuhan dan mempercepat waktu hancur, sedangkan kenaikan kadar MCC dapat meningkatkan nilai penerimaan keseragaman bobot. Perbedaan komposisi tidak mempengaruhi kekerasan. Formula yang memberikan sifat fisik tablet yang optimum adalah 3,13% SSG : 41,39% MCC. Verifikasi hasil formula optimum dengan hasil prediksi SLD tidak berbeda signifikan terhadap respon keseragaman bobot, kekerasan, dan waktu hancur, sedangkan pada respon kerapuhan berbeda signifikan dengan rasio hasil percobaan dan prediksi 39%. Perbedaan komposisi SSG dan MCC mempengaruhi kadar relatif andrografolid dan kuersetin.

Kata kunci: sambiloto, mimba, SSG, MCC.

ABSTRACT

Sambiloto (*Andrographis paniculata* (Burm.f.) Nees) and Mimba (*Azadirachta indica* A.Juss.) are known can decrese blood glucose level. Both of the extract need to be developed as a tablet dosage form which is easier in production process. The purpose of experiment is to know the optimum composition and the impact of the disintegrant Sodium Starch Glycolate (SSG) and the filler binder Microcrystalline Cellulose (MCC) to physical properties of tablet and concentration of andrographolide and quercetin in tablet.

Herb of sambiloto and leaf of mimba were extracted with maceration method using etanol 70%. Tablet was prepared by wet granulation. Composition of SSG between 2,05-8,22% and MCC between 36,3-42,47%. Physical properties of tablet are weight variation, hardness, friability, and disintegration time. Formulation of tablet was optimized by Simplex Lattice Design (SLD). Outcome of physical properties was verificated with the prediction result of SLD using One Sample T-test statistic analysis with 95% confidence level. Relative quantitative concentration of andrographolide and quercetin were analysed by TLC Densitometri method.

The experiment results show the decrease of the concentration disintegrant SSG can influence decrease of friability and fastern of disintegration time, while the increase of MCC can improve the acceptance value of weight variation. The difference composition is not effect the hardness properties of tablet. Formula tablet which make the optimum physical properties is 3,13 % SSG and 41,39% MCC. Verification optimum formula is not signifily different to weight variation, hardness, and disintegration time, while friability properties is significant with 39% ratio. Different composition influence to relative concentration of andrographolide and quersetin inside tablet.

Keyword : sambiloto, mimba, MCC, SSG.