INTISARI

RAHAMATULAH YUSUP PANGESTU, 2024, OPTIMASI KOMBINASI ASAM SITRAT DAN ASAM TARTRAT PADA TABLET EFFERVESCENT EKSTRAK DAUN MATOA (*Pometia pinnata)* DENGAN METODE *SIMPLEX LATTICE DESIGN* (SLD). SKRIPSI, PROGRAM STUDI, S1 FARMASI, FARMASI, UNIVERSITAS SEIABUDI.

Daun matoa *(Pometia pinnata)* merupakan salah satu tanaman yang diduga memiliki aktivitas hipertensi karena mengandung kuersetin. Penelitian yang dilakukan oleh Purwidyaningrum (2017), untuk menghantarkan khasiat senyawa tersebut diperlukan formulasi sediaan tablet effervescent sebagai antihipertensi dengan kombinasi asam sitrat dan asam tartrat guna mempercepat kelarutan obat. Penelitian ini bertujuan untuk melakukan optimasi kombinasi asam sitrat dan asam tartrat sebagai sumber asam pada tablet effervescent ekstrak Daun matoa *(Pometia pinnata*) dengan menggunakan metode *simplex lattice design.*

Pembuatan tablet menggunakan metode kempa langsung dengan evaluasi granul effervescent meliputi uji laju alir, sudut diam, dan susut pengeringan granul. Evaluasi tablet meliputi uji organoleptik, tablet keseragaman bobot, kekerasan, kerapuhan, waktu larut, tanggap rasa dan derajat keasaman pH. Analisis data dengan menggunakan metode *simplex lattice* design software *design expert* versi 11.

Hasil uji mutu fisik delapan formula granul effervescent ekstrak daun matoa *(pometia pinnata)* memenuhi persyaratan. Hasil uji mutu fisik tablet effervescent ekstrak daun matoa *(pometia pinnata)* formula 1, 4 dan 6 memenuhi persyaratan semua uji mutu fisik sedangkan formula 2, 3, 4, 5, 7 dan 8 tidak memenuhi uji mutu fisik pada waktu larut. Uji mutu fisik meliputi organoleptik, keseragaman bobot tablet, kekerasan, kerapuhan, waktu larut, pH dan tanggap rasa. Hasil analisis *Simplex lattice design* didapatkan formula optimum pada konsentrasi asam sitrat 140 mg dan asam tartrat 460 mg. Kombinasi asam sitrat dan asam tartrat berpengaruh terhadap pengujian kekerasan, kerapuhan dan waktu larut tablet effervescent ekstrak daun matoa *(pometia pinnata).*

Kata kunci: Daun matoa (*Pometia Pinnata*), tablet effervescent, optimasi, asam sitrat dan asam tartrat.

ABSTRACT

RAHAMATULAH YUSUP PANGESTU, 2024, OPTIMIZATION OF THE COMBINATION OF CITRIC ACID AND TARTRIC ACID IN MATOA (Pometia pinnata) LEAF EXTRACT EFFERVESCENT TABLETS USING THE SIMPLEX LATTICE DESIGN (SLD) METHOD. THESIS, STUDY PROGRAM, BACHELOR OF PHARMACY, PHARMACY, SEIABUDI UNIVERSITY.

Matoa leaves (Pometia pinnata) are one of the plants that are thought to have Matoa leaves (Pometia pinnata) are one of the plants that are thought to have hypertensive activity because they contain quercetin. Research conducted by Purwidyaningrum (2017), to convey the benefits of this compound requires the formulation of effervescent tablets as antihypertensives with a combination of citric acid and tartaric acid to accelerate drug solubility. This research aims to optimize the combination of citric acid and tartaric acid as a source of acid in matoa (Pometia pinnata) leaf extract effervescent tablets using the simplex lattice design method.

Tablet making using direct compression method with evaluation of effervescent granules including flow rate test, angle of repose, and drying shrinkage of granules. Tablet evaluation includes organoleptic test, tablet weight uniformity, hardness, friability, dissolution time, taste response and pH acidity level. Data analysis using simplex lattice design method software design expert version 11. The results of physical quality test of eight formulas of effervescent granules of matoa leaf extract (pometia pinnata) meet the requirements.

The results of physical quality test of effervescent tablets of matoa leaf extract (pometia pinnata) formulas 1, 4 and 6 meet the requirements of all physical quality tests while formulas 2, 3, 4, 5, 7 and 8 do not meet the physical quality test at dissolution time. Physical quality test includes organoleptic, tablet weight uniformity, hardness, friability, dissolution time, pH and taste response. The results of Simplex lattice design analysis obtained the optimum formula at a concentration of citric acid of 140 mg and tartaric acid of 460 mg. The combination of citric acid and tartaric acid affects the hardness, friability and dissolution time of effervescent tablets of matoa leaf extract (pometia pinnata).

Key words: Matoa (Pometia Pinnata) leaves, effervescent tablets, optimization, citric acid and tartaric acid.