

FORMULASI DAN EVALUASI GRANUL *EFFERVESCENT* EKSTRAK KULIT MELINJO (*Gnetum gnemon* L.) SEBAGAI ANTIOKSIDAN

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ABSTRAK

Kulit melinjo (*Gnetum gnemon* L.) mengandung salah satu senyawa antioksidan yaitu flavonoid. Kulit melinjo biasa digunakan sebagai bahan makanan seperti keripik kulit melinjo. Penelitian ini bertujuan untuk mendapatkan formula granul *effervescent* dari ekstrak kulit melinjo yang memenuhi persyaratan sifat fisik granul yang baik serta mengetahui aktivitas antioksidan dari ekstrak kulit melinjo sebelum dan sesudah diformulasikan menjadi granul *effervescent*. Tahapan penelitian dimulai dari penyiapan bahan, rancangan formula, skrining fitokimia, formulasi sediaan granul *effervescent*, uji evaluasi sediaan granul *effervescent* seperti uji organoleptik, uji LoD, uji laju alir, uji sudut istirahat, uji kerapatan ruahan, kerapatan mampat, indeks kompresibilitas, uji waktu larut, penetapan pH, uji volume sedimentasi, dan uji tinggi buih serta melakukan pengujian aktivitas antioksidan. Pembuatan granul *effervescent* dibuat dengan metode granulasi basah. Hasil penelitian menunjukkan evaluasi granul *effervescent* ekstrak kulit melinjo memenuhi persyaratan fisik sediaan granul *effervescent* dengan pengujian organoleptik yaitu berbentuk butiran, berwarna coklat, berbau khas ekstrak kulit melinjo dan memiliki rasa pahit sedikit asam, uji LoD (0,2%-0,4%), laju alir (4-10 gram/detik), sudut istirahat ($20^{\circ} < \alpha < 40^{\circ}$), indeks kompresibilitas ($< 20\%$), waktu larut (< 5 menit), pH (5-7), tinggi buih (3 cm), dan volume sedimentasi (mendekati 1). Serta didapatkan hasil dari pengujian aktivitas antioksidan nilai IC_{50} pada ekstrak kulit melinjo sebesar 27,253 $\mu\text{g/mL}$, sedangkan pada granul *effervescent* F5 sebesar 35,653 $\mu\text{g/mL}$ termasuk kedalam kategori sangat kuat.

Kata kunci: Formulasi, Evaluasi, Kulit melinjo, Granul *effervescent*, Antioksidan

**FORMULATION AND EVALUATION OF EFFERVESCENT GRANULES
OF MELINJO PEEL EXTRACT (*Gnetum gnemon* L.) AS AN ANTIOXIDANT**

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ABSTRACT

*Melinjo peel (*Gnetum gnemon* L.) contains one of the antioxidant compounds, flavonoids. Melinjo peel is commonly used as a food ingredient such as melinjo peel chips. This study aims to obtain an effervescent granule formula from melinjo peel extract that meets the requirements of good granule physical properties and determine the antioxidant activity of melinjo peel extract before and after being formulated into effervescent granules. The research stages started from material preparation, formula design, phytochemical screening, effervescent granule preparation formulation, effervescent granule preparation evaluation tests such as organoleptic test, LoD test, flow rate test, angle of repose test, fracture density test, compact density, compressibility index, dissolving time test, pH determination, sedimentation volume test, and froth height test and conducting antioxidant efficacy testing. The preparation of effervescent granule was made by wet granulation method. The results showed that the evaluation of melinjo peel extract effervescent granules met the physical requirements of effervescent granule preparations with organoleptic testing, namely in the form of granules, brown in color, smelling typical of melinjo peel extract and having a slightly sour bitter taste, LoD test (0.4%-0.7%), flow rate (4-10 grams/second), angle of repose ($20^{\circ} < \alpha < 40^{\circ}$), compressibility index ($< 20\%$), dissolving time (< 5 minutes), pH (5-7), froth height (3 cm), and sedimentation volume (close to 1). As well as the results of antioxidant activity testing, the IC₅₀ value of melinjo peel extract is 27.253 $\mu\text{g/mL}$, while the effervescent granule F5 is 35.653 $\mu\text{g/mL}$, which is included in the very strong category.*

Keywords: *Formulation, Evaluation, Melinjo peel, Effervescent granules, Antioxidant*