

ABSTRAK

Agnes Yurike Flowerenceia. 2026. Pengembangan Tablet Ekstrak Daun Sirih Merah (*Piper crocatum* Ruiz & Pav.) dengan Penambahan Kitosan dan Sodium Starch Glycolate sebagai Disintegran. Program Studi Farmasi, Fakultas Ilmu Kesehatan dan Sains, Universitas PGRI Madiun. Pembimbing (I) Dr. Apt. Vevi Maritha, S.Farm., M.Farm. Pembimbing (II) Apt. Weka Sidha Baghawan, S.Farm., M.Farm.

Daun sirih merah (*Piper crocatum* Ruiz & Pav.) mengandung senyawa metabolit sekunder seperti flavonoid, alkaloid, saponin, tanin, dan fenolik yang berpotensi sebagai antiinflamasi. Penelitian ini bertujuan untuk mengetahui pengaruh variasi konsentrasi kitosan dan Sodium Starch Glycolate (SSG) sebagai disintegran terhadap mutu fisik tablet serta menentukan formula dengan karakteristik tablet terbaik. Penelitian menggunakan metode eksperimental laboratorium dengan granulasi basah. Tablet dibuat dalam tiga formula dengan variasi konsentrasi kitosan dan SSG, FI (kitosan 40%: SSG 60%) FII (kitosan 50%: SSG 50%) FIII (kitosan 60%: SSG 40%) kemudian dilakukan evaluasi sifat fisik granul dan mutu fisik. Data dianalisis menggunakan uji normalitas, homogenitas, dan One-Way ANOVA. Hasil penelitian menunjukkan bahwa seluruh formula memenuhi persyaratan pada uji kadar air, waktu alir, sudut diam, bulk density, tap density, indeks kompresibilitas, organoleptis, keseragaman bobot, dan keseragaman ukuran. Seluruh formula tidak memenuhi persyaratan uji kerapuhan, sedangkan hanya Formula III yang memenuhi persyaratan waktu hancur. Analisis statistik menunjukkan bahwa variasi konsentrasi kitosan dan SSG memberikan pengaruh yang signifikan ($p < 0,05$) terhadap kadar air, sudut diam, bulk density, tap density, indeks kompresibilitas, keseragaman bobot, ketebalan tablet, kekerasan, kerapuhan, dan waktu hancur, namun tidak berpengaruh signifikan terhadap waktu alir dan diameter tablet ($p > 0,05$). Berdasarkan keseluruhan hasil evaluasi, Formula III memberikan karakteristik tablet yang paling optimum karena memenuhi persyaratan waktu hancur dengan mutu fisik yang baik dibandingkan formula lainnya.

Kata kunci: *Piper crocatum*, tablet herbal, kitosan, Sodium Starch Glycolate, disintegran, mutu fisik tablet.

ABSTRACT

Agnes Yurike Flowerenceia. 2026. Development of Red Betel Leaf (*Piper crocatum* Ruiz & Pav.) Extract Tablets Using Chitosan and Sodium Starch Glycolate as Disintegrants. Pharmacy Study Program, Faculty of Health Sciences and Science, Universitas PGRI Madiun. Supervisor I: Dr. Apt. Vevi Maritha, S.Farm., M.Farm. Supervisor II: Apt. Weka Sidha Baghawan, S.Farm., M.Farm.

Red betel leaf (*Piper crocatum* Ruiz & Pav.) contains secondary metabolites, including flavonoids, alkaloids, saponins, tannins, and phenolic compounds, which have potential anti-inflammatory activity. This study aimed to determine the effect of varying concentrations of chitosan and Sodium Starch Glycolate (SSG) as disintegrants on the physical quality of red betel leaf extract tablets and to identify the optimum formulation. This experimental laboratory study employed the wet granulation method. Tablets were prepared in three formulations with different ratios of chitosan and SSG: F1 (40% chitosan: 60% SSG), F2 (50% chitosan: 50% SSG), and F3 (60% chitosan: 40% SSG). The granules and tablets were evaluated for their physical properties. Data were analyzed using normality, homogeneity, and One-Way ANOVA tests. The results showed that all formulations met the requirements for moisture content, flow rate, angle of repose, bulk density, tapped density, compressibility index, organoleptic properties, weight uniformity, and size uniformity. However, none of the formulations met the friability requirement, while only Formula III complied with the disintegration time requirement. Statistical analysis indicated that variations in chitosan and SSG concentrations significantly affected ($p < 0.05$) moisture content, angle of repose, bulk density, tapped density, compressibility index, weight uniformity, tablet thickness, hardness, friability, and disintegration time, but had no significant effect on flow rate and tablet diameter ($p > 0.05$). Overall, Formula III demonstrated the most optimal tablet characteristics because it met the disintegration time requirement and exhibited better physical quality than the other formulations.

Keywords: *Piper crocatum*, herbal tablet, chitosan, Sodium Starch Glycolate, disintegrant, tablet physical quality