

## ABSTRACT

### THE EFFECT OF HPMC CONCENTRATION AS A *BINDING AGENT* ON THE PHYSICAL QUALITY EVALUATION OF CHEWABLE TABLETS CONTAINING RED GUAVA (*Psidium guajava Linn*) EXTRACT

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Red guava fruit (*Psidium guajava L.*) contains flavonoid and tannin compounds that function as antioxidant. Red guava fruit extract can be formulated into chewable tablets because it provides a pleasant taste in the oral cavity and is easy to swallow. The formulation of red guava fruit extract chewable tablets uses HPMC as a binder because it is able to improve tablet compactness, hardness, and granule flowability, is inert in nature, and facilitates the tablet compression process. This study aimed to determine the effect of HPMC concentration as a binder on the physical quality of chewable tablets containing red guava fruit extract. This study is an experimental research in which red guava fruit was extracted using the maceration method with 70% ethanol and then formulated into chewable tablets through the wet granulation method. In this study, three formulations were prepared containing 15 mg of red guava fruit extract with varying concentrations of HPMC. The resulting tablets were evaluated for their physical quality, including organoleptic properties, weight uniformity, hardness, friability, and disintegration time. The data were then analyzed using *one-way ANOVA* with SPSS 25.0 at a 95% confidence level. The evaluation of tablet physical quality showed that the organoleptic test, weight uniformity test, and disintegration time test for all formulas, as well as the friability test for Formula I, met the standards of the Indonesian Pharmacopoeia. However, the hardness test for all formulas and the friability test for Formulas II and III did not comply with the standards. The conclusion of this study indicates that variations in the concentration of the HPMC binder play an important role in determining the physical characteristics of the resulting chewable tablets. Differences in HPMC concentration significantly affected tablet weight uniformity ( $p<0.05$ ) however, they did not have a significant effect on tablet hardness ( $p>0.05$ ).

**Keywords:** *red guava extract, chewable tablets, HPMC, binding agent*

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