Mixture Optimization of Citric Acid and Tartrat Acid as Acid in Formulations of Effervescent Tablets from Fig (*Ficus carica* L.) Leaf Extract by Simplex Lattice Design Method

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ABSTRACT

Fig (Ficus carica L.) leaf has antipyretic activity empirically and based on scientific research. It can be practically consumed in the form of effervescent tablets. The aim of this study was to combine citric acid and tartrate acid as a source of acid in an effort to obtain the most optimal concentration in the formula. Dried fig leaves were extracted by the infundation method, then made in the form of effervescent tablets with a combination of citric acid and tartaric acid. Optimization was carried out using the simplex lattice design method and analysis of the content of active compounds in extracts and preparations was carried out qualitatively using thin layer chromatography. Analysis of the results of the data was conducted in two ways, namely using a theoretical approach from the literature and statistical tests using Design Expert® trial version. The result of the analysis was obtained a significant model ($p < 0.05$) for the disintegration response and following the cubic model. The optimal formula results obtained were 77 mg citric acid and tartrate acid as much as 943 mg. The result of the thin layer chromatography qualitatively indicated that this formulation has no effect on the presence of active compounds. It was concluded that the optimal formula has met the criteria for good physical properties of tablets and effervescent tablet formulation could be a practical alternative preparation for consuming fig leaves.

Kata kunci: *Ficus carica* L, *efervescent tablets, citric acid, tartaric acid, simplex lattice design*.