Formulasi *Mouth Dissolving Film* Kombinasi Ekstrak Kencur (*Kaempferia Galanga* L.) dan Jahe (*Zingiber Officinale* Roscoe) Dengan Metode *Simplex Lattice Design*

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INTISARI

Kencur (*Kaempferia galanga* L.) dan jahe (*Zingiber officinale Roscoe*) berpotensi dikembangkan sebagai sediaan antibakteri terhadap faringitis. *Mouth dissolving film* (MDF) merupakan sediaan yang menjanjikan untuk terapi faringitis yang bersifat lokal di sekitar mulut. Penelitian ini berfokus pada pembuatan MDF kombinasi ekstrak kencur dan jahe dengan metode *simplex lattice design* serta evaluasi sediaannya. *Simplex lattice design* digunakan untuk menentukan perbandingan jumlah polimer optimal yang akan diformulasi. Sepuluh formula yang diperoleh menggunakan *Design expert* dibuat menjadi *mouth dissolving film*. Sediaan dibuat menggunakan variasi 3 polimer dengan kemampuan berbeda, yaitu HPMC E5, PVA, dan PVP K30 melalui teknik *solvent casting*. Sediaan yang diperoleh kemudian diuji keragaman bobot, ketebalan sediaan, *folding endurance*, pH permukaan, dan *moisture loss*. Formula dengan hasil pengujian rata-rata terbaik adalah formula 1. Optimasi dengan *design expert* menghasilkan formula optimal dengan perbandingan polimer PVA:HPMC:PVP sebesar 0,518:0,129:0,153 gram. Prediksi hasil pengujian formula optimal diperoleh nilai 26,68% (SBR keseragaman bobot), 0,159 mm (ketebalan sediaan), 269,61 lipatan (*folding endurance*), 5,71 (pH permukaan), 7,91% (*moisture loss*), dan 6,0 detik (waktu hancur). Dengan demikian, disimpulkan bahwa kombinasi PVA, HPMC, dan PVP dapat digunakan sebagai polimer dalam pembuatan *mouth dissolving film* dengan formula optimal yang perlu dievaluasi lebih lanjut.
Kata kunci: *mouth dissolving film*, kencur, jahe, *simplex lattice design*

Formulation of Mouth Dissolving Film Combination of Kencur (*Kaempferia galanga* L.) and Ginger Extract (*Zingiber officinale* Roscoe) Using Simplex Lattice Design Method

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ABSTRACT

Kencur (*Kaempferia galanga* L.) and ginger (*Zingiber officinale* Roscoe) have potential to be developed as antibacterial preparation against pharyngitis. Mouth dissolving film (MDF) s a promising preparation for pharyngitis therapy that has local effect around the mouth. This research focuses on formulation of MDF combination of kencur and ginger extract with simplex lattice design method and its evaluation. Simplex lattice design was used to determine the optimal number of polymer to be formulated. Ten formulas obtained using Design Expert were used to make MDFs. The preparation was made using variations of 3 polymers with different capabilities, namely HPMC E5, PVA, and PVP K30 through solvent casting technique. The obtained preparation is then evaluted by weight uniformity test, stock thickness, endurance folding, surface pH, moisture loss, and disintegration time. Formula with the best average evaluation results is formula 1. Optimization using design expert software produces an optimal formula with ratio of polymer PVA:HPMC:PVP of 0,518:0,129:0,153 grams. Prediction of result evaluation of optimal formula obtained values of 26,68% (SBR of weight uniformity), 0,159 mm (thickness), 269,61 folds (folding endurance), 5,71 (surface pH), 7,91% (moisture loss), and 6,0 seconds (disintegration time). Hence, in conclusion combination of PVA, HPMC, and PVP can be used as polymers in mouth dissolving film formulation with optimal formula that need further evaluation.

Key words: mouth dissolving film, *kencur*, ginger, simplex lattice design