



## INTISARI

### **Optimasi Formula Optimum Gondorukem sebagai *Enteric Coating Film* dengan Metode *Simplex Lattice Design***

Lapisan film telah banyak digunakan dalam industri makanan dan farmasi yaitu sebagai salut. Pembuatan lapisan film dibutuhkan bahan polimer, *plasticizer*, pelarut dan zat warna. Gondorukem memiliki sifat pembentuk lapisan film yang baik dan dapat melindungi dari kelembaban dan asam. Penelitian ini bertujuan untuk mengetahui pengaruh gondorukem, DMP, dan PEG 400 yang digunakan sebagai salut enterik terhadap sifat fisis tablet seperti keseragaman bobot, ketebalan, kenaikan bobot, kekerasan, kerapuhan dan waktu hancur serta mendapatkan formula optimum.

Penyalutan tablet dilakukan dengan metode pencelupan menggunakan campuran gondorukem, DMP, dan PEG 400. Penentuan formula dilakukan dengan program *simplex lattice design* sehingga diperoleh 10 formula yang terdistribusi dalam 14 *run* berbeda dengan variasi konsentrasi gondorukem, DMP dan PEG 400. Data yang diperoleh dibandingkan dengan literatur tentang persyaratan sediaan tablet salut kemudian dianalisis dengan program *Design Expert 9.0.4* metode *simplex lattice design* sehingga diperoleh formula optimal.

Hasil penelitian menunjukkan bahwa penyalutan tablet dengan salut gondorukem dapat meningkatkan kekerasan tablet dari 10,4 kg menjadi 20,2 kg. *Plasticizer* PEG 400 dapat meningkatkan bobot tablet salut dan kekerasan tablet. Interaksi gondorukem, DMP, dan PEG 400 dapat meningkatkan kekerasan dan interaksi gondorukem dan PEG 400 dapat menurunkan nilai kerapuhan tablet. Formula optimum yang diperoleh terdiri dari 25,5 g gondorukem, 2,1 g DMP dan 2,4 g PEG 400.

Kata Kunci : gondorukem, DMP, PEG 400, salut enterik, *Simplex Lattice Design*



## ABSTRACT

### OPTIMIZATION FORMULA RESIN AS ENTERIC COATING FILM BY SIMPLEX LATTICE DESIGN METHOD

Film coating has been widely used in the food and pharmaceutical industries, as a coating. Making film coating needs polymer materials, plasticizer, solvent and dye. Gondorukem has excellent film-forming properties and can protect against moisture and acids. This study aims to determine the effect of resin, DMP, and PEG 400 used as an enteric coating on the tablet physical properties such as weight uniformity, thickness, the increase in weight, hardness, friability and disintegration time and to obtain the optimum formula.

Tablet coating is done by dipping method with formula resin, DMP, and PEG 400. The formula is obtained by the simplex lattice design program so that there is ten formula which distributed in 14 different runs, with the variation of resin, DMP, and PEG 400 concentration. The properties of coating tablet were compared with the literature of coating tablet requirement and analyzed by simplex lattice design program from Design Expert 9.0.4 software to obtain the optimal formula.

The results show that the coated tablets with resin can increase the hardness of tablets from 10.4 kg to 20.2 kg. PEG 400 can increase the weight of coated tablet and hardness of tablet. Interaction resin, DMP, and PEG 400 can increase the hardness and interaction resin and PEG 400 can decrease tablet friability. Formula optimum consists of 25,5 g resin, 2,1 g of DMP and 2,4 g PEG 400.

Keywords: resin, DMP, PEG 400, *enteric coating*, *Simplex Lattice Design*