

INTISARI

Penelitian tentang prediksi formula optimum tablet perasan buah Mahkota Dewa dengan eksipien Aerosil[®] dan Di-Cafos[®] secara granulasi basah : aplikasi desain faktorial telah dilakukan. Penelitian ini bertujuan untuk mengetahui efek Aerosil[®], Di-Cafos[®] atau interaksinya yang dominan dalam menentukan masing- masing sifat fisik granul, serta mencari area komposisi optimum eksipien yang diprediksi sebagai formula optimum tablet perasan buah Mahkota Dewa.

Penelitian ini termasuk penelitian eksperimental murni menggunakan desain faktorial. Digunakan 4 formula, yaitu (1) : level Aerosil[®] dan Di-Cafos[®] rendah, *a* : level Aerosil[®] tinggi, level Di-Cafos[®] rendah, *b* : level Aerosil[®] rendah, level Di-Cafos[®] tinggi, *ab* : level Aerosil[®] dan Di-Cafos[®] tinggi. Granul diuji sifat fisiknya meliputi laju alir, daya serap, kadar air, dan kompaktibilitasnya (kekerasan tabletnya). Dengan rumus desain faktorial, dihitung efek Aerosil[®], Di-Cafos[®] dan interaksinya, kemudian dibuat *contour plot* untuk mencari area komposisi optimum eksipien.

Hasil menunjukkan bahwa Di-Cafos dominan dalam menentukan laju alir granul, daya serap granul terhadap air, dan kekerasan tablet, sedangkan interaksi antara Aerosil[®] dan Di-Cafos[®] dominan dalam menentukan kadar air granul. Dari *contour plot super imposed* diperoleh area optimum untuk laju alir, daya serap, kadar air granul, dan kekerasan tablet, yaitu pada level Aerosil[®] -1 sampai 1, dan Di-Cafos[®] pada level $\pm 0,5$. Area tersebut diprediksi sebagai formula optimum tablet perasan buah Mahkota Dewa pada level yang diteliti, tanpa memperhatikan kompaktibilitas granul yang ideal.

Kata kunci : Mahkota Dewa, Aerosil[®], Di-Cafos[®], tablet, granulasi basah, desain faktorial

ABSTRACT

The research about “The prediction of the optimum formula of Mahkota Dewa squeeze juice using the excipients of Aerosil[®] and Di-Cafos[®] by wet granulation : factorial design application” had been conducted. The aims of the research were to observe the dominant effect among Aerosil[®], Di-Cafos[®], and the interaction on determining the granule physical properties, and was to find out the optimal formula of the tablet which was predicted from the optimal area of the composition.

This research was a pure experimental study based on factorial design at level of 2^2 . Four formulas were employed, i. e. (1) : Aerosil[®] and Di-Cafos[®] both in low levels, *a* : Aerosil[®] in high level, Di-Cafos[®] in low level, *b* : Aerosil[®] in low level, Di-Cafos[®] in high level, *ab* : Aerosil[®] and Di-Cafos[®] both in high levels. Granules were evaluated by their flow properties, water absorption capacity, moisture content, and compactibility. Based on the factorial design, Aerosil[®], Di-Cafos[®], and the interaction effects were calculated, and then the contour plot graph of granules properties were super imposed to serve the optimal area of the composition.

The result showed that Di-Cafos[®] was dominant in determining the flow properties, water absorption capacity, and the tablet crushing strength, whereas the interaction between Aerosil[®] and Di-Cafos[®] was dominant effects in determining moisture contents. Based on the super imposed graph, there was the optimal area of flow properties, water absorption capacity, moisture content and it was predicted as optimal formula of the tablet.

Key words : Mahkota Dewa, Aerosil[®], Di-Cafos[®], tablet, wet granulation, factorial design