INTISARI

Vitamin C mudah dioksidasi dalam larutan, karenanya paling banyak digunakan dalam bentuk tablet. Vitamin C juga tidak stabil pada kelembaban sehingga tablet Vitamin C paling cocok dibuat secara kempa langsung. Produksi tablet kempa langsung membutuhkan *filler-binder*, biasanya digunakan kombinasi *filler-binder* untuk memperbaiki sifat masing-masing *filler-binder*. Oleh karena itu, perlu diteliti profil sifat fisik campuran biner Vivapur® Type 102-Di-cafos untuk menentukan formula tablet kempa langsung Vitamin C.

Profil sifat fisik campuran Vivapur® Type 102-Di-cafos diperoleh berdasarkan *simplex lattice design* dan rumus Y= a (A) + b (B) + ab (A) (B), dilakukan 3 percobaan yang menggunakan 100% Vivapur® Type 102, 100% Di-cafos dan campuran 50% Vivapur® Type 102- 50% Di-cafos. Untuk pengecekan digunakan campuran 80%: 20%, 65%:35%, 35%:65% dan 20%:80%. Setelah Vivapur® Type 102 dan Di-cafos dicampur dalam *cube mixer* (15 menit, 20 rpm), campuran diuji densitas, kecepatan alir, kapasitas dan kecepatan penyerapan air dan kompaktibilitasnya. Berdasarkan profil yang dihasilkan dapat dipilih campuran Vivapur® Type 102- Di-cafos yang dipakai sebagai *filler-binder* tablet kempa langsung Vitamin C.

Setiap 150 mg formula tablet mengandung 25 mg Vitamin C, 0,5% Mg-stearat dan sisanya *filler-binder*. *Filler-binder* yang dipilih adalah campuran Vivapur® Type 102 -Di-cafos 80%: 20% dan 65%:35%. *Filler-binder* 100% Vivapur® Type 102, 100% Di-cafos dan campuran Vivapur® Type 102-Di-cafos 50%:50%, 35%:65%, dan 20%:80% digunakan untuk pengecekan. Vitamin C dan *filler-binder* dicampur selama 15 menit, 20 rpm dalam *cube mixer*, lalu ditambah Mg-stearat dicampur selama 5 menit, 20 rpm dan ditablet.

Tablet diuji keseragaman bobot, kekerasan, kerapuhan dan waktu hancurnya. Data dianalisis secara teoritik dan statistik menggunakan ANAVA satu arah dilanjutkan uji *Scheffe* dengan taraf kepercayaan 95%.

Hasil penelitian menunjukkan bahwa profil sifat fisik campuran Vivapur® Type 102- Di-cafos berbeda-beda. Campuran Vivapur® Type 102- Di-cafos yang mengandung Di-cafos ≤ 35% merupakan campuran yang relatif baik sebagai *filler-binder* tablet kempa langsung Vitamin C.

ABSTRACT

Vitamine C in solution is easily oxidized, therefore it is mostly used in tablet dosage form. Vitamine C tablet is suitable produced by direct compression as it is not stable in humidity. In direct compression tablet needs filler-binder which is usually used in combination to improve the physical properties of each filler-binder. Therefore, it is needed to evaluate the profile of physical properties of Vivapur® Type 102- Di-cafos mix to determine the formula of Vitamine C direct compression tablet.

To obtain profile of physical properties of Vivapur® Type 102-Di-cafos mix, based on simplex lattice design and equation Y= a (A) + b (B) + ab (A) (B), 3 experiments using 100% Vivapur® Type 102, 100% Di-cafos and 50% Vivapur® Type 102-50% Di-cafos mix were done. For checking, experiments using Vivapur® Type 102-Di-cafos mix of 80%: 20%, 65%:35%, 35%:65% and 20%:80% were done as well. After mixing in cube mixer (15 minutes, 20 rpm), the mixtures then was evaluated their bulk density, flowing rate, capasity and rate of water adsorption and compactibility. Based on the profile of physical properties of the mix, it could be chosen Vivapur® Type 102-Di-cafos mix as filler-binder of Vitamine C direct compression tablet.

Each formula of 150 mg tablet formula contains 25 mg Vitamine C, 0.5 Mg-stearate and the rest was the filler-binder. The chosen filler-binder was Vivapur® Type 102- Di-cafos mix of 80%:20% and 65%:35%. 100% Vivapur® Type 102, 100% Di-cafos and Vivapur® Type 102- Di-cafos mix of 50%:50%, 35%:65%, and 20%:80% were used as filler-binder for checking. Vitamine C and filler-binder was mixed in cube mixer (15 minutes, 20 rpm) then was mixed with Mg-stearate for 5 minutes and finally was tabletted.

Tablet was evaluated its weight uniformity, hardness, friability and disintegration time. Data was analysed by theorytical and statistical method using one way ANOVA continued by Scheffe test with 95% confidence.

The results showed that profile of physical properties of Vivapur® Type 102-Di-cafos mix was different. Vivapur® Type 102-Di-cafos mix containing Di-cafos ≤ 35% was relatively good filler-binder of Vitamine C direct compression tablet.