

ABSTRAK

Bahan pengikat memiliki peran yang penting dalam menjaga ikatan antara bahan aktif dan bahan tambahan dalam suatu tablet, terutama ketika tablet dilakukan pengempaan berulang. Salah satu bahan pengikat yang sering digunakan adalah polivinilpirolidon (PVP) K-25. Ketika dilakukan pengempaan berulang, sering kali terjadi permasalahan mengenai potensi dari bahan pengikat ketika mengalami beberapa kali pengempaan. Tujuan dari penelitian ini adalah untuk mengetahui *reworking potential* pada PVP K-25 dengan tingkatan konsentrasi berbeda sebagai bahan pengikat dilihat pada sifat fisik campuran dan sifat fisik tablet parasetamol. Penelitian ini termasuk penelitian eksperimental murni dengan rancangan penelitian acak lengkap pola dua arah. Penelitian diawali dengan proses granulasi dan pengempaan bahan, tahap lubrikasi, tahap pengempaan tablet pada masing-masing formula. Hasil pengempaan tablet dihancurkan kembali sebanyak dua kali dan dilakukan pengujian sifat fisik campuran (sifat alir dan kompresibilitas) serta sifat fisik tablet meliputi uji kompaktibilitas, uji kekerasan, uji kerapuhan, dan uji waktu hancur. Data yang didapat diuji secara statistik dengan melihat normalitas *Shapiro-Wilk*, lalu dilanjutkan dengan uji *Kruskal-Wallis* dan *Post-Hoc Mann Whitney*. Dari hasil penelitian didapatkan hasil bahwa PVP K-25 dapat mempertahankan potensinya sebagai bahan pengikat yang dilihat dari sifat fisik campuran dan sifat fisik tablet parasetamol.

Kata Kunci : *reworking potential*, tablet, granulasi basah, PVP K-25, parasetamol.

ABSTRACT

Binding agents have an important role in maintaining the bond between the active ingredients and additional ingredients in a tablet, especially when the tablet is repeatedly compressed. One of the binders that is often used is polyvinylpyrrolidone (PVP) K-25. However, problems often arise regarding the potential of the binder material when subjected to several compressions. The aim of this research is to determine the reworking potential of PVP K-25 with different concentration levels as a binder based on the physical properties of the mixtures and the physical properties of the paracetamol tablets. This research is a pure experimental study with a two-way completely randomized research design. The research began with the granulation and material compression process, the lubrication stage, and the tablet compression stage in each formula. The results of pressing the tablets were crushed again twice and the physical properties of the mixtures (flow properties and compressibility) were tested as well as the physical properties of the tablets including compactibility tests, hardness tests, brittleness tests and disintegration time tests. The data obtained was tested statistically by looking at Shapiro-Wilk normality, then continued with the Kruskal-Wallis and Post-Hoc Mann Whitney tests. From the research results, it was found that PVP K-25 can maintain its potential as a binder as seen from the physical properties of the mixtures and the physical properties of the paracetamol tablets.

Keywords: reworking potential, tablets, wet granulation, PVP K-25, paracetamol.