

INTISARI

Umbi porang (*Amorphophallus oncophyllus*) merupakan salah satu kekayaan alam yang dimiliki Indonesia. Salah satu kandungan terbesar umbi porang adalah glukomanan yang dapat dimanfaatkan di berbagai bidang baik bidang industri maupun kesehatan. Penelitian ini bertujuan untuk memanfaatkan glukomanan dari umbi sebagai bahan pengisi dalam pembuatan tablet.

Pemurnian dilakukan untuk memperoleh glukomanan (GM) dengan pencucian menggunakan etanol konsentrasi 50% dan 80%. GM yang diperoleh dikarakterisasi meliputi kadar air, kadar abu, kadar lemak total, kadar protein, morfologi partikel, kadar kalsium oksalat, dan kadar glukomanan. GM yang telah dikarakterisasi, selanjutnya digunakan sebagai bahan pengisi tablet asam mefenamat dengan metode kempa langsung. Pengujian dilakukan terhadap karakteristik granul meliputi waktu alir, sudut diam, *Carr Index* dan *Hausner ratio*, sedangkan karakteristik tablet meliputi uji keragaman bobot, kerapuhan, kekerasan, waktu hancur, kadar zat aktif, dan disolusi.

Pemurnian yang dilakukan menghasilkan GM dengan karakteristik meliputi kadar air 10,63%, kadar abu 0,68%, kadar lemak 0,10%, kadar protein 1,60%, dengan morfologi granula GM yang cukup bersih dari pengotor, kadar kalsium oksalat 2,31%, serta kadar GM sebesar 61,48% (*Calculated as glucose*). Sifat alir granul asam mefenamat dengan GM sebagai bahan pengisi menghasilkan granul dengan sifat alir yang masih dapat mengalir (*fair flow*). Penggunaan glukomanan sebagai bahan pengisi dalam pembuatan tablet secara kempa langsung menghasilkan karakteristik tablet yang memenuhi persyaratan keragaman bobot, kerapuhan, kekerasan, waktu hancur, kadar zat aktif, dan disolusi. Hasil uji statistika menunjukkan adanya perbedaan signifikan pada kerapuhan dan waktu hancur tablet asam mefenamat dengan pengisi GM dibandingkan dengan glukomanan komersial (KGM®) dengan nilai yang lebih baik pada KGM®.

Kata kunci : umbi porang (*Amorphophallus oncophyllus*), glukomanan, bahan pengisi

ABSTRACT

Amorphophallus oncophyllus known as porang tuber is one of Indonesia natural wealth. The biggest content of porang tuber is glucomannan, which can be utilized in various fields such as industry and health. This study was aimed to determine the application of glucomannan of porang as a filler in the manufacture of mefenamic acid tablets by direct compression method.

The purification of glucomannan (GM) was performed by washing porang flour with 50% and 80% ethanol. The results obtained are characterized such as water content, ash content, total fat content, protein content, particle morphology, calcium oxalate and glucomannan content. The result of purification, in the form of GM with certain characteristics used as a filler of mefenamic acid tablet by direct compression method. Characteristic of flowability of mefenamic acid granule with GM as filler was performed such as flow time, angle of repose, Carr index, and Hausner ratio test, and tablet characteristics include weight uniformity test, friability, hardness, disintegration time, drug active content, and dissolution.

The purification process yielded GM characteristic of water content 10.63%, ash content 0.68, lipid content 0.10%, protein content 1.60%, with low impurities attach to GM granule, calcium oxalate content 2.31% and GM content 61.48% (calculated as glucose). Characteristics of flowability of GM as a filler shown fair flow (flow time 12.58 second, angle of repose 37.40 degree, Carr index 19.67%, and Hausner ratio 1.24). The use of GM as a filler in the manufacturer of mefenamic acid tablets met Indonesian Pharmacopoeia acceptance criteria value in the characteristics of tablets (weight uniformity, friability, hardness, disintegration time, active drug content, and dissolution) and there was significantly different between GM and KGM[®] as fillers in friability and disintegration test with better value of KGM[®] than GM.

KEY WORDS: Porang tuber (*Amorphophallus oncophyllus*), Glucomannan, Fillers.