

INTISARI

Glukomanan merupakan serat pangan yang berpotensi untuk dikembangkan di dunia industri pangan. Glukomanan diperoleh dari proses ekstraksi tepung porang (*Amorphophallus oncophyllus*) dengan menggunakan pelarut air dan etanol. Beberapa faktor yang berpengaruh terhadap kadar glukomanan dan karakteristik fisik glukomanan diantaranya waktu panen dan ukuran umbi. Tujuan penelitian ini adalah mengkaji pengaruh bulan panen dan ukuran umbi porang terhadap laju ekstraksi glukomanan tahap I (proses pelarutan glukomanan) dan tahap II (proses pemisahan glukomanan), serta karakterisasi kualitas fisik tepung glukomanan. Laju ekstraksi glukomanna pada tahap ekstraksi tahap I dimodelkan menggunakan persamaan avrami berdasarkan perubahan data viskositas larutan tiap satuan waktu, sedangkan laju ekstraksi tahap II dimodelkan dengan menggunakan persamaan kinetika reaksi orde I berdasarkan berat rendemen. Penentuan waktu panen dan ukuran umbi porang yang selanjutnya ditentukan berdasarkan parameter rendemen, kadar air, derajat warna putih (*whiteness*), pH, viskositas, *solubility*, transparansi, dan kadar glukomanan. Hasil penelitian pendahuluan diperoleh kinetika ekstraksi I mendapatkan konstanta 0,0003-0,0356 dan kinetika ekstraksi II mendapatkan konstanta 0,0075-0,0374. Rendemen yang dihasilkan sebesar 47,30–72,97%. Nilai tertinggi adalah glukomanan dengan pemanenan pada bulan Juni variasi ukuran umbi besar. Berdasarkan karakterisasi sifat fisik glukomanan, hasil terbaik pada bulan pemanenan September variasi umbi Besar dengan parameter viskositas 29866,67 m.Pas; Kadar Glukomanan 94,89%; KA 4,07%; Solubility 81,22%; Transparansi 45,12. Hasil karakterisasi glukomanan menunjukkan bulan panen berpengaruh terhadap rendemen, kadar air, *solubility*, *whiteness*, dan transparansi. Sedangkan ukuran umbi berpengaruh terhadap kadar air, *solubility*, *whiteness*, transparansi, dan viskositas. Glukomanan dari porang dengan bulan panen September dan variasi ukuran umbi besar menunjukkan hasil yang terbaik.

Kata Kunci: Ekstraksi glukomanan, bulan panen, ukuran umbi, karakteristik tepung glukomanan.

ABSTRACT

*Glucomannan is a food fiber that has the potential to be developed in the food industry. Glucomannan was obtained from porang flour (*Amorphophallus oncophyllus*) through the extraction process using water and ethanol as solvents. Several factors, including variations in harvesting time and tuber size influence glucomannan yield and the physical characteristics of glucomannan. The purpose of this study was examine the effect of the harvesting month and porang tuber size on the extraction rate rate of glucomannan extraction stage I (glucomannan dissolving process) by applying avrami equation and extraction rate on the stage II (glucomannan separation process) using first order of the kinetics equation, as well as characterizing the physical quality of the resulted glucomannan. Glucomannan was then characterized by yield parameters, water content, whiteness, pH, viscosity, solubility, transparency, and glucomannan content. The result showed that extraction I obtained constant of avrami ranging from 0,0003-to 0,0356, while extraction II obtained a constant of 0,0075-0,0374. The resulting yield of glucomannan is in the range of 47,30 – to 72,97%. The highest value of glucomannan was obtained for porang tuber harvested in June with tuber size between 20 and 30 cm. Based on the characterization of the physical properties of glucomannan, the best results were in the September harvest for the Big tuber variety with a viscosity parameter of 29866.67 m.Pas; Glucomannan content 94.89%; KA 4.07%; Solubility 81.22%; Transparency 45.12. The results of the characterization of glucomannan showed that the month of harvest affected the yield, water content, solubility, whiteness, and transparency. While the tuber size affects the water content, solubility, whiteness, transparency, and viscosity. Glucomannan from porang with September harvest and large tuber size variations showed the best results.*

Keywords: Extraction of glucomannan, month of harvest, tuber size, characteristics of glucomannan flour.