

**PENGARUH UKURAN *SCREENER* PADA MESIN PENEPUK TIPE
HAMMER MILL TERHADAP KUALITAS FISIKOKIMIA TEPUNG
PORANG**

INTISARI

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Glukomanan merupakan polisakarida yang banyak terdapat pada umbi porang dan mempunyai berbagai manfaat kesehatan. Salah satu tahapan ekstraksi glukomanan, yaitu dengan penepungan. Akan tetapi, permasalahan yang dihadapi pada penepungan ini adalah kandungan pengotor yang masih tinggi. Penepungan porang dapat dilakukan dengan berbagai metode penggilingan, salah satunya *hammer mill*. Pada saat ini juga sudah mulai banyak modifikasi alat penepungan porang yang dilengkapi dengan *cyclone separator* yang berfungsi untuk memisahkan atau menurunkan komponen pengotor dari granula glukomanan. Penelitian ini menggunakan mesin penepungan, yaitu *hammer mill* dilengkapi *screener* dan *cyclone separator*. Tujuan penelitian ini adalah untuk mengetahui pengaruh ukuran *screener* pada *hammer mill* terhadap karakteristik kimia dan fisik tepung porang serta mengetahui ukuran *screener* paling baik untuk digunakan yang mampu memperoleh karakteristik kimia dan fisik tepung porang terbaik. *Screener* yang dipasang pada penelitian ini memiliki ukuran 7 mesh, 14 mesh, dan 25 mesh. Penepungan menggunakan *hammer mill* dengan *screener* berukuran 7 mesh menghasilkan tepung porang dengan kadar air 16,6273%, kadar glukomanan 56,0372%, kadar kalsium oksalat 0,2852%, kadar pati 37,7590%, viskositas 1800 cP, dan derajat putih 66,2948. Penepungan dengan *screener hammer mill* berukuran 14 mesh menghasilkan tepung porang dengan kadar air 16,2312%, kadar glukomanan 56,9762%, kadar kalsium oksalat 0,2554%, kadar pati 36,9210%, viskositas 1950 cP, dan derajat putih 67,1066. Penepungan dengan *screener hammer mill* berukuran 25 mesh menghasilkan tepung porang dengan kadar air 16,603%, kadar glukomanan 64,3761%, kadar kalsium oksalat 0,1802%, kadar pati 28,0204%, viskositas 5342 cP, dan derajat putih 67,6738. Perlakuan terbaik diperoleh pada penggunaan *screener* berukuran 25 mesh dengan nilai rendemen, kadar glukomanan, viskositas, dan derajat putih tertinggi. Sementara, nilai kadar pati dan kadar kalsium oksalat adalah yang terendah.

Kata kunci : tepung porang, *hammer mill*, *screener* (saringan), glukomanan

**THE EFFECT OF SCREENER SIZE IN HAMMER MILL TYPE
FLOURING MACHINE ON THE PHYSICOCHEMICAL QUALITIES OF
PORANG FLOUR
ABSTRACT**

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Glucomannan is a polysaccharide that is highly present in porang tubers and has various health benefits. The one stage of glucomannan extraction is the milling process. However, the high impurity content is one of the problem in porang flour. The production of porang flour can be done with various milling methods, one of which is a hammer mill. Currently, there are also some variations of flour production tools equipped with a cyclone separator that functions to separate or reduce impurity components from glucomannan granules. This research uses a size reduction machine, that is a hammer mill equipped with a screener and a cyclone separator. Hence, the objective of this study is to investigate the influence of screener size in the hammer mill on the chemical and physical characteristics of porang flour and to determine the best screen size to be used to produce the best chemical and physical characteristics of porang flour. The screener used in this study has a size of 7-mesh, 14-mesh, and 25-mesh. Flouring using a modified hammer mill with a 7-mesh screener resulted in porang flour with 16.6273% moisture content, 56.0372% glucomannan content, 0.2852% calcium oxalate content, 37.7590% starch content, 1800 cP viscosity, and 66.2948 white degrees. Flouring with a 14 mesh hammer mill screener resulted in porang flour with a moisture content of 16.2312%, a glucomannan content of 56.9762%, a calcium oxalate content of 0.2554%, a starch content of 36.9210%, viscosity of 1950 cP, and whiteness of 67.1066. Flouring with a 25 mesh hammer mill screener resulted in porang flour with 16.603% moisture content, 64.3761% glucomannan content, 0.1802% calcium oxalate content, 28.0204% starch content, 5342 cP viscosity, and 67.6738 white degrees. The best treatment was obtained by using a 25-mesh screener with the highest yield, glucomannan content, viscosity, and whiteness. Meanwhile, the values of starch content and calcium oxalate content were the lowest.

Keywords : porang flour, hammer mill, screener, glucomannan