

## **ABSTRACT**

### **STUDY OF THE MECHANICAL EXTRACTION PROCESS OF PORANG TUBER ON THE PHYSICOCHEMISTRY OF GLUCOMANNAN FLOUR**

**By**

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Porang is a herbaceous tuber plant that is often found in forests. Porang tubers can be used as raw material for making glucomannan flour. This study aims to determine the effect of the height of the disc mill blowing pipe on the levels of calcium oxalate in porang glucomannan flour. Research with a single factor, namely the height of the disc mill blowing pipe, with 3 replications. There were 6 treatments, namely P1 (1 meter), P2 (2 meters), P3 (3 meters), P4 (4 meters), P5 (5 meters) and P6 (6 meters). The research consisted of making glucomannan flour using a disc mill at various lengths of blowing pipes, and analyzing the levels of calcium oxalate. The best treatment was tested for water content, ash content, pH measurement, solubility in alcohol, and solubility in ether. The data is presented descriptively in graphs. The results showed that the height of the disc mill blowing pipe resulted in a calcium oxalate content of glucomannan flour from porang tubers ranging from 1,30% -3,04%. The height of the disc mill blowing pipe of 1 meter produces the lowest calcium oxalate content of 1,30% with water content of 10,18%, ash content of 4,62%, pH of 6,9, solubility in alcohol 0,90%, and solubility in ether 0,12%.

**Keywords:** *porang glucomannan flour, disc mill blowing pipe, calcium oxalate*

## ABSTRAK

### KAJIAN PROSES EKSTRAKSI SECARA MEKANIS UMBI PORANG TERHADAP FISIKOKIMIA TEPUNG GLUKOMANAN

Oleh

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Porang adalah tanaman umbi-umbian herba yang sering ditemukan di dalam hutan. Umbi porang dapat dimanfaatkan sebagai bahan baku pembuatan tepung glukomanan. Penelitian ini bertujuan untuk mengetahui pengaruh ketinggian pipa peniupan *disc mill* terhadap kadar kalsium oksalat tepung glukomanan umbi porang. Penelitian dengan faktor tunggal yaitu ukuran ketinggian pipa peniupan *disc mill*, dengan 3 kali ulangan. Terdapat 6 perlakuan, yaitu P1 (1 meter), P2 (2 meter), P3 (3 meter), P4 (4 meter) P5 (5 meter) dan P6 (6 meter). Penelitian terdiri dari pembuatan tepung glukomanan menggunakan *disc mill* pada berbagai panjang pipa peniupan, dan analisis kadar kalsium oksalat. Perlakuan terbaik diuji kadar air, kadar abu, pengukuran pH, kelarutan dalam alkohol, dan kelarutan dalam eter. Data disajikan secara deskriptif dalam grafik. Hasil penelitian menunjukkan ketinggian pipa peniupan *disc mill* menghasilkan kadar kalsium oksalat tepung glukomanan dari umbi porang berkisar 1,30%-3,04%. Ketinggian pipa peniupan *disc mill* 1 meter menghasilkan kadar kalsium oksalat terendah sebesar 1,30 % dengan kadar air 10,18%, kadar abu 4,62%, pH 6,9, kelarutan dalam alkohol 0,90%, dan kelarutan dalam eter 0,12%.

**Kata Kunci:** *tepung glukomanan porang, pipa peniupan disc mill, kalsium oksalat*