

EVALUASI KUALITAS CHIPS DAN TEPUNG PORANG DARI UMBI PORANG SEGAR (*Amorphophallus oncophyllus*) PADA BERBAGAI VARIASI WAKTU PANEN DAN UKURAN UMBI

INTISARI

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Umbi porang (*Amorphophallus oncophyllus*) mengandung glukomanan yang dapat dimanfaatkan dalam berbagai bidang, namun Indonesia baru mampu memproduksi tepung porang. Berbagai penelitian telah mengkaji umbi porang dan proses pengolahannya, namun belum ada kajian terkait variasi waktu panen dan ukuran umbi porang segar terhadap kualitas chip dan tepung porang. Penelitian ini bertujuan untuk mengkaji pengaruh waktu panen dan ukuran umbi porang terhadap karakteristik umbi segar, chips, dan tepung porang.

Penelitian ini dilakukan pada Juni 2020-April 2021. Umbi porang segar diperoleh dari petani di Desa Nglanggeran, Patuk, Gunung Kidul dengan variasi waktu panen terdiri dari Juni, Juli, Agustus, September, dan Oktober. Variasi ukuran umbi terdiri dari kecil (diameter <10 cm), sedang (10 < diameter <20 cm), dan besar (diameter > 20 cm). Umbi porang tersebut diolah berdasarkan pengolahan kering. Ketebalan perajangan umbi sebesar ± 7 mm. Pengeringan dilakukan dengan *cabinet dryer* pada suhu 50°C selama 24 jam. Penggilingan dilakukan pada chips porang berkadar air $\pm 12\%$. Pemisahan mekanis dilakukan dengan ayakan tyler dan *cyclone separator*. Parameter yang diukur meliputi: suhu, massa, *bulk density*, warna, distribusi ukuran partikel, kadar air, viskositas, dan kadar glukomanan.

Hasil penelitian menunjukkan bahwa interaksi waktu panen dan ukuran umbi berpengaruh nyata ($p < 0,05$) pada (1) kadar air umbi dan warna umbi porang segar, (2) koefisien laju pengeringan dan koefisien laju perpindahan panas konvektif, (3) koefisien laju penurunan *whiteness index*, dan (4) kadar air, serta (5) viskositas tepung porang. Namun demikian, variasi waktu panen dan ukuran umbi tidak berpengaruh nyata pada (1) *bulk density* umbi porang segar, (2) *bulk density* tepung porang, (3) koefisien laju penurunan *bulk density*, (4) distribusi ukuran partikel tepung porang, (5) warna tepung porang, dan (6) kadar glukomanan tepung porang. Pemanenan umbi porang pada bulan Juni dengan ukuran sedang diperoleh *whiteness index* pada irisan umbi porang, nilai viskositas, dan kadar glukomanan paling tinggi. Dengan demikian, hasil ini dapat dimanfaatkan oleh petani dalam pemanenan umbi porang berdasarkan waktu panen dan ukuran umbi.

Kata kunci: *bulk density*, kadar glukomanan, porang, ukuran umbi, viskositas, waktu panen, *whiteness index*

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**EVALUATION OF THE QUALITY OF PORANG CHIPS AND FLOUR
FROM FRESH PORANG TUBER (*Amorphophallus oncophyllus*) AT
VARIOUS HARVESTING TIMES AND TUBER SIZES**

ABSTRACT

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Porang tubers (*Amorphophallus oncophyllus*) contain glucomannan which can be used in various fields, but Indonesia has only able to produce porang flour. Various studies have examined porang tubers and the processing process, but there has been no study related to variations in harvest time and size of fresh porang tubers on the quality of chips and porang flour. This study aims to examine the effect of harvest time and size of harvested porang tubers on the characteristics of fresh tubers, chips, and processing porang flour.

This research was conducted from June 2020-April 2021. Fresh porang tubers were obtained from farmers in Nglanggeran Village, Patuk, Gunung Kidul with variations in harvest time in June, July, August, September, and October and also variations in tuber size consisted of small (<10 cm diameter), medium (10< diameter <20 cm), and large (20 cm < diameter). The porang tubers were processed based on dry processing. The thickness of the chopped tubers is ± 7 mm. Drying was done with a cabinet dryer at 50°C for 24 hours. Milling was carried out on porang chips with a moisture content of $\pm 12\%$. Mechanical separation was carried out with a tyler sieve and a cyclone separator. Parameters measured included: temperature, mass, bulk density, color, particle size distribution, moisture content, viscosity, and glucomannan content.

The results showed that the interaction of harvest time and tuber size had a significant effect ($p < 0,05$) on (1) tuber moisture content and color of fresh porang tubers, (2) drying rate coefficient and convective heat transfer rate coefficient, (3) whiteness index reduction rate coefficient, and (4) moisture content, and (5) viscosity of porang flour. However, variations in harvest time and tuber size did not significantly affect (1) bulk density of fresh porang tubers, (2) bulk density of porang flour, (3) coefficient of reduction in bulk density, (4) particle size distribution of porang flour, (5) color of porang flour, and (6) glucomannan content of porang flour. Harvesting porang tubers in June with medium size obtained the highest whiteness index on porang tuber slices, viscosity values, and glucomannan content. Thus, these results can be utilized by farmers in harvesting porang tubers based on harvest time and tuber size.

Keyword: bulk density, glucomannan content, harvesting time, porang, tuber size, viscosity, whiteness index

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