

LAMPIRAN

1. Lampiran Jurnal A

Jurnal Teknik Kimia Vol 13, No1, September 2018

PENURUNAN KADAR KALSIMUM OKSALAT PADA UMBI PORANG (*AMORPHOPALLUS ONCOPHILLUS*) DENGAN PROSES PEMANASAN DI DALAM LARUTAN NaCl

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Abstrak

Zat Mannan (glukomanan) yang terkandung dalam Umbi Porang (Amorphopallus Oncophillus) banyak digunakan dalam industri farmasi karena glukomanan baik bagi kesehatan, dalam industri makanan, sebagai perekat, dan lainnya. Akan tetapi umbi porang tidak bisa langsung dimanfaatkan karena kandungan Kalsium Oksalatnya masih tinggi yang dapat menimbulkan rasa gatal. Tujuan penelitian ini adalah untuk mendapatkan konsentrasi larutan NaCl dan lama proses perebusan yang terbaik sehingga didapatkan reduksi Kalsium Oksalat yang paling tinggi. Penelitian dilakukan dengan cara merebus umbi porang yang sudah dipotong-potong pada suhu 80 °C, selama (5, 10, 15, 20, 25, 30) menit, dalam larutan NaCl (0, 2, 4, 6, 8)%. Hasil dari penelitian ini adalah, prosentase reduksi Kalsium Oksalat terbesar 90,9% diperoleh pada perebusan selama 25 menit dengan konsentrasi larutan NaCl, 8%.

Kata kunci: kalsium oksalat, umbi porang, Zat Mannan

2. Lampiran Jurnal B

PENGARUH TINGKAT PENCUCIAN DAN LAMA KONTAK DENGAN ETANOL

TERHADAP SIFAT FISIK DAN KIMIA TEPUNG PORANG

(Amorphophallus oncophyllus)

Effects of Multiple Ethanol Leaching with Difference Concentration on Physichal and Chemical Properties of Porang Flour (*Amorphophallus oncophyllus*)

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ABSTRACT

Porang flour is simple dry product which it produced from *Amorphophallus oncophyllus* species. It has better shelf life than fresh porang tuber, so it has a higher economic value. Porang flour consist of hydrocolloidpolysaccharide such as glucomannan, which it has ability to use as gelling agent, thickener, film former and emulsifier. Generally, porang flour has a high consist of ca-oxalate, low consist of glucomannan , and dark colour. Ethanol leaching process is needed to increase quality of porang flour to produce flour with highly glucomannan content and the best physic and chemist properties. Completely Randomized Design (CRD) used in this research with 2 factor. First factor was leaching stage, which is consist of 3 level, stage 1 with ethanol 40%, stage 2 with ethanol 40% and 60%, and stage 3 with ethanol 40%, 60%, and 80%. Second factor was contact time with 3 level, 2, 3, and 4 hours. The best treatment was washing stage 3 with 4 hours time contact, which it has 81.72% glucomannan content; 0.19% ca-oxalate content; 7400 cPs viscosity; and 49.45 Lightness value.

Key word: Porang flour, glucomannan, ca-oxalate, multiple ethanol leaching

3. Lampiran Jurnal C

Conference Paper

The Effect of Soaking Time and Temperature of Acetic Acid Solution to the Decrease of Calcium Oxalate Levels in Porang Tubers

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ABSTRACT

Porang is one of the tubers that grow easily in the plains of Indonesia, one of which is in the Madiun city area, East Java. Porang tubers can be used in various sectors, namely in food processing. Porang tubers are used as the basic material for making food, such as flour. However, porang tubers contain high levels of calcium oxalate. It can cause itchy tongue and throat. This study aimed to determine the effect of temperature and soaking time of porang tubers in 5% acetic acid solution. Soaking the porang tuber sample at 60°C had the greatest decrease percentage in calcium oxalate, which was 53.91%. Soaking the porang tubers for 60 minutes also gave the largest reduction percentage in calcium oxalate, namely 42.54%.

Keywords: Porang tubers, calcium, oxalate, acetic acid