

**ANALISIS RENDEMEN DI SETIAP TAHAPAN PROSES EKSTRAKSI
GLUKOMANAN DARI TEPUNG PORANG PADA SKALA
LABORATORIUM DAN SKALA *PILOT PLANT***

INTISARI

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Tepung glukomanan merupakan tepung dengan kadar glukomanan tinggi yang diperoleh melalui ekstraksi. Ekstraksi glukomanan dapat menggunakan bahan baku umbi porang atau tepung porang yang diekstraksi menggunakan etanol. Sementara ini, proses pembuatan tepung glukomanan dilakukan dengan skala laboratorium menggunakan bahan baku tepung porang. Saat ini juga sedang dirancang lini produksi pembuatan tepung glukomanan skala pilot. Pembuatan tepung glukomanan skala pilot ini menggunakan alat dan mesin yang berbeda dengan yang digunakan di laboratorium dan sebelumnya belum pernah diuji coba. Tujuan penelitian ini untuk mengetahui jumlah rendemen, jumlah pengotor (pati dan oksalat) yang hilang pada tahapan proses pembuatan tepung glukomanan, serta menganalisis tepung glukomanan yang dihasilkan pada skala laboratorium dengan skala pilot. Rendemen tepung glukomanan yang dihasilkan di laboratorium sebesar 54,53%, sedangkan tepung glukomanan tanpa penyaringan sebesar 53,78%. Sementara itu, rendemen tepung glukomanan skala pilot sebesar 40,93%. Jumlah pati dan kalsium oksalat yang hilang pada proses pembuatan tepung glukomanan skala laboratorium sebesar 22,1% dan 11,6%, skala laboratorium tanpa penyaringan sebesar 13,36% dan 4,2% serta skala pilot sebesar 17,87% dan 7%. Tepung glukomanan yang dihasilkan pada skala laboratorium memiliki kadar glukomanan 92,45%, kadar air 10,33%, kadar pati 5,79%, dan kalsium oksalat 0,02%. Tepung glukomanan yang dihasilkan pada skala laboratorium tanpa penyaringan memiliki kadar glukomanan 88,54%, kadar air 10,85%, kadar pati 7,6%, dan kalsium oksalat 0,03%. Tepung glukomanan yang dihasilkan pada skala pilot memiliki kadar glukomanan 92,28%, kadar air 8,19%, kadar pati 7,22%, dan oksalat 0,04%.

Kata kunci: glukomanan, tepung porang, rendemen

**YIELD ANALYSIS IN EACH STAGE OF THE GLUCOMANNAN
EXTRACTION PROCESS FROM PORANG FLOUR ON A
LABORATORY SCALE AND PILOT SCALE**

ABSTRACT

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Glucomannan flour is flour with high levels of glucomannan which is obtained through extraction. Glucomannan extraction can use raw materials such as porang tubers or porang flour which is extracted using ethanol. Meanwhile, the process of making glucomannan flour is carried out on a laboratory scale using porang flour as the raw material. Currently, a pilot scale production line for glucomannan flour is being designed. This pilot scale production of glucomannan flour uses tools and machines that are different from those used in the laboratory and have never been tested before. The aim of this research was to determine the yield, the amount of impurities (starch and oxalate) lost during the process stages of making glucomannan flour, and to analyze the glucomannan flour produced on a laboratory scale and a pilot scale. The yield of glucomannan flour produced in the laboratory was 54,53%, while glucomannan flour without filtering was 53,78%. Meanwhile, the yield of glucomannan flour on a pilot scale was 40,93%. The amount of starch and calcium oxalate lost in the process of making glucomannan flour on a laboratory scale was 22,1% and 11,6%, on a laboratory scale without filtering it was 13,36% and 4,2% and on a pilot scale it was 17,87% and 7%. Glucomannan flour produced on a laboratory scale contained 92,45% glucomannan, 10,33% moisture, 5,79% starch, and 0,02% calcium oxalate. Glucomannan flour produced on a laboratory scale without filtering contained 88,54% glucomannan, 10,85% moisture, 7,6% starch, and 0,03% calcium oxalate. The glucomannan flour produced on a pilot scale contained 92,28% glucomannan, 8,19% moisture, 7,22% starch, and 0,04% oxalate content.

Keyword: glucomannan, porang flour, yield