ABSTRAK

PENGARUH KONSENTRASI ENZIM GLUKOAMILASE DAN WAKTU SAKARIFIKASI TERHADAP KADAR GULA PEREDUKSI HASIL HIDROLISIS ENZIMATIS PATI BIJI ALPUKAT (*Persea Americana*)

Niken Destazariah, 2026, 46 Halaman, 4 Tabel, 8 Gambar, 4 Lampiran

Biji alpukat (*Persea americana*) merupakan limbah pertanian yang belum dimanfaatkan secara optimal, padahal memiliki kandungan pati yang cukup tinggi sehingga berpotensi digunakan sebagai bahan baku pembuatan sirup glukosa. Proses hidrolisis enzimatis pati dipengaruhi oleh konsentrasi enzim glukoamilase dan waktu sakarifikasi yang berperan dalam pembentukan glukosa. Penelitian ini bertujuan untuk mengetahui pengaruh konsentrasi enzim glukoamilase dan waktu sakarifikasi terhadap kadar glukosa hasil hidrolisis enzimatis pati biji alpukat serta karakteristik sirup glukosa yang dihasilkan. Penelitian dilakukan dengan variasi konsentrasi enzim glukoamilase 0,5%; 1%; 1,5%; 2%; dan 2,5%, serta waktu sakarifikasi 48 jam dan 72 jam. Karakteristik hidrolisat yang dihasilkan dianalisis berdasarkan parameter kadar gula pereduksi, pH, kadar air, dan kadar abu. Hasil penelitian menunjukkan bahwa peningkatan konsentrasi enzim glukoamilase dan waktu sakarifikasi cenderung meningkatkan kadar gula pereduksi serta menurunkan kadar air dan kadar abu. Perlakuan terbaik diperoleh pada konsentrasi enzim 2,5% dan waktu sakarifikasi 72 jam dengan kadar gula pereduksi 1,3126%. Karakteristik hidrolisat pada kondisi terbaik yang didapat yaitu pH 5,3, kadar air 54,5785%, dan kadar abu 0,5415%. Berdasarkan SNI 01-2978-1992, parameter pH dan kadar abu telah memenuhi standar, sedangkan kadar gula pereduksi dan kadar air belum memenuhi persyaratan.

Kata Kunci : biji alpukat, hidrolisis enzimatis, sakarifikasi, glukoamilase, sirup glukosa.

ABSTRACT

EFFECT OF GLUCOAMYLASE ENZYME CONCENTRATION AND SACCHARIFICATION TIME ON REDUCING SUGAR CONTENT FROM THE ENZYMATIC HYDROLYSIS OF AVOCADO SEED STARCH (Persea Americana)

Niken Destazariah, 46 *Pages*, 4 *Tables*, 8 *Images*, 4 *Appendices*

Avocado seeds (Persea americana) are an agricultural byproduct that has not yet been fully utilized, even though they have a relatively high starch content, making them a potential raw material for glucose syrup production. The enzymatic hydrolysis of starch is influenced by the concentration of the enzyme glucoamylase and the saccharification time, both of which play a role in glucose formation. This study aims to determine the effects of glucoamylase enzyme concentration and saccharification time on the glucose content resulting from the enzymatic hydrolysis of avocado seed starch, as well as the characteristics of the resulting glucose syrup. The study was conducted using varying concentrations of glucoamylase enzyme (0.5%, 1%, 1.5%, 2%, and 2.5%) and saccharification times of 48 hours and 72 hours. The characteristics of the resulting hydrolysate were analyzed based on the parameters of reducing sugar content, pH, moisture content, and ash content. The results of the study show that increasing the concentration of glucoamylase and the saccharification time tends to increase the reducing sugar content and decrease the moisture and ash content. The best results were obtained at an enzyme concentration of 2.5% and a saccharification time of 72 hours, with a reducing sugar content of 1.3126%. The characteristics of the hydrolysate under optimal conditions were a pH of 5.3, a moisture content of 54.5785%, and an ash content of 0.5415%. According to SNI 01-2978-1992, the pH and ash content meet the standards, while the reducing sugar content and moisture content do not yet meet the requirements.

Keywords : *avocado seeds, enzymatic hydrolysis, saccharification, glucoamylase, glucose syrup.*