ABSTRAK

Hidrolisis protein merupakan proses untuk mendegradasi protein menjadi peptida rantai pendek dan asam amino. Tujuan dari penelitian ini yaitu untuk mengetahui aktivitas enzim protease dari *Bacillus subtilis* pada pembuatan hidrolisat protein dari limbah udang, serta mengetahui karakteristik hidrolisat protein dari limbah udang. Metode yang digunakan pada penelitian ini yaitu metode observasi skala laboratorium. Penelitian ini dilakukan dalam tiga tahap. Tahap pertama adalah preparasi sampel, tahap kedua yaitu proses hidrolisis protein limbah udang, dan tahap ketiga yaitu uji proksimat dan asam amino hidrolisat protein limbah udang. Berdasarkan hasil penelitian, diperoleh aktivitas enzim protease setelah 0 jam; 6 jam; 12 jam; 18 jam; 24 jam; 30 jam; dan 36 jam berturut-turut yaitu 0,23 U/mL; 0,353 U/mL; 0,391 U/mL; 0,612 U/mL; 0,639 U/mL; 0,641 U/mL; 0,606 U/mL. Kandungan proksimat hidrolisat protein limbah udang diperoleh kadar air 4,29%; kadar abu 10,32%; kadar lemak 0,39%; kadar protein 48,12%; dan kadar karbohidrat 36,89%. Kandungan asam amino hidrolisat protein limbah udang diperoleh asam amino non esensial sebanyak 8 jenis dan asam amino esensial sebanyak 10 jenis.

Kata kunci: *Hidrolisat protein, limbah udang, hidrolisis enzimatik, enzim protease*

ABSTRACT

Protein hydrolysis is a process to degrade protein into short chain peptides and amino acids. The purpose of this study was to determine the activity of the *Bacillus subtilis* protease enzyme in the production of protein hydrolysate from shrimp waste, as well as to determine the characteristics of protein hydrolysate from shrimp waste. The method used in this study was the laboratory scale observation method. This study was conducted in three stages. The first stage is sample preparation, the second stage is the process of shrimp waste protein hydrolysis, and the third stage is the proximate and amino acid test of shrimp waste protein hydrolysate. Based on the results of the study, the protease enzyme activity was obtained after 0 hours; 6 hours; 12 hours; 18 hours; 24 hours; 30 hours; and 36 hours respectively, namely 0.23 U / mL; 0.353 U / mL; 0.391 U / mL; 0.612 U / mL; 0.639 U / mL; 0.641 U / mL; 0.606 U / mL. The proximate content of shrimp waste protein hydrolysate obtained water content of 4.29%; ash content of 10.32%; fat content of 0.39%; protein content of 48.12%; and carbohydrate content of 36.89%. The amino acid content of shrimp waste protein hydrolysate contains 8 types of non-essential amino acids and 10 types of essential amino acids.

Keywords: *Protein hydrolysate, shrimp waste, enzymatic hydrolysis, protease enzyme*