Pengaruh Perbandingan Eksopeptidase Dan Endopeptidase Protease Terhadap Karakteristik Peptida Bioaktif Kulit Sapi Sebagai Antimikroba *Pseudomonas aeruginosa.*

The Effect of the Ratio of Exopeptidase and Endopeptidase Protease on the Characteristics of Bioactive Peptides from Cowhide as an Antimicrobial Agent against Pseudomonas aeruginosa.

Dr. Ir. Silvia Oktavia Nur Yudiastuti, S.TP., M.T.P.

Noor Ifansyah
Study Program of Food Engineering Technology
Majoring of Agricultural Technology

ABSTRACT

Bioactive peptides are peptides consisting of amino acids linked by imide bonds. Bioactive peptides are found in food proteins that have undergone enzymatic hydrolysis. Exopeptidases and endopeptidases proteases can catalyze the breakdown of amino acids, producing more short-chain peptide fragments. This study aimed to evaluate the synergistic effects of endoprotease (bromelain) and Exoprotease (callotropin) enzyme concentrations on the antioxidant and antimicrobial activities of bioactive peptides derived from cowhide. Six treatment ratios of callotropin to bromelain (0:100, 20:80, 40:60, 60:40, 80:20, and 100:0) were applied using a Completely Randomized Design (CRD). The results showed that all treatments had significantly different effects ($P<0.05$) on both antioxidant and antimicrobial activities. The highest antimicrobial activity was obtained by treatment P1 (0:100) with an inhibition property of 36,45 mg/mL against *Pseudomonas aeruginosa* bacteria. Among all variations, treatment P2 with a calotropin ratio of 20:80 bromelain was identified as the optimal treatment in the antioxidant activity test, showing 83.03% and protein content of 9.68%.

Kata Kunci : Endopeptidase, Exopeptidase, Bioactive Peptides of Cowhide, Antimicrobial