

INTISARI

PENGARUH LAMA HIDROLISIS MENGGUNAKAN ENZIM PAPAIN TERHADAP AKTIVITAS ANTIOKSIDAN HIDROLISAT PROTEIN JEROAN BELUT

Penelitian ini bertujuan untuk mengetahui pengaruh lama hidrolisis secara enzimatis menggunakan enzim papain komersial terhadap karakteristik hidrolisat protein jeroan belut (HPJB) dan aktivitas antioksidannya. Jeroan belut yang telah dihaluskan kemudian dihidrolisis selama 24, 48, 72 dan 96 jam dengan 0 jam sebagai kontrol pada suhu 55°C dan pH 7 menggunakan enzim papain PAYA konsentrasi 2%. Sampel HPJB diuji karakteristiknya yang meliputi uji kadar protein terlarut dan derajat hidrolisis, serta uji aktivitas antioksidan menggunakan metode DPPH (1,1-difenil-2-pikrilhidrazil) dan metode ABTS (2,2-azinobis-3-Ethylbenzothiazoline-6-Sulfonic Acid). Hasil penelitian menunjukkan bahwa konsentrasi protein terlarut dan derajat hidrolisis mengalami peningkatan seiring penambahan lama hidrolisis. Berdasarkan uji aktivitas antioksidan, HPJB yang dihidrolisis selama 72 jam menghasilkan aktivitas antioksidan terbaik pada metode DPPH dan ABTS yaitu masing-masing senilai 71,33% dan 49,19 µgTE/mg dengan nilai DH 48,71%. Hasil samping jeroan belut berpotensi untuk digunakan sebagai sumber antioksidan alami.

Kata kunci: aktivitas antioksidan, hidrolisis enzimatis, enzim papain, hidrolisat protein jeroan belut

ABSTRACT

THE EFFECT OF HYDROLYSIS DURATION USING PAPAIN ENZYME ON ANTIOXYDANT ACTIVITIES OF SWAMP EEL INTESTINES PROTEIN HYDROLYSATE

This study aims to investigate the effect of enzymatic hydrolysis duration using commercial papain enzyme on the characteristics of eel intestine protein hydrolysate (EIPH) and its antioxidant activity. The eel intestines were homogenized and then hydrolyzed for 24, 48, 72, and 96 hours, with 0 hours as the control, at a temperature of 55°C and pH 7 using PAYA papain enzyme with 2% concentration. The EIPH samples were characterized by determining the soluble protein content and degree of hydrolysis, as well as evaluating the antioxidant activity using the DPPH (1,1-diphenyl-2-picrylhydrazyl) and ABTS (2,2-azinobis-3-ethylbenzothiazoline-6-sulfonic acid) methods. The results showed that the concentration of soluble protein and degree of hydrolysis increased with increasing hydrolysis time. Based on the antioxidant activity test, the EIPH hydrolyzed for 72 hours resulted in the best antioxidant activity in the DPPH and ABTS methods, with values of 71,33% and 49,19 µgTE/mg respectively, with a DH value of 48.71%. The results suggest that eel intestine by-products have the potential to be used as a natural antioxidant source.

Keywords: antioxidant activity, enzymatic hydrolysis, papain enzyme, eel intestine protein hydrolysate