

Intisari

PENGARUH KONSENTRASI ENZIM PAPAIN TERHADAP AKTIVITAS ANTIOKSIDAN HIDROLISAT PROTEIN JEROAN BELUT SAWAH

Belut merupakan salah satu yang terbesar di Indonesia yang diolah menjadi berbagai produk olahan. Pengolahan tersebut menghasilkan hasil samping berupa jeroan yang bisa dijadikan produk bernilai tambah, salah satunya hidrolisat protein. Penelitian ini bertujuan untuk mengetahui pengaruh konsentrasi enzim papain terhadap karakteristik hidrolisat protein jeroan belut dan aktivitas antioksidannya. Jeroan belut yang telah dihidrolisis dengan konsentrasi enzim 0%, 1%, 2%, 3%, 4%, 5%, dan 6% (b/b jeroan) selama 48 jam di suhu 55°C. Kemudian, disentrifugasi pada kecepatan 5000 rpm 4°C selama 20 menit, lalu dikeringkan dengan oven selama 48 jam pada suhu 80°C. Hidrolisat protein jeroan belut (HPJB) dianalisis kadar protein terlarut, derajat hidrolisis, serta aktivitas antioksidan DPPH dan ABTS. Rendemen HPJB berkisar antara 7,52%±0,24 hingga 15,26%±0,49. HPJB menghasilkan kadar protein terlarut dan derajat hidrolisis tertinggi di konsentrasi 6% dengan nilai 0,975 mg/mL dan 31,84%. Pengujian penghambatan radikal bebas DPPH menghasilkan hasil tidak berbeda nyata antar perlakuan dengan persentase sebesar 48,85%-82,42%, sedangkan analisis antioksidan ABTS menghasilkan aktivitas antioksidan paling tinggi dan memiliki perbedaan yang signifikan dibanding perlakuan lainnya pada perlakuan p6 sebesar 1475,498 µg/g. Secara keseluruhan, pemberian konsentrasi enzim papain menghasilkan pengaruh yang beda nyata terhadap rendemen, protein terlarut, derajat hidrolisis, p6 sebagai perlakuan dengan aktivitas antioksidan tertinggi.

Kata kunci : antioksidan, hidrolisat protein, konsentrasi enzim.

Abstract

EFFECT OF PAPAIN ENZYME CONCENTRATION ON THE ANTIOXIDANT ACTIVITY OF PROTEIN HYDROLYSATE OF SWAMP EEL VISCERA

The eel is one of the largest in Indonesia and is processed into various products. This processing produces by-products in the form of viscera that can be used as value-added products, one of which is protein hydrolyzate. This study aims to determine the effect of papain enzyme concentration on the hydrolyzate characteristics of eel viscera protein and its antioxidant activity. Eel viscera that had been hydrolyzed with enzyme concentrations of 0%, 1%, 2%, 3%, 4%, 5%, and 6% (b/b viscera) for 48 hours at 55°C. Then, it was centrifuged at 5000 rpm 4°C for 20 minutes, then dried in an oven for 48 hours at 80°C. Protein hydrolyzate of viscera swamp eel (HPJB) was analysed for dissolved protein content, degree of hydrolysis, and antioxidant activity of DPPH and ABTS. HPJB yields ranged from 7,52%±0,24 to 15,26%±0,49. HPJB produced the highest levels of dissolved protein and degree of hydrolysis at a concentration of 6% with values of 0,975 mg/mL and 31,84%. The DPPH free radical inhibition test yielded results that were not significantly different between treatments with a percentage of 48,85%-82,42%, while the ABTS antioxidant analysis produced the highest antioxidant activity and had a significant difference compared to other treatments in the p6 treatment of 1475,498 µg /g. Overall, the concentration of the papain enzyme produced a significantly different effect on the yield, dissolved protein, degree of hydrolysis, and p6 as the treatment with the highest antioxidant activity.

Keywords : antioxidant, enzyme concentration, protein hydrolysate