

PEMANFAATAN KULIT IKAN RED DEVIL (*Amphilophus* sp.) SEBAGAI BAHAN BAKU GELATIN DAN HIDROLISAT PROTEIN

INTISARI

Ikan red devil (*Amphilophus* sp.) merupakan ikan invasif yang mendiami perairan Indonesia, salah satunya Waduk Sermo. Selain mengganggu ekosistem, Red devil mempunyai nilai ekonomis yang rendah, karena daging yang kurang enak dan tulang yang tebal, sehingga perlu pemanfaatan. Penelitian ini memanfaatkan kulit karena penyumbang terbesar bagian yang kurang dimanfaatkan. Kulit tersebut dibuat menjadi gelatin sebagai bahan baku alternatif pengganti sapi dan babi dan hidrolisat protein sebagai sumber peptida bioaktif, diantaranya antioksidan. Penelitian ini bertujuan untuk mengetahui karakteristik fisiko-kimia gelatin dengan variasi konsentrasi asam asetat, yaitu 1%, 2%, dan 3% dan mengetahui aktivitas antioksidan hidrolisat protein dengan variasi konsentrasi enzim papain 1%, 3%, 5%, dan 7%. Gelatin diuji rendemen, pH, protein, air, abu, viskositas, dan kekuatan gel. Gelatin terbaik dihasilkan dari perlakuan asam asetat 3% dengan pH 5,57, viskositas 6,84 cP dan kekuatan gel 257,17 bloom. Gelatin yang dihasilkan sesuai dengan standarisasi GMIA dan SNI-06-3735-1995. Hidrolisat protein dilakukan pengujian rendemen, kadar protein terlarut, derajat hidrolisis, aktivitas antioksidan DPPH dan ABTS. Hidrolisat protein terbaik yang dihasilkan berdasarkan aktivitas antioksidannya merupakan perlakuan enzim papain 7% dengan aktivitas antioksidan DPPH 60,844% dan ABTS 53,666%. Berdasarkan aktivitas antioksidan, kulit Red devil potensial dijadikan bahan baku gelatin dan hidrolisat protein.

Kata kunci : Kulit Red devil, Gelatin, Hidrolisat Protein Ikan , Aktivitas antioksidan, Asam asetat, Papain

UTILIZATION OF RED DEVIL FISH SKIN (*Amphilophus* sp.) AS RAW MATERIAL FOR GELATIN AND PROTEIN HYDROLYSATE

ABSTRACT

Red devil fish (*Amphilophus* sp.) is an invasive fish that inhabits Indonesian waters, one of which is Sermo Reservoir. In addition to disrupting the ecosystem, Red devil has a low economic value, due to unpalatable meat and thick bones, so it needs to be utilised. This research utilises the skin because it is the largest contributor of underutilised parts. The skin was made into gelatin as an alternative raw material to cattle and pork and protein hydrolysate as a source of bioactive peptides, including antioxidants. This study aims to determine the physico-chemical characteristics of gelatin with varying concentrations of acetic acid, namely 1%, 2%, and 3% and to determine the antioxidant activity of protein hydrolysates with varying concentrations of papain enzyme 1%, 3%, 5%, and 7%. Gelatin was tested for yield, pH, protein, water, ash, viscosity, and gel strength. The best gelatin was produced from 3% acetic acid treatment with pH 5.57, viscosity 6.84 cP and gel strength 257.17 bloom. The gelatin produced was in accordance with GMIA standardisation and SNI-06-3735-1995. Protein hydrolysates were tested for yield, soluble protein content, degree of hydrolysis, DPPH and ABTS antioxidant activity. The best protein hydrolysate produced based on its antioxidant activity was 7% papain enzyme treatment with DPPH antioxidant activity of 60.844% and ABTS 53.666%. Based on antioxidant activity, Red devil skin has the potential to be used as raw material for gelatin and protein hydrolysate.

Keywords: Red devil skin, Gelatin, Fish Protein Hydrolysate, Antioxidant activity, Acetic acid, Papain