

INTISARI

PEMBUATAN PROTEIN HIDROLISAT DARI IKAN DAN PEMANFAATAN LIMBAHNYA UNTUK TEPUNG IKAN

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Penelitian ini dilakukan untuk mengkaji proses pembuatan protein hidrolisat dari ikan serta sifat-sifat kimianya dan mengkaji penggunaan limbah padatannya untuk dijadikan tepung ikan. Materi penelitian terdiri atas 4 jenis ikan laut dimana 3 diantaranya termasuk ikan demersal yaitu ikan petek (*Leiognathus splendens*), ikan kuniran (*Upeneus sulphureus*), ikan merah (*Priacanthus tayenus*) dan 1 jenis ikan pelagik yaitu ikan kembung (*Rastrelliger kanagurta*).

Pembuatan protein hidrolisat ikan dilakukan dengan cara fermentasi dengan menambahkan larutan 5% asam asetat sebanyak 2/3 bagian berat ikan dan garam sebanyak 10% berat ikan dan kemudian menginkubasikan pada suhu kamar selama 5 hari. Dilakukan analisis pada produk protein hidrolisat ikan dengan 3 kali ulangan. Data yang diperoleh dianalisis dengan metode rancangan acak lengkap (*Completely Randomized Design*), selanjutnya dilakukan analisis variansi (ANOVA) dengan tingkat kepercayaan 95%.

Dari hasil penelitian didapat rendemen protein hidrolisat ikan petek sebesar 78,7% (v/b), ikan kuniran sebesar 84,85% (v/b), ikan kembung sebesar 78,05% (v/b), dan ikan merah sebesar 81,20% (v/b). Kadar protein hidrolisat ikan petek sebesar 4,81% dan ikan merah sebesar 4,30% tidak menunjukkan perbedaan nyata ($p > 0,05$), namun berbeda nyata ($p < 0,05$) dengan kadar protein hidrolisat ikan kuniran sebesar 6,38% dan ikan kembung sebesar 8,43%.

Pemanfaatan limbah pembuatan protein hidrolisat ikan menjadi tepung ikan dengan melakukan pengeringan selama 15 jam pada suhu 70-80°C. Penambahan waktu pengeringan tidak memberikan perubahan kelembaban pada tepung. Kadar air pada hasil berupa tepung ikan 80 mesh yaitu masing-masing sebesar 8,22% untuk tepung ikan petek, 5,67% untuk tepung ikan kuniran, 7,58% untuk tepung ikan kembung dan tepung ikan merah sebesar 7,08%, yang menunjukkan perbedaan yang nyata ($p < 0,05$) diantara keempat tepung ikan tersebut. Rendemen tepung ikan yang diperoleh yaitu 21,12% (b/b) untuk ikan petek, 20,52% (b/b) untuk ikan kuniran, 21,69% (b/b) untuk ikan kembung dan ikan merah sebesar 20,44% (b/b). Kadar protein tepung ikan kuniran sebesar 39,96% tidak berbeda nyata ($p > 0,05$) dengan kadar protein tepung ikan merah (39,67%), tetapi berbeda nyata ($p < 0,05$) dengan kadar protein tepung ikan petek (42,36%) dan berbeda nyata ($p < 0,05$) pula dengan kadar protein tepung ikan kembung (37,94%).

(Kata kunci : ikan, fermentasi, protein hidrolisat, tepung ikan)

ABSTRACT

PROTEIN HYDROLYSATES PROCESSING FROM FISH AND THE USE OF THE WASTE FOR FISH MEAL

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The study was aimed to conduct on the protein hydrolysates production from fish with the chemical characteristic and the use of the waste for fish meal. The material for this study were 4 kinds of sea fish which 3 kinds were demersal fish, such as petek fish (*Leiognathus splendens*), kuniran fish (*Upeneus sulphureus*), merah fish (*Priacanthus tayenus*) and a kind of pelagic fish was kembung fish (*Rastrelliger kanagurta*).

The processing of protein hydrolysates was applied by fermentation with the addition of 5% acetic acid aqueous as much as 2/3 part of the weight of the fish and salt was added at 10% (w/w) of the weight of the fish and then incubation at room temperature for 5 days. The analysis on the product of fish protein hydrolysates as fish sauce was based on 3 duplicate samples. The data were analysed with Completely Randomized Design Methode followed by analysis variance (ANOVA) with 95% confident interval for mean.

The result showed that rendement of protein hydrolysates of petek fish was 78,7% (v/w), kuniran fish was 84,85% (v/w), kembung fish was 78,05% (v/w), and red fish was 81,2% (v/w). Protein content of hydrolysates of petek fish was 4,81% and red fish was 4,30%, those were not significantly different ($p > 0,05$), but the protein content of hydrolysates of kuniran fish (6,38%) and kembung fish (8,43%) was found sigificantly different ($p < 0,05$).

The time taken for converting waste of protein hydrolysates processing into fish meal, were about 15 hours at 70-80°C. Prolong time resulted no change of moisture in the meal. Water content of blended 80 mesh meal found 8,22%; 5,67%; 7,58%; and 7,08% for petek fish, kuniran fish, kembung fish and red fish respectively, and they were significantly different ($p < 0,05$). The rendement of fish meal were 21,12% (w/w) for petek fish, 20,52% (w/w) for kuniran fish, 21,69% (w/w) for kembung fish, and 20,44% (w/w) for red fish. Protein content of kuniran fish meal was 39,96%, it was not significantly different ($p > 0,05$) with that of red fish (39,67%) but significantly different ($p < 0,05$) with that of petek fish (42,36%) and significantly different ($p < 0,05$) with that of kembung fish (37,94%).

(Key words : fish, fermentation, protein hydrolysates, fish meal)