

ABSTRACT

THE EFFECT OF MORINGA LEAF FLOUR (*Moringa oleifera*) ADDITION ON THE CHEMICAL AND SENSORY CHARACTERISTICS OF TORPEDO SCAD FISH NUGGET (*Megalaspis cordyla*)

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Fish nugget as a frozen ready-to-eat food product is generally high in protein but low in dietary fiber, necessitating fortification with functional ingredients. Moringa leaf flour (*Moringa oleifera*) contains 19.2 g/100 g of fiber, 27.1 g/100 g of protein, as well as minerals and antioxidants that have the potential to enhance the nutritional value of nuggets. This study aimed to determine the effect of moringa leaf flour addition on the chemical and sensory characteristics of torpedo scad fish nuggets (*Megalaspis cordyla*) and to identify the optimal concentration in accordance with SNI 7758:2013. This study was arranged in a non-factorial design with four replications using a Randomized Complete Block Design (RCBD). The treatments consisted of six combinations of torpedo scad fish and moringa leaf flour, namely P0 (100 g : 0 g), P1 (99 g : 1 g), P2 (98 g : 2 g), P3 (97 g : 3 g), P4 (96 g : 4 g), and P5 (95 g : 5 g). Data were analyzed using Bartlett's test and Tukey's additivity test, followed by analysis of variance and further analysis using the Honestly Significant Difference (HSD) test at the 5% significance level. The results showed that the addition of moringa leaf flour had a highly significant effect on all parameters examined. Treatment P2 (torpedo scad fish 98 g : moringa leaf flour 2 g) was selected as the best formulation, with a moisture content of 44.41%, ash content of 2.51%, a very compact texture (score 2.50), hardness of 377.12 gF/cm², protein content of 18.7%, fat content of 1.2%, crude fiber content of 2.2%, and antioxidant activity with an IC₅₀ value of 331.58 ppm.

Keywords: fish nugget, torpedo scad, moringan leaf flour

ABSTRAK

PENGARUH PENAMBAHAN TEPUNG DAUN KELOR (*Moringa oleifera* L.) TERHADAP KARAKTERISTIK KIMIA DAN SENSORI NUGET IKAN BEKRE (*Megalaspis cordyla*)

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Nugget ikan sebagai produk pangan beku siap saji umumnya tinggi protein namun rendah serat, sehingga diperlukan fortifikasi menggunakan bahan fungsional. Tepung daun kelor (*Moringa oleifera*) mengandung 19,2 g/100 g serat, 27,1 g/100 g protein, serta mineral dan antioksidan yang berpotensi meningkatkan nilai gizi nugget. Tujuan dari penelitian ini untuk mengetahui pengaruh penambahan tepung daun kelor terhadap karakteristik kimia dan sensori nugget ikan bekre serta menentukan konsentrasi terbaik sesuai SNI 7758:2013. Penelitian ini disusun secara non faktorial dengan 4 kali ulangan dalam Rancangan Acak Kelompok Lengkap (RAKL). Perlakuan terdiri atas enam perlakuan penambahan ikan bekre dan tepung daun kelor yaitu P0 (100 g : 0 g), P1 (99 g : 1 g), P2 (98 g : 2 g), P3 (97 g : 3 g), P4 (96 g : 4 g), dan P5 (95 g : 5 g). Data yang diperoleh dianalisis dengan uji Barlett dan uji Tuckey lalu dilanjutkan dengan analisis ragam dan uji lanjutan menggunakan uji Beda Nyata Jujur (BNJ) pada taraf 5%. Hasil penelitian menunjukkan bahwa penambahan tepung daun kelor berpengaruh sangat nyata terhadap seluruh parameter yang diuji. Perlakuan P2 (ikan bekre 98 g : tepung daun kelor 2 g) terpilih sebagai formulasi terbaik dengan kadar air 44,41%, kadar abu 2,51%, tekstur sangat kompak (skor 2,50), *hardness* 377,12 gF/cm², kadar protein 18,7%, kadar lemak 1,2%, kadar serat kasar 2,2%, dan aktivitas antioksidan dengan nilai IC₅₀ 331,58 ppm.

Kata kunci: nugget ikan, ikan bekre, tepung daun kelor