PENGARUH VARIASI CAMPURAN IKAN KEMBUNG, BAYAM HIJAU (*AMARANTHUS VIRIDIS*), DAN DAUN KELOR (*MORINGA OLEIFERA*) TERHADAP SIFAT FISIK, ORGANOLEPTIK, KADAR PROTEIN DAN ZAT BESI PRODUK NUTRIPRO NUGGET

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ABSTRAK

Latar Belakang. Anemia masih menjadi masalah gizi tinggi pada remaja akibat kehilangan darah saat menstruasi dan asupan zat besi yang kurang. Pengembangan produk pangan berbasis sumber protein hewani dan nabati, seperti ikan kembung, bayam hijau, dan daun kelor, berpotensi menjadi alternatif pencegahan anemia melalui produk nugget bergizi tinggi.

Tujuan. Penelitian ini bertujuan mengetahui pengaruh variasi campuran ikan kembung, bayam hijau, dan daun kelor terhadap sifat fisik, organoleptik, kadar protein, dan kadar zat besi NutriPro Nugget.

Metode. Penelitian menggunakan desain eksperimental semu (quasi experiment) dengan empat perlakuan, yaitu A (100% ikan kembung), B (80%:10%:10%), C (70%:15%:15%), dan D (60%:20%:20% ikan kembung:bayam hijau:daun kelor). Pengujian meliputi analisis sifat fisik secara subjektif, uji organoleptik metode hedonik dengan 20 panelis agak terlatih, pengukuran kadar protein metode Kjeldahl, dan kadar zat besi menggunakan Spektrofotometri Serapan Atom.

Hasil. Variasi campuran berpengaruh terhadap sifat fisik nugget (warna, aroma, rasa, tekstur), namun uji organoleptik tidak menunjukkan perbedaan signifikan ($p>0,05$). Kadar protein berbeda signifikan antarperlakuan ($p<0,05$), tertinggi pada perlakuan A (6,45%) dan terendah pada B (5,37%), namun tetap memenuhi SNI 7758:2013. Kadar zat besi tidak berbeda signifikan antarperlakuan ($p=0,440$), berkisar antara 3,14–5,44 mg.

Kesimpulan. Variasi campuran berpengaruh terhadap sifat fisik dan kadar protein, tetapi tidak terhadap kesukaan organoleptik maupun kadar zat besi. Perlakuan B direkomendasikan sebagai formulasi terbaik karena menghasilkan kadar protein (5,37%) dan zat besi (3,74 mg) yang telah memenuhi standar SNI, sehingga memberikan keseimbangan kandungan protein dan zat besi NutriPro Nugget

Kata Kunci : ikan kembung, bayam, kelor, protein, zat besi

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THE EFFECT OF VARIATIONS IN A MIXTURE OF MACKEREL FISH, GREEN SPINACH (AMARANTHUS VIRIDIS), AND MORINGA OLEIFERALEAVES ON THE PHYSICAL, ORGANOLEPTIC, PROTEIN, AND IRON CONTENT OF NUTRIPRO NUGGET PRODUCTS

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ABSTRAC

Background. Anemia remains a major nutritional problem among adolescents due to blood loss during menstruation and insufficient iron intake. The development of food products based on animal and plant protein sources, such as mackerel, green spinach, and moringa leaves, has the potential to serve as an alternative for preventing anemia through highly nutritious nuggets.
Objective. This study aims to determine the effect of varying mixtures of mackerel, green spinach, and moringa leaves on the physical and organoleptic properties, protein content, and iron content of NutriPro Nuggets.
Methods. The study used a quasi-experimental design with four treatments: A (100% mackerel), B (80%:10%:10%), C (70%:15%:15%), and D (60%:20%:20% mackerel:green spinach:moringa leaves). The testing included a subjective analysis of physical properties, a hedonic organoleptic test with 20 moderately trained panelists, protein content measurement using the Kjeldahl method, and iron content measurement using atomic absorption spectrophotometry.
Results. Variations in the mixture composition affected the physical properties of the nuggets (color, aroma, taste, texture); however, the organoleptic test did not reveal any significant differences ($p > 0.05$). Protein content differed significantly among treatments ($p < 0.05$), with the highest in treatment A (6.45%) and the lowest in treatment B (5.37%), but all still met SNI 7758:2013 standards. Iron content did not differ significantly among treatments ($p = 0.440$), ranging from 3.14 to 5.44 mg.
Conclusion. Variations in the mixture composition affect the physical properties and protein content, but not the organoleptic acceptability or iron content. Treatment B was recommended as the best formulation because it yields protein (5.37%) and iron (3.74 mg) levels that meet SNI standards, thereby providing a balanced protein and iron content in the NutriPro Nugget.

Keywords: mackerel, spinach, moringa, protein, iron

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