SIFAT FISIKOKIMIA DAN ORGANOLEPTIK MI BEBAS GLUTEN BERBASIS TEPUNG GANYONG DAN TEPUNG BIJI AMARANTH SEBAGAI ALTERNATIF PANGAN BAGI INTOLERANSI GLUTEN

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Abstrak

Intoleransi gluten merupakan kondisi yang mengharuskan individu membatasi konsumsi pangan mengandung gluten sehingga diperlukan alternatif produk berbasis bahan non-terigu. Tepung ganyong (*Canna edulis* Kerr.) dan tepung biji amaranth (*Amaranthus* sp.) berpotensi dimanfaatkan sebagai bahan baku mi kering bebas gluten karena memiliki kandungan gizi yang baik. Penelitian ini bertujuan mengevaluasi karakteristik fisik, kimia, dan organoleptik mi kering berbasis tepung ganyong dan tepung biji amaranth serta menentukan formulasi terbaik. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan tiga formulasi, yaitu F1 (35%:15%), F2 (25%:25%), dan F3 (15%:35%). Analisis proksimat, kadar kalsium, dan daya serap air dilakukan menggunakan uji One-Way ANOVA yang dilanjutkan Duncan Multiple Range Test (DMRT), sedangkan data organoleptik dianalisis menggunakan uji Kruskal–Wallis dan Mann–Whitney. Hasil penelitian menunjukkan bahwa formulasi berpengaruh signifikan terhadap kadar karbohidrat ($p=0,041$), daya serap air ($p=0,005$), warna ($p=0,000$), dan tekstur ($p=0,001$), tetapi tidak berpengaruh signifikan terhadap kadar air, kadar abu, protein, lemak, kalsium, aroma, maupun rasa ($p>0,05$). Berdasarkan metode De Garmo, formulasi F2 (25% tepung ganyong:25% tepung biji amaranth) merupakan formulasi terbaik dengan kandungan energi 143,35 kkal, protein 2,52 g, lemak 1,36 g, karbohidrat 30,27 g, dan kalsium 49,43 mg per takaran saji 50 g.

Kata kunci: Intoleransi Gluten, Mi Kering, Tepung Amaranth, Tepung Ganyong, Proksimat

PHYSICOCHEMICAL AND ORGANOLEPTIC PROPERTIES OF GLUTEN-FREE NOODLES MADE FROM GANYONG FLOUR AND AMARANTH SEED FLOUR AS AN ALTERNATIVE FOOD FOR INDIVIDUALS WITH GLUTEN INTOLERANCE

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Abstract

Gluten intolerance requires individuals to avoid gluten-containing foods, creating the need for alternative products made from non-wheat ingredients. Ganyong flour (*Canna edulis* Kerr.) and amaranth seed flour (*Amaranthus* sp.) are potential ingredients for gluten-free dried noodles due to their favorable nutritional composition. This study aimed to evaluate the physicochemical and organoleptic characteristics of gluten-free dried noodles made from ganyong flour and amaranth seed flour and to determine the best formulation. A Completely Randomized Design (CRD) with three formulations was applied: F1 (35%:15%), F2 (25%:25%), and F3 (15%:35%). Proximate composition, calcium content, and water absorption were analyzed using one-way ANOVA followed by Duncan's Multiple Range Test (DMRT), whereas organoleptic properties were analyzed using the Kruskal–Wallis and Mann–Whitney tests. The formulation significantly affected carbohydrate content ($p=0.041$), water absorption ($p=0.005$), color ($p=0.000$), and texture ($p=0.001$), but had no significant effect on moisture, ash, protein, fat, calcium, aroma, or taste ($p>0.05$). Based on the De Garmo method, F2 (25% ganyong flour:25% amaranth seed flour) was selected as the best formulation, providing 143.35 kcal of energy, 2.52 g of protein, 1.36 g of fat, 30.27 g of carbohydrates, and 49.43 mg of calcium per 50 g serving.

Keywords: Gluten Intolerance, Dry Noodles, Amaranth Flour, Ganyong Flour, Proximate Analysis