ABSTRACT

THE EFFECT OF SUBSTITUTING RICE FLOUR WITH PURPLE POTATO FLOUR (*Ipomoea batatas* L.) ON THE PHYSICOCHEMICAL CHARACTERISTICS OF RICE PAPER

By

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Rice paper was a thin, edible sheet made mostly from rice flour, offering minimal functional benefits. To enhance its nutritional value, it was partially replaced with purple sweet potato, a source of anthocyanins known for their antioxidant properties that supported the body's defenses. The study used a Completely Randomized Block Design (RAKL) with four replications and six levels of purple sweet potato flour substitution (0% (P0), 3% (P1), 6% (P2), 9% (P3), 12% (P4), and 15% (P5)). Data analysis began with Bartlett and Tukey tests for homogeneity and additivity, followed by ANOVA. Treatment differences were assessed with DMRT (5%), and the best formula was chosen using the De Garmo method. The substitution reduced rehydration, lightness, and yellowness, while increasing thickness, redness, moisture, and antioxidants. Among all treatments, the P3 formulation (91% rice flour and 9% purple sweet potato flour) was identified as the optimal combination. This variant showed favorable sensory attributes, with an aroma score of 3.0 (slightly aromatic with sweet potato notes), a taste score of 2.8 (mild sweet potato flavor), and an overall acceptability of 4.22 (generally liked). Its physical and chemical properties included a thickness of 0.244 mm, 97.40% rehydration capacity, 1.74 MPa tensile strength, 1.77% elongation, and color values of L* 78.85, a* 5.23, and b* 6.60. It contained 12.41% moisture, 1.39% ash, 79.6% carbohydrates, 2.10% protein, 4.43% fat, and provided 366.4 kcal of energy.

Keywords : Anthocyanin, purple sweet potato flour, rice flour, rice paper, substitution

ABSTRAK

PENGARUH SUBSTITUSI TEPUNG BERAS DENGAN TEPUNG UBI JALAR UNGU (*Ipomoea batatas* L.) TERHADAP KARAKTERISTIK FISIKOKIMIA *RICE PAPER*

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Rice paper merupakan lembaran tipis yang dapat langsung dimakan dan dapat berfungsi sebagai pelindung pangan dari oksidasi. *Rice paper* dibuat dari hampir 100% tepung beras sehingga kurang memiliki nilai fungsional yang signifikan. Salah satu upaya meningkatkan nilai fungsional *rice paper* adalah dengan substitusi ubi jalar ungu yang mengandung antosianin tinggi. Antosianin dapat memberikan efek antioksidan bagi tubuh. Penelitian ini bersifat non-faktorial dan disusun dalam Rancangan Acak Kelompok Lengkap (RAKL) dengan 4 ulangan. Perlakuan substitusi tepung ubi jalar ungu yaitu P0 (0%), P1 (3%), P2 (6%), P3 (9%), P4 (12%), P5 (15%). Data dianalisis menggunakan uji Bartlett untuk homogenitas dan uji Tuckey untuk aditivitas, dilanjutkan dengan Analisis Ragam dan uji lanjut menggunakan *Duncan Multiple Range Test* (DMRT) pada taraf 5%. Penentuan perlakuan terbaik menggunakan metode De Garmo. Substitusi tepung ubi jalar ungu terbukti berpengaruh signifikan terhadap penurunan daya rehidrasi, nilai L* dan nilai b*. Selain itu substitusi berpengaruh terhadap peningkatan nilai ketebalan, nilai a*, kadar air dan aktivitas antioksidan. Hasil terbaik pada P3 dengan formulasi tepung beras:tepung ubi jalar ungu (91:9%) dengan karakteristik aroma 3(sedikit beraroma khas ubi jalar ungu), rasa 2,8 (kurang khas ubi jalar ungu, penerimaan keseluruhan 4,22 (suka), ketebalan (0,244 mm), daya rehidrasi (97,40%), kuat tarik (1,74 MPa), elongasi (1,77%), nilai L*(78,85), a*(5,23), b*(6,60), kadar air (12,41%), kadar abu (1,39%), karbohidrat (79,6%), protein (2,10%), lemak (4,43%), dan kalori sebesar 366,4 kkal.

Kata kunci: Antosianin, *rice paper*, substitusi, tepung beras, tepung ubi jalar ungu