

Fitriyani. NPM 220331100097. Studi Perbandingan Optimasi Kualitas Beras Analog Ubi Ungu Dan Ubi Kuning Dengan Sni Beras Konvensional. Di bawah Bimbingan **Safira Kanza, S.T., M.T. dan Mojiono, S.TP., M.Si.**

ABSTRAK

Beras analog merupakan produk diversifikasi pangan yang dikembangkan sebagai alternatif pengganti beras konvensional dengan memanfaatkan bahan pangan lokal. Ubi ungu (Ipomoea batatas var. Ayamurasaki) mengandung antosianin sebagai antioksidan alami, sedangkan ubi kuning (Ipomoea batatas L.) kaya akan β -karoten sebagai provitamin A. Perbedaan kandungan gizi kedua bahan tersebut memerlukan optimasi formulasi agar dihasilkan beras analog dengan kualitas yang mendekati standar beras konvensional. Penelitian ini bertujuan untuk membandingkan kualitas beras analog ubi ungu dan ubi kuning dengan SNI 6128:2020 serta menentukan formulasi optimum menggunakan metode Response Surface Methodology (RSM). Penelitian dilakukan melalui analisis proksimat yang meliputi kadar air, kadar protein, kadar lemak, kadar abu, kadar karbohidrat, serta aktivitas antioksidan menggunakan metode DPPH. Formulasi beras analog terdiri atas lima proporsi ubi ungu dan ubi kuning, yaitu 100:0, 75:25, 50:50, 25:75, dan 0:100. Data dianalisis menggunakan perangkat lunak Design Expert dengan metode RSM untuk memperoleh model prediksi, analisis varians (ANOVA), dan formulasi optimum berdasarkan nilai desirability. Hasil penelitian menunjukkan bahwa proporsi ubi ungu dan ubi kuning berpengaruh terhadap karakteristik kimia dan aktivitas antioksidan beras analog. Formulasi optimum diperoleh pada proporsi ubi ungu 49,2% dan ubi kuning 50,8% dengan nilai desirability 0,551. Formulasi tersebut menghasilkan kadar air 8,301%, protein 4,778%, lemak 7,806%, abu 3,638%, karbohidrat 75,430%, dan aktivitas antioksidan 86,656%. Kadar air telah memenuhi SNI 6128:2020, sedangkan kadar protein, lemak, dan kadar abu belum memenuhi standar. Beras analog memiliki aktivitas antioksidan yang tinggi sehingga berpotensi dikembangkan sebagai pangan fungsional berbasis bahan pangan lokal.

Kata Kunci : Beras Analog, Ubi Ungu, Ubi Kuning, Response Surface Methodology

ABSTRACT

*Analog rice is a food diversification product developed as an alternative to conventional rice by utilizing local food ingredients. Purple sweet potatoes (*Ipomoea batatas* var. *Ayamurasaki*) contain anthocyanins as natural antioxidants, while yellow sweet potatoes (*Ipomoea batatas* L.) are rich in β -carotene as a provitamin A. The differences in the nutritional content of these two ingredients require formulation optimization to produce analog rice with a quality that approaches that of conventional rice. This study aimed to compare the quality of purple and yellow sweet potato rice analogs against SNI 6128:2020 and to determine the optimal formulation using the Response Surface Methodology (RSM). The study was conducted through proximate analysis, which included moisture content, protein content, fat content, ash content, carbohydrate content, and antioxidant activity using the DPPH method. The analog rice formulations consisted of five different ratios of purple and yellow sweet potatoes: 100:0, 75:25, 50:50, 25:75, and 0:100. The data were analyzed using Design Expert software with the RSM method to obtain a predictive model, perform an analysis of variance (ANOVA), and determine the optimal formulation based on the desirability value. The results showed that the proportions of purple and yellow sweet potatoes influenced the chemical characteristics and antioxidant activity of the rice analog. The optimal formulation was obtained with a 49.2% proportion of purple sweet potato and a 50.8% proportion of yellow sweet potato, yielding a desirability value of 0.551. This formulation resulted in a moisture content of 8.301%, protein content of 4.778%, fat content of 7.806%, ash content of 3.638%, carbohydrate content of 75.430%, and antioxidant activity of 86.656%. The moisture content meets SNI 6128:2020, while the protein, fat, and ash contents do not yet meet the standard. Analog rice has high antioxidant activity, making it a promising candidate for development as a functional food based on local food ingredients.*

Keywords : *Analog Rice, Purple Sweet Potatoes, Yellow Sweet Potatoes, Response Surface Methodology*