Analisis Kandungan Energi dan Proksimat serta Organoleptik Roti Biji Chia dengan Substitusi Tepung Ubi Jalar Ungu

Erna Febriani[1], Gemala Anjani[1], Ayu Rahadiyanti[1]

ABSTRAK

Latar belakang: Impor tepung terigu di Indonesia meningkat sejak 2016. Tepung ubi jalar ungu (TU) dapat dimanfaatkan sebagai substitusi tepung terigu (TT) dalam pembuatan roti biji chia sebagai makanan sarapan karena memiliki sifat kimia hampir serupa.

Tujuan: Menganalisis kandungan energi, proksimat, dan organoleptik roti biji chia dengan substitusi tepung ubi jalar ungu.

Metode: Penelitian ini menggunakan desain penelitian eksperimental dengan rancangan acak lengkap satu faktor yaitu substitusi TU terhadap TT pada roti biji chia F0 (0% TU), F1 (10% TU), F2 (20% TU), F3 (30% TU) dilakukan analisis protein (*Kjeldahl*), lemak (*Soxhlet*), karbohidrat (*by difference*), energi, air (pengovenan), abu (pengabuan kering), organoleptik (hedonik dan JAR), serta formula terbaik (metode MADCAW). Analisis data dengan uji beda *Kruskal-Wallis* dan uji lanjut *Mann-Whitney*.

Hasil: Hasil menunjukkan bahwa kandungan karbohidrat, protein, lemak, air, dan abu roti berbeda signifikan (p<0,05). Roti mengandung energi 320,06 – 322,35 kkal; protein 6,75 – 8,11 g; lemak 5,83 – 7,02 g; karbohidrat 56,1 – 60,73 g; air 24,54 – 26,84%; abu 1,93 – 2,16% per 100 g. Tingkat kesukaan warna, aroma, rasa, tekstur, dan keseluruhan roti berbeda signifikan (p<0,05). Penalti diberikan pada beberapa atribut di seluruh formula roti (*mean drops* 0 – (-0,99)). Roti F1 terpilih menjadi formula terbaik berdasarkan kandungan proksimat dan tingkat kesukaan warna, aroma, rasa, tekstur, dan keseluruhan.

Simpulan: Semakin tinggi substitusi tepung ubi jalar ungu pada roti, maka kandungan energi, karbohidrat, dan abu meningkat, namun protein, lemak, dan air menurun. Substitusi tepung ubi jalar ungu memberikan pengaruh terhadap warna, aroma, rasa, tekstur, dan keseluruhan roti.

Kata kunci: Organoleptik, proksimat, roti, tepung ubi jalar ungu

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[1] Departemen Ilmu Gizi, Fakultas Kedokteran, Univeristas Diponegoro, Indonesia

Analysis of Energy and Proximate Content and Organoleptic Chia Seed Bread with Purple Sweet Potato Flour Substitution

Erna Febriani, Gemala Anjani[1], Ayu Rahadiyanti[1]

ABSTRACT

Background: Wheat flour imports in Indonesia have increased since 2016. Purple sweet potato flour (PSPF) can be used as a substitute for wheat flour (WF) in making chia seed bread for breakfast due to its similar chemical properties.

Objective: To analyze the energy content, proximate composition, and organoleptic properties of chia seed bread with purple sweet potato flour substitution.

Methods: This research used experimental design with completely randomized design single factor, in the form of substitution of PSPF for WF in chia seed bread are F0 (0% PSPF), F1 (10% PSPF), F2 (20% PSPF), F3 (30% PSPF). The analysis included protein (Kjeldahl), fat (Soxhlet), carbohydrates (by difference), energy, moisture (oven drying), ash (dry ashing), organoleptic properties (hedonic and JAR), and the best formula (MADCAW method). Data were analyzed using Kruskal-Wallis test and Mann-Whitney post hoc test.

Results: The result indicate that there were significant differences in the carbohydrate, protein, fat, moisture, and ash content of the bread ($p<0,05$). The bread contained energy of 320,06 – 322,35 kcal; protein 6,75 – 8,11 g; fat 5,83 – 7,02 g; carbohydrates 56,1 – 60,73 g; moisture 24,54 – 26,84%; ash 1,93 – 2,16% per 100 g. Hedonic for color, aroma, taste, texture, and overall liking showed significant differences ($p<0,05$). Some attributes of all bread's formula received penalties (mean drops 0 – (-0,99)). Roti F1 was selected as the best formula based on its proximate content and hedonic for color, aroma, taste, texture, and overall quality.

Conclusion: As the substitution level of purple sweet potato flour in the bread increased, the content of energy, carbohydrate, and ash rised, while protein, fat, and moisture decreased. Substitution of purple sweet potato flour affected the color, aroma, taste, texture, and overall quality of bread.

Keywords: Organoleptic, proximate, bread, purple sweet potato flour

[1] Departemen Ilmu Gizi, Fakultas Kedokteran, Univeristas Diponegoro, Indonesia