

Analisis Kandungan Zat Gizi Makro, Energi, dan Serat Pangan *Food Bar* Tepung Jagung dan Tepung Kacang Hijau Sebagai Alternatif Pangan Darurat

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ABSTRAK

Latar belakang: Dalam kondisi darurat makanan siap konsumsi seperti *food bar* sangat diperlukan terutama pada fase I tahap tanggap darurat awal karena minimnya peralatan dan bahan makanan segar yang tersedia. *Food bar* dapat dibuat dengan mengombinasikan jagung dan kacang hijau agar dapat memenuhi standar gizi pangan darurat.

Tujuan: Menganalisis perbedaan kandungan zat gizi makro, energi, dan serat pangan pada 3 formulasi yang terpilih dan memilih 1 formulasi terbaik sesuai standar pangan darurat.

Metode: Penelitian eksperimental ini menggunakan Rancangan Acak Lengkap satu faktor yaitu perbandingan tepung jagung dan tepung kacang hijau 7:3, 6:4, dan 4:6 dengan 3 kali ulangan percobaan. Uji kadar protein (*Kjeldahl*), lemak (*Soxhlet*), karbohidrat (*by difference*), energi (mengonversi jumlah protein, lemak, dan karbohidrat), air (thermogravimetri), dan abu (pengabuan kering) dengan 3 kali ulangan analisis. Uji kadar serat pangan total (multienzim) dengan 2 kali ulangan analisis. Data dianalisis dengan uji *One Way ANOVA* dan *Kruskal Wallis*. Pemilihan formulasi terbaik dengan *additive weighting technique*.

Hasil: Terdapat perbedaan yang signifikan pada kadar protein ($p < 0,001$), kadar karbohidrat ($p = 0,016$), dan kadar serat pangan total ($p = 0,010$) pada ketiga formulasi *food bar*. Formulasi yang terpilih adalah formulasi dengan perbandingan tepung jagung dan tepung kacang hijau 6 : 4 mempunyai kadar protein 11,67%, kadar lemak 22,61%, kadar karbohidrat 53,98%, kadar air 9,31%, kadar abu 2,43%, kadar serat pangan total 8,61% dengan total kalori 233,06 kkal/50 gram bar yang terdiri dari protein 10,01%, lemak 43,66%, dan karbohidrat 46,33%.

Simpulan: Kandungan energi, protein, lemak, karbohidrat, kadar air, kadar abu, dan serat pangan pada *food bar* tepung jagung dan tepung kacang hijau sudah sesuai standar gizi pangan darurat.

Kata kunci: *food bar*, tepung jagung, tepung kacang hijau, pangan darurat

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Analysis of Macronutrient, Energy, and Dietary Fiber Content of Corn Flour and Mung Bean Flour Food Bars as Emergency Food Alternative

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ABSTRACT

Background: In emergency conditions, ready to eat foods such as food bars are needed, especially in phase I of the initial emergency response stage, due to the lack of equipment and fresh food ingredients available. Food bars can be made by combining corn and mung beans in order to meet the nutritional standards of emergency food.

Objective: To analyze the differences in macronutrient content, energy, and dietary fiber in the three selected formulations and select the best formulation according to emergency food standards.

Methods: This experimental study used a one factor completely randomized design, namely the ratio of corn flour and mung bean flour (7:3, 6:4, and 4:6) with 3 replications. Test the levels of protein (Kjeldahl), fat (Soxhlet), carbohydrate (by difference), and energy (converting the amount of protein, fat, and carbohydrate), moisture content (thermogravimetry), and ash content (dry ashing) with three replicate analyses. Total dietary fiber content test (multienzyme) with two replicate analyses. Data were analyzed with One Way ANOVA and Kruskal Wallis tests. Selection of the best formulation with additive weighting technique.

Results: There were significant differences in protein content ($p < 0,001$), carbohydrate content ($p = 0,016$), and total dietary fiber content ($p = 0,010$) in the three food bar formulations. The selected formulation, with the ratio of corn flour and mung bean flour of 6:4, has a protein content of 11,67%, a fat content of 22,61%, a carbohydrate content of 53,98%, a moisture content of 9,31%, an ash content of 2,43%, a total food fiber content of 8,61%, and a total calorie content of 233,06 kcal/50 gram bar consisting of protein 10,01%, fat 43,66%, and carbohydrate 46,33%.

Conclusion: The content of energy, protein, fat, carbohydrate, water content, ash content, and dietary fiber in corn flour and mung bean flour food bars is in accordance with emergency food nutrition standards.

Keywords: food bar, corn flour, mung bean flour, emergency food

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