

ANALISIS PENANGKAPAN RADIKAL DAN PROKSIMAT JELLY FUNGSIONAL DENGAN PENAMBAHAN EKSTRAK FLAVONOID BUAH CANTIGI SEBAGAI ALTERNATIF SNACK PADA DIABETESI

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INTISARI

Latar belakang: Diabetes melitus menjadi masalah kesehatan global yang memerlukan perhatian besar. Kondisi hiperglikemia pada diabetes melitus dapat menimbulkan stres oksidatif. Buah cantigi merupakan buah lokal yang mengandung antosianin dan bersifat antioksidan. Antioksidan dapat mengurangi produksi radikal bebas di dalam sel tubuh. Ekstrak buah cantigi dapat ditambahkan ke dalam produk jelly fungsional berbasis glukomanan porang dan bekatul fermentasi sebagai alternatif *snack* pada individu dengan diabetes melitus.

Tujuan: Mengetahui perbedaan penangkapan radikal dan kandungan nilai gizi pada variasi penambahan ekstrak buah cantigi dalam produk jelly fungsional.

Metode: Penelitian eksperimental dengan desain Rancangan Acak Lengkap (RAL). Terdapat 4 formula yaitu jelly fungsional cantigi 0% (F0), jelly fungsional cantigi 0,5% (F1), jelly fungsional cantigi 1% (F2), dan jelly fungsional cantigi 2% (F3). Aktivitas penangkapan radikal ditentukan dengan metode DPPH. Kandungan kadar air dan abu ditentukan dengan metode thermogravimetri, sedangkan kadar protein, lemak, karbohidrat, energi, dan komponen serat pangan ditentukan dengan metode Kjeldahl, metode Soxhlet, metode *carbohydrate by difference*, penjumlahan kalori (protein, lemak, dan karbohidrat), serta metode multienzim.

Hasil: Penambahan ekstrak flavonoid buah cantigi mempengaruhi aktivitas penangkapan radikal, kadar air, protein, lemak, karbohidrat, energi, serat pangan tak larut, serat pangan terlarut, dan serat pangan total secara signifikan ($p < 0,05$), sedangkan kadar abu tidak berbeda signifikan. Kadar air dan lemak mengalami penurunan seiring dengan meningkatnya persentase ekstrak cantigi yang ditambahkan, sedangkan aktivitas penangkapan radikal, kadar protein, karbohidrat, energi, serat pangan tak larut, serat pangan terlarut, dan serat pangan total mengalami peningkatan.

Kesimpulan: Terdapat perbedaan yang signifikan ($p < 0,05$) pada aktivitas penangkapan radikal, kadar air, protein, lemak, karbohidrat, energi, dan komponen serat, namun tidak terdapat perbedaan yang signifikan pada kadar abu jelly fungsional cantigi.

Kata kunci: Aktivitas penangkapan radikal; Buah cantigi; Diabetes Melitus; Jelly fungsional; Proksimat

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ANALYSIS OF RADICAL SCAVENGING AND PROXIMATE IN FUNCTIONAL JELLY WITH CANTIGI FRUIT FLAVONOID EXTRACT AS AN ALTERNATIVE SNACK FOR DIABETICS

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ABSTRACT

Background: Diabetes mellitus is a global health problem that requires great attention. Hyperglycemia conditions in diabetes mellitus can cause oxidative stress. Cantigi fruit is a local fruit that contains anthocyanin and has antioxidant properties. Antioxidants can reduce the production of free radicals in body cells. Cantigi fruit extract can be added to functional jelly products based on porang glucomannan and fermented rice bran as an alternative snack for individuals with diabetes mellitus.

Objectives: To determine the differences in radical scavenging activity and nutritional value in variations in the addition of cantigi fruit extract in functional jelly products.

Method: Experimental research with a Completely Randomized Design (CRD). There are 4 formulas, Cantigi functional jelly 0% (F0), Cantigi functional jelly 0.5% (F1), Cantigi functional jelly 1% (F2), and Cantigi functional jelly 2% (F3). Radical scavenging activity was determined using the DPPH method. The water and ash contents were determined using the thermogravimetric method, while the levels of protein, fat, carbohydrates, energy, and dietary fiber components were determined using the Kjeldahl method, Soxhlet method, carbohydrate by difference method, the summation of calories (protein, fat, and carbohydrates), and multienzyme method.

Result: The addition of cantigi fruit flavonoid extract significantly influenced radical scavenging activity, water content, protein, fat, carbohydrate, energy, insoluble dietary fiber, soluble dietary fiber, and total dietary fiber ($p < 0.05$), while ash content did not significantly different. Water and fat content decreased as the percentage of cantigi extract added increased, while radical scavenging activity, protein, carbohydrate, energy, insoluble dietary fiber, soluble dietary fiber, and total dietary fiber increased.

Conclusion: There are significant differences ($p < 0.05$) in radical scavenging activity, water content, protein, fat, carbohydrate, energy, and fiber components, but there is no significant difference in the ash content of cantigi functional jelly.

Keywords: Radical scavenging activity; Cantigi fruit; Diabetes mellitus; Functional jelly; Proximate

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