

## **ANALISIS KADAR PROKSIMAT DAN AKTIVITAS ANTIOKSIDAN PADA MINUMAN BUBUK SOYA FIBER DENGAN SUBSTITUSI SARI MURBEI SEBAGAI MINUMAN FUNGSIONAL UNTUK DIABETISI**

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### **INTISARI**

**Latar Belakang:** Dengan adanya peningkatan prevalensi diabetes melitus di Indonesia, diperlukan pengobatan salah satunya terapi nutrisi medis dengan memanfaatkan pangan fungsional yang mengandung komponen bioaktif. Kacang kedelai mengandung protein, antioksidan berupa flavonoids (isoflavon) serta rendahnya indeks glikemik yang dapat memberikan efek hipoglikemik. Buah murbei kaya akan vitamin B kompleks, polifenol termasuk antosianin yang memiliki berbagai efek seperti antidiabetes. Kedua bahan tersebut diolah menjadi produk minuman bubuk Soya Fiber.

**Tujuan:** Mengetahui perbedaan kadar proksimat dan aktivitas antioksidan pada berbagai formulasi minuman bubuk Soya Fiber dengan substitusi sari murbei.

**Metode:** Penelitian eksperimental ini terdiri dari 4 kelompok perlakuan dengan substitusi sari murbei 0%, 15%, 30%, dan 45%. Seluruh kelompok perlakuan dilakukan analisis kadar proksimat dan aktivitas antioksidan. Analisis kadar air dan abu menggunakan metode termogravimetri, kadar protein menggunakan metode Kjeldahl, kadar lemak menggunakan metode Soxhlet, sedangkan kadar karbohidrat menggunakan perhitungan *by difference*. Untuk uji aktivitas antioksidan menggunakan metode DPPH.

**Hasil:** Kadar air, abu, dan lemak antar kelompok perlakuan minuman bubuk Soya Fiber tidak berbeda signifikan ( $p > 0,05$ ); sedangkan kadar protein, karbohidrat dan aktivitas antioksidan berbeda signifikan ( $p < 0,05$ ). Kadar protein menurun seiring dengan penambahan sari murbei sebesar 30%, sedangkan kadar karbohidrat meningkat seiring dengan penambahan sari murbei sebesar 30%. Aktivitas antioksidan meningkat seiring dengan penambahan sari murbei 15%.

**Kesimpulan:** Kadar air, abu, dan lemak pada berbagai formulasi minuman bubuk Soya Fiber dengan substitusi sari murbei tidak berbeda signifikan, sedangkan kadar protein, karbohidrat, dan aktivitas antioksidan berbeda signifikan.

**Kata Kunci:** sari murbei, minuman bubuk, kadar proksimat, aktivitas antioksidan.

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## **ANALYSIS OF PROXIMATE LEVELS AND ANTIOXIDANT ACTIVITY IN SOYA FIBER POWDER DRINK WITH MULBERRY JUICE SUBSTITUTION AS AN FUNCTIONAL DRINK FOR DIABETISI**

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### **ABSTRACT**

**Background:** With the increasing prevalence of diabetes melitus in Indonesia, treatment is needed, one of which is medical nutrition therapy by utilizing functional foods containing bioactive components. Soybeans contain protein, antioxidants in the form of flavonoids (isoflavones), and a low glycemic index, which can have a hypoglycemic effect. Mulberry fruit is rich in B complex vitamins and polyphenols, including anthocyanins, which have various effects such as being anti-diabetic. Both of these ingredients are processed into Soya Fiber powder drink products.

**Objective:** To determine the differences in proximate levels and antioxidant activity in various Soya Fiber powder drink formulations with mulberry juice substitution.

**Methods:** This experimental study consisted of 4 treatment groups with 0%, 15%, 30%, and 45% mulberry juice substitution. All treatment groups were analyzed for proximate levels and antioxidant activity. The analysis of water and ash content used the thermogravimetric method, protein content used the Kjeldahl method, fat content used the Soxhlet method, and carbohydrate content used the difference calculation. The antioxidant activity test using the DPPH method.

**Results:** The water, ash, and fat content between treatment groups Soya Fiber powder drink did not differ significantly ( $p > 0.05$ ), while the levels of protein, carbohydrates, and antioxidant activity were significantly different ( $p < 0.05$ ). The protein content decreased with the addition of 30% mulberry juice, while the carbohydrate content increased with the addition of 30% mulberry juice. Antioxidant activity increased with the addition of 15% mulberry juice.

**Conclusion:** The water, ash, and fat content of the various Soya Fiber powder drink formulations with mulberry juice substitutes were not significantly different, while the levels of protein, carbohydrates, and antioxidant activity were significantly different.

**Keywords:** mulberry juice, powder drink, proximate levels, antioxidant activity.

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