

**PENGARUH SUBSTITUSI LARUTAN TEH DENGAN SARI
BELIMBING TERHADAP KADAR PROKSIMAT, TOTAL
FENOL, DAN DAYA TERIMA KOMBUCHA BELIMBING
(*Averrhoa carambola* L.)**

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Abstrak

Kombucha merupakan minuman fermentasi kaya akan senyawa polifenol dan antioksidan, sehingga baik untuk kesehatan, khususnya membantu pengelolaan Diabetes Melitus Tipe 2 (DMT2). Penelitian ini dilakukan untuk mengevaluasi pengaruh substitusi larutan teh dengan sari belimbing terhadap Total Padatan Terlarut (TPT), kadar proksimat, total fenol, dan daya terima. Desain rancangan acak lengkap digunakan dengan lima formulasi perbandingan sari belimbing dan larutan teh, yaitu F1 (0:100), F2 (25:75), F3 (50:50), F4 (75:25), F5 (100:0), masing-masing dua kali ulangan. Analisis meliputi TPT, kadar air, abu, protein, lemak, karbohidrat, total fenol menggunakan Folin-Ciocalteu, serta daya terima dengan uji hedonik 5 skala (sangat tidak suka-sangat suka). Hasil ANOVA menunjukkan bahwa substitusi larutan teh dengan sari belimbing berpengaruh signifikan ($p < 0,05$) terhadap peningkatan kadar air, abu, protein, lemak, dan total fenol, serta penurunan TPT. Substitusi tidak berpengaruh signifikan ($p > 0,05$) terhadap karbohidrat. Pada uji hedonik terdapat perbedaan signifikan ($p < 0,05$) pada aroma dan rasa, serta tidak signifikan ($p > 0,05$) untuk warna dan tekstur. Formula terpilih adalah F5 dengan satu takaran saji (170 mL) mengandung 48,31 kkal energi, 0,068 g protein, 0,051 g lemak, 12,09 g karbohidrat, dan 518,3 mg total fenol. F5 berpotensi sebagai alternatif minuman fungsional untuk penderita DMT2 karena memiliki kandungan total fenol tertinggi.

Kata Kunci: Kombucha, Belimbing Dewa, Total Fenol, Minuman Fungsional, DMT2

THE EFFECT OF TEA SOLUTION SUBSTITUTION WITH STARFRUIT JUICE ON PROXIMATE COMPOSITION, TOTAL PHENOLIC CONTENT, AND ACCEPTABILITY OF STARFRUIT (*Averrhoa carambola* L.) KOMBUCHA

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Abstract

Kombucha is a fermented beverage rich in polyphenols and antioxidants, making it beneficial for health, particularly in supporting Type 2 Diabetes Mellitus management. This study was conducted to evaluate the effect of substituting tea infusion with starfruit juice on Total Dissolved Solids (TDS), proximate composition, total phenol, and sensory acceptability. A Completely Randomized Design was applied using five formulations of starfruit juice and tea infusion: F1 (0:100), F2 (25:75), F3 (50:50), F4 (75:25), and F5 (100:0), with two replications each. Analyses included TDS, moisture, ash, protein, fat, carbohydrate, total phenol using the Folin-Ciocalteu method, and sensory acceptability using a 5-point hedonic scale. ANOVA results showed that substitution significantly increased ($p < 0.05$) moisture, ash, protein, fat, and total phenol, while decreasing TDS. No significant effect ($p > 0.05$) was found on carbohydrate content. Hedonic evaluation showed significant differences ($p < 0.05$) in aroma and taste, but not in color and texture ($p > 0.05$). F5 was selected as the best formulation, containing 48.31 kcal energy, 0.068 g protein, 0.051 g fat, 12.09 g carbohydrate, and 518.3 mg total phenol per 170 mL serving. F5 has the potential to serve as an alternative functional beverage for individuals with Type 2 Diabetes Mellitus due to its highest total phenol content.

Keywords: Kombucha, Belimbing Dewa, Total Phenolic Content, Functional Beverage, T2DM