

ABSTRAK

Analisis Kadar Vitamin C dalam *Infused water* dari Kombinasi Buah Jambu Biji Merah, Kiwi, dan Lemon Perendaman Menggunakan Kromatografi Cair Kinerja Tinggi (KCKT)

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Banyaknya produksi buah-buahan di Indonesia menyadarkan masyarakat pentingnya mengonsumsi buah sehingga muncul suatu *trend* yaitu *Infused water*, *Infused water* berisi air putih yang ditambahkan beberapa potongan buah atau herbal dengan proses perendaman selama beberapa jam. Vitamin C pada buah memiliki sifat antioksidan salah satunya bermanfaat untuk menjaga imunitas tubuh sehingga perlu dilakukan penetapan kadar Vitamin C dari kombinasi buah yang mengandung Vitamin C yang tinggi dengan beberapa waktu perendaman. Penelitian menggunakan Kromatografi Cair Kinerja Tinggi (KCKT) dengan panjang gelombang 264 nm, fase gerak metanol : asam asetat 0,5% pH 3,0, fase diam C18, dan laju alir 1 mL/menit. Pada penelitian ini didapatkan nilai koefisien korelasi (r) 0,998, koefisien variasi fungsi ($V \times 0$) 1,26%, batas deteksi (BD) 0,284 bpj, batas kuantisasi (BK) 0,945 bpj, dan kadar Vitamin C pada waktu perendaman 1 dan 3 jam dari kombinasi *infused water* lemon dan kiwi, lemon dan jambu biji merah, kiwi dan jambu biji merah yaitu 29,018 dan 33,086 $\mu\text{g/mL}$, 33,954 dan 43,557 $\mu\text{g/mL}$, 52,012 dan 54,758 $\mu\text{g/mL}$. Pada hasil kadar yang didapatkan waktu perendaman *infused water* terhadap kadar Vitamin C meningkat dari waktu 1 jam ke 3 jam dan kadar Vitamin C dari kombinasi buah yang paling baik pada waktu perendaman 3 jam dengan kombinasi kiwi dan jambu biji merah sebanyak 54,758 $\mu\text{g/mL}$.

Kata Kunci: vitamin c, *infused water*, jambu biji merah, kiwi, lemon, kckt

ABSTRACT

Analysis of Vitamin C Levels in Infused water from a Combination of Red Guava, Kiwi, and Lemon by High-Performance Liquid Chromatography (HPLC)

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The abundance of fruit production in Indonesia has raised awareness among the public about the importance of fruit consumption, leading to the emergence of a trend known as "Infused water." Infused water contains plain water infused with pieces of fruit or herbs through a soaking process lasting several hours. Fruits contain Vitamin C, which exhibits antioxidant properties one of them beneficial for maintaining the body's immunity. Therefore, it is essential to determine the Vitamin C content in fruit combinations that have high Vitamin C content after different soaking durations. The research employed High-Performance Liquid Chromatography (HPLC) with a wavelength of 264 nm, using a mobile phase consisting of metanol: 0.5% acetic acid at pH 3.0, a C18 stationary phase, and a flow rate of 1 mL/min. The study yielded a correlation coefficient value (r) of 0.998, a function variation coefficient (Vx0) of 1.26%, a detection limit (DL) of 0,284 bpj, and a quantization limit (QL) of 0,945 bpj. The Vitamin C content at 1 and 3 hours of soaking time from combinations of infused water containing lemon and kiwi, lemon and red guava, kiwi and red guava were found to be 29,018 and 33,086 $\mu\text{g/mL}$, 33,954 and 43,557 $\mu\text{g/mL}$, 52,012 and 54,758 $\mu\text{g/mL}$, respectively. The results indicate that the soaking time of infused water influences the Vitamin C content, with an increase observed from 1 hour to 3 hours of soaking. Moreover, the best Vitamin C content in fruit combinations was obtained at the 3-hour soaking time, specifically with the combination of kiwi and red guava, yielding 54,758 $\mu\text{g/mL}$ of Vitamin C.

Keywords: vitamin c, infused water, red guava, kiwi, lemon, hplc