Perbedaan Stabilitas pH, Total Asam Tertitrasi, dan Kadar Total Fenolik Minuman *Nano White Tea* dengan Perlakuan Suhu dan Lama Penyimpanan

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ABSTRAK

Latar belakang: Teh putih memiliki kandungan senyawa fenolik yang lebih tinggi dibandingkan jenis teh yang lain dan umumnya diolah dengan seduhan air panas yang dapat merusak senyawa fenolik didalamnya. Oleh sebab itu perlu nanoteknologi untuk menghasilkan minuman *nano white tea*.

Tujuan: Menganalisis perbedaan stabilitas pH, total asam tertitrasi, dan kadar total fenolik minuman *nano white tea* dengan perlakuan suhu dan lama penyimpanan.

Metode: Penelitian eksperimental metode rancangan acak lengkap faktorial dengan deskripsi univariat dilanjutkan analisis statistik. Analisis pH dilakukan menggunakan pH meter. Analisis total asam tertitrasi dilakukan menggunakan titrasi asam basa. Analisis kadar total fenolik dilakukan menggunakan metode Folin-Ciocalteu. Analisis data dilakukan dengan uji beda menggunakan *Independent T-Test* dan *Mann-Whitney*.

Hasil: Terdapat perbedaan signifikan (*p-value* <0,05) nilai pH, total asam tertitrasi, dan kadar total fenolik seduhan teh putih dan minuman *nano white tea*. pH dan total asam tertitrasi seduhan teh putih lebih stabil pada suhu 4-6^{o}C, sedangkan minuman *nano white tea* lebih stabil pada suhu 25-27^{o}C. Kadar total fenolik kedua jenis sampel lebih stabil pada suhu 4-6^{o}C.

Simpulan: Terdapat perbedaan stabilitas pH, total asam tertitrasi, dan kadar total fenolik minuman *nano white tea* dengan perlakuan suhu dan lama penyimpanan.

Kata kunci: kadar total fenolik, nanopartikel, pH, teh putih, total asam tertitrasi

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Differences in pH Stability, Total Titratable Acid, and Total Phenolic Content of Nano White Tea Drinks with Temperature Treatment and Storage Duration

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ABSTRACT

Background: White tea has a higher phenolic compound content compared to other types of tea and is generally processed by steeping in hot water which can damage the phenolic compounds in it. Therefore, nanotechnology is needed to produce nano white tea drinks.

Objective: To analyze the differences in pH stability, total titratable acid, and total phenolic content of nano white tea drinks with temperature treatment and storage time.

Method: Experimental research using a completely randomized factorial design method with univariate description followed by statistical analysis. pH analysis was carried out using a pH meter. Analysis of total titratable acid was carried out using acid-base titration. Analysis of total phenolic content was carried out using the Folin-Ciocalteu method. Data analysis was carried out using a difference test using the Independent T-Test and Mann-Whitney.

Results: There were significant differences (p-value <0.05) in pH value, total titratable acid, and total phenolic content of white tea steeping and nano white tea drinks. The pH and total titrated acid of white tea infusion were more stable at 4-6^{o}C, while nano white tea beverages were more stable at 25-27^{o}C. The total phenolic content of both types of samples was more stable at 4-6^{o}C.

Conclusion: There are differences in pH stability, total titratable acid, and total phenolic content of nano white tea drinks with temperature treatment and storage time.

Keywords: nanoparticles, pH, total phenolic content, total titrated acid, white tea

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