

IDENTIFIKASI KANDUNGAN FORMALIN PADA TAHU PUTIH DI PASAR TRADISIONAL WATES DENGAN METODE SPEKTROFOTOMETRI UV-VIS

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INTISARI

Latar Belakang : Bahan Tambah Pangan (BTP) digunakan untuk mempengaruhi sifat pangan, termasuk bahan pengawet yang diizinkan dan dilarang, seperti formalin. Meski dilarang, formalin masih sering ditemukan pada tahu putih di pasar tradisional untuk memperpanjang daya simpan. Di pasar tradisional Wates, beberapa tahu putih belum memiliki izin PIRT, sehingga rawan ditambahkan formalin. Hal ini mendorong perlunya identifikasi formalin pada tahu putih di pasar tersebut.

Tujuan : Penelitian ini bertujuan mengidentifikasi keberadaan formalin pada tahu putih yang dijual di pasar tradisional Wates Kabupaten Kulonprogo dengan analisis kualitatif dan kuantitatif.

Metode : Penelitian ini dirancang secara deskriptif non-eksperimental dengan uji organoleptis, kualitatif, validasi metode dan kuantitatif. Tahapan penelitian meliputi uji organoleptis selama tiga hari, analisis kualitatif dengan reagen dan *scanning* panjang gelombang maksimal, validasi metode dan uji kuantitatif dengan Spektrofotometri UV-Vis.

Hasil : Hasil penelitian dari lima pedagang tahu putih mengalami perubahan organoleptis pada bau, tekstur, dan warna di hari ketiga. Hasil kualitatif dengan reagen dan *scanning* panjang gelombang menunjukkan seluruh sampel tidak mengalami perubahan warna, namun menunjukkan puncak absorbansi formalin pada S2.3, S4.1, dan S5.2. Validasi metode memenuhi syarat linieritas dan kisaran linier dengan $r = 0,999$, akurasi sebesar 91,803%- 93,989%, presisi sebesar 3,761% serta LOD dan LOQ yaitu 1,965 ppm dan 5,954 ppm. Hasil kuantitatif terdapat sekelumit kadar formalin pada S1, sedangkan data lain di bawah LOD. Metode penelitian ini kurang sensitif pada kadar formalin yang sangat rendah.

Kesimpulan : Sampel tahu dari lima pedagang di Pasar Tradisional Wates Kabupaten Kulon Progo bebas formalin secara kualitatif dan terdapat sekelumit kadar formalin secara kuantitatif, namun tidak dapat dikuantifikasi. Validasi metode memenuhi syarat tiap parameter.

Kata Kunci : Formalin, Tahu putih, Pasar Tradisional Wates, Spektrofotometri UV-Vis, Validasi metode.

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IDENTIFICATION OF FORMALIN CONTENT IN WHITE TOFU AT THE TRADITIONAL WATES MARKET USING THE UV-VIS SPECTROPHOTOMETRY METHOD

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ABSTRACT

Background: Food Additives (BTP) are used to influence food properties, including permitted and prohibited preservatives, such as formalin. Although prohibited, formalin is still often found in white tofu at traditional markets to extend its shelf life. In the traditional Wates market, some white tofu do not have PIRT permits, making them susceptible to the addition of formalin. This highlights the need for the identification of formalin in white tofu at the market.

Objective: This study aims to identify the presence of formalin in white tofu sold in the traditional market of Wates, Kulonprogo Regency, through qualitative and quantitative analysis.

Method: This study was designed descriptively non-experimentally with organoleptic tests, qualitative analysis, method validation, and quantitative analysis. Research stages include organoleptic tests over three days, qualitative analysis with reagents and maximum wavelength scanning, method validation, and quantitative testing with UV-Vis Spectrophotometry.

Results: The research results from five white tofu vendors showed organoleptic changes in smell, texture, and color on the third day. Qualitative results with reagents and wavelength scanning show that all samples did not undergo color changes, but peaks of formalin absorbance were observed at S2.3, S4.1, and S5.2. Method validation meets the criteria for linearity and linear range with $r = 0.999$, accuracy of 91.803%-93.989%, precision of 3.761%, and LOD and LOQ of 1.965 ppm and 5.954 ppm, respectively. The quantitative results show a trace amount of formalin in S1, while other data are below the LOD. This research method is less sensitive to very low levels of formalin.

Conclusion: Tofu samples from five vendors at the Wates traditional market in Kulon Progo Regency are qualitatively free of formalin and quantitatively contain a trace amount of formalin, but it could not be quantified. Method validation meets the requirements for each parameter.

Keywords: Formalin, White tofu, Wates traditional market, UV-Vis spectrophotometry, Method validation.

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