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Pembuatan *Paper Kit Test* Menggunakan Ekstrak Ubi Ungu (*Ipomoea batatas L.*) Untuk Identifikasi Formalin

XVI + 41 halaman, 14 gambar, 7 tabel, dan 12 lampiran

ABSTRAK

Formalin merupakan bahan kimia berbahaya yang sering disalahgunakan sebagai pengawet makanan. Penelitian ini bertujuan untuk mengembangkan *paper kit test* berbasis ekstrak ubi jalar ungu (*Ipomoea batatas L.*). Ekstraksi antosianin dilakukan dengan metode maserasi menggunakan pelarut etanol 96%, kemudian diformulasikan ke dalam media kertas Whatman No. 41 untuk pembuatan *paper kit*. Penelitian ini dilakukan di Laboratorium Kimia Jurusan teknologi Laboratorim Medis Poltekkes Kemenkes Tanjung Karang. Uji reaksi warna menunjukkan bahwa ekstrak ubi ungu mengalami perubahan warna menjadi merah keunguan saat bereaksi dengan formalin. Uji validitas dilakukan melalui uji presisi (*repeatability*), batas deteksi (*limit of detection*), dan selektivitas (*specificity*). Hasil penelitian menunjukkan bahwa *paper kit* mampu mendeteksi formalin hingga konsentrasi 5 ppm dengan respon warna yang signifikan dan konsisten, serta tidak memberikan reaksi terhadap zat pembanding non-formalin. Panjang gelombang maksimum (λ maks) reaksi ditentukan pada kisaran 582 nm menggunakan spektrofotometer UV-Vis. Berdasarkan penelitian yang dilakukan, perlu dilakukan studi lanjutan seperti membuat *paper kit test* dengan menggunakan kertas selulosa atau dengan menambahkan asam kedalam filtrat ubi ungu.

Kata kunci : Formalin, *Paper Kit*, Ubi Ungu

Daftar Bacaan : 31 (2002-2025)

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***Making Paper Kit Test Using Purple Sweet Potato Extract (ipomoea batatas L.)
for Formaldehyde Identification***

XVI + 41 pages, 14 figures, 7 tables, and 12 appendices

ABSTRACT

Formalin is a hazardous chemical that is often misused as a food preservative. This study aims to develop a paper kit test based on purple sweet potato (Ipomoea batatas L.) extract. Anthocyanin extraction was carried out using a maceration method using 96% ethanol solvent, then formulated into Whatman No. 41 paper media for making the paper kit. This study was conducted at the Chemistry Laboratory of the Medical Laboratory Technology Department of the Tanjung Karang Ministry of Health Polytechnic. The color reaction test showed that the purple sweet potato extract changed color to purplish red when reacting with formalin. Validity tests were carried out through precision (repeatability), limit of detection (limit of detection), and selectivity (specificity). The results showed that the paper kit was able to detect formalin up to a concentration of 5 ppm with a significant and consistent color response, and did not react to non-formalin reference substances. The maximum wavelength (λ max) of the reaction was determined in the range of 582 nm using a UV-Vis spectrophotometer. Based on the research conducted, further studies are needed, such as making a paper test kit using cellulose paper or by adding acid to the purple sweet potato filtrate.

Keywords: Formalin, Paper Kit , Purple Sweet Potato

Reading List: 31 (2002-2025)