Sistem Instrumentasi Ekstraksi Senyawa Flavonoid Daun Kelor (*Morinaga Leaf*) Menggunakan *Ultrasound Assisted Extraction* (UAE)

M. Salim Rahmatullah (2404011941008)

Abstrak

Dalam penelitian ini, telah dibangun sistem monitoring suhu berbasis antarmuka komputer pada proses ekstraksi daun kelor (Moringa Olivera Lamk) menggunakan Ultrasound Assisted Extraction (UAE) untuk mendapatkan senyawa flavonoid. Suhu ekstraksi dimonitoring selama proses ekstraksi. Ekstraksi daun kelor dengan UAE dilakukan untuk melihat pengaruh volume pelarut dan waktu ekstraksi. Variasi yang dilakukan yaitu volume pelarut dengan rentang 10–30 mL, waktu ekstraksi selama 10–50 menit. Metanol dipilih sebagai pelarut dalam penelitian ini dengan bahan 10 gr daun kelor. Uji kandungan total senyawa flavonoid menggunakan spektrofotometri UV-VIS. Sistem monitoring suhu selama proses ekstraksi dapat dilihat melalui pemrograman antarmuka komputer. Sedangkan hasil ekstraksi senyawa flavonoid dari daun kelor menggunakan UAE menunjukkan hasil terbaik didapatkan pada penggunaan volume pelarut 20 mL dan waktu ekstraksi selama 20 menit. Kandungan flavonoid terbaik yang didapatkan adalah 2.855/mg Quarsetin. Hasil ini menunjukkan bahwa volume pelarut dan waktu ekstraksi mempengaruhi hasil ekstraksi senyawa flavonoid dari daun kelor menggunakan Ultrasound Assisted Extraction (UAE).

Kata kunci: Monitoring Suhu, Antarmuka Komputer, Ultrasound Assisted Extraction (UAE), Daun Kelor, dan Flavonoid.

Instrumentation System of Flavonoid Compounds of Morinaga Leaf Using *Ultrasound Assisted Extraction* (UAE)

M. Salim Rahmatullah (2404011941008)

Abstrak

In this study, a computer interface-based temperature monitoring system was built in the Moringa Olivera Lamk leaf extraction process using Ultrasound Assisted Extraction (UAE) to obtain flavonoid compounds. The extraction temperature is monitored during the extraction process. Moringa leaf extraction with UAE was carried out to see the effect of solvent volume and extraction time. The variations carried out are the volume of the solvent in the range 10-30 mL, the extraction time for 10-50 minutes. Methanol was chosen as the solvent in this study using 10 grams of Moringa leaves. Test the total content of flavonoids using UV-VIS spectrophotometry. The temperature monitoring system during the extraction process can be viewed through a computer interface programming. While the results of the extraction of flavonoids from Moringa leaves using UAE showed the best results were obtained using a solvent volume of 20 mL and extraction time of 20 minutes. The best flavonoid content obtained was 2.855 / mg Quarsetin. These results indicate that the solvent volume and extraction time affect the extraction yield of flavonoids from Moringa leaves using Ultrasound Assisted Extraction (UAE).

Keywords: Temperature Monitoring, Computer Interface, Ultrasound Assisted Extraction (UAE), Moringa Leaves, and Flavonoids.

Pembimbing akademik

1. Suryono
2. Jatmiko Endro Suseno