

INTISARI

Penyediaan ekstrak kunyit yang mempunyai kandungan kurkumin sesuai standar industri masih terbatas. Hal ini disebabkan karena belum tersedia alat ukur kadar kurkumin yang sederhana bagi para petani kunyit. Pengujian kadar kurkumin dengan instrumentasi pada standar laboratorium memerlukan biaya yang tinggi. Hal ini membuat para petani kunyit harus memiliki suatu alat ukur kadar kurkumin yang sederhana dan aplikatif. Alat ukur ini menerapkan metode spektrofotometri menggunakan monokromator prisma. Penelitian ini memberikan solusi untuk memudahkan para petani dalam menjual hasil panen kunyit mereka kepada pihak industri.

Alat ukur kadar kurkumin menggunakan monokromator prisma terdiri dari dua proses pengukuran, yaitu pengukuran etanol dan pengukuran larutan kunyit. Selisih tegangan kedua pengukuran akan dikalibrasi dengan spektrofotometer standar untuk memperoleh besar absorban standar. Hasil kalibrasi digunakan untuk menghitung kadar kurkumin dan kemudian diubah dalam persen b/b . Semua hasil pengukuran diolah mikrokontroler dan ditampilkan pada LCD *character*.

Alat ukur kadar kurkumin menggunakan monokromator prisma sudah berhasil dibuat dan dapat bekerja dengan baik. Sistem dapat menjalankan kedua proses pengukuran dengan baik dan menampilkan data-data hasil pengukuran sesuai dengan perancangan. Tingkat kepresisian alat ukur masih kurang dengan persentase *error* rata-rata kadar kurkumin 29,969% dan *error* rata-rata persen kadar kurkumin 29,988%.

Kata kunci : kunyit, kurkumin, alat ukur, monokromator prisma

ABSTRACT

Provision of turmeric extract that contains curcumin which has the industry standard is still limited. This is caused by level of curcumin instrument that are simple are not yet available for turmeric farmers. Testing levels of curcumin with standard laboratory instrumentation needs a high cost. It makes turmeric farmers must have level of curcumin instrument that are simple and applicable. This instrument is applying spectrophotometric method using a prism monochromator. This research provides solutions to facilitate the farmers to sell their turmeric crops to the industry.

Level of curcumin instrument using prism monochromator consists of two processes of measurement, which are measurement of ethanol and measurement of turmeric solutions. The differences between two voltage will be calibrated with a standard spectrophotometer to obtain the absorbance standards. Calibration results are used to calculate the levels of curcumin and then converted in percent b/b . All measurement results processed by the microcontroller and displayed on the LCD character.

Level of curcumin instrument using prism monochromator has been created and can work well. The system can run processes of measurement well and display measurement data in accordance with the design. Level of precision measuring tools are still lacking with an average percentage error of curcumin levels of 29.969% and the average percent error curcumin levels of 29.988%.

Keywords: turmeric, curcumin, instruments, prism monochromator