

## INTISARI

Kunyit merupakan salah satu hasil pertanian yang banyak ditemukan di Indonesia. Di dalam kunyit terkandung kurkumin yang berguna untuk bahan baku obat-obat tradisional. Sampai saat ini masih ada beberapa kelompok petani penghasil rimpang kunyit (*Curcuma domestica*) yang masih mengalami permasalahan dalam pengukuran kadar kurkumin yang terkandung dalam rimpang kunyit. Alat ukur kadar kurkumin berbasis cahaya monokromatis memberikan solusi agar setiap orang dapat mengukur kadar kurkumin sesuai kebutuhan.

Alat ukur kadar kurkumin berbasis cahaya monokromatis menggunakan sumber cahaya LED dan laser sebagai pemancar dan menggunakan fotodiode sebagai penerima cahaya dari LED atau laser. Setiap orang yang ingin melakukan pengukuran kadar kurkumin hanya perlu meletakkan larutan kurkumin di antara pemancar dan penerima, baik menggunakan LED atau laser. Hasil pengukuran kadar kurkumin ditampilkan pada LCD.

Alat ukur kadar kurkumin berbasis cahaya monokromatis belum dapat bekerja dengan baik, karena *error* rata-rata yang dihasilkan pengukuran larutan kadar kurkumin menggunakan sumber cahaya laser mencapai 15,463%. Sedangkan *error* rata-rata yang dihasilkan menggunakan sumber cahaya LED mencapai 19,099%.

Alat ukur kadar kurkumin berbasis cahaya monokromatis dapat mengukur larutan 1ppm-5ppm tetapi tingkat keberhasilannya belum presisi dengan spektrofotometer standar.

Kata kunci : alat ukur, monokromatis, kurkumin, kunyit.

## ABSTRACT

Turmeric is one of the plantation products in Indonesia. Turmeric contains curcumin which used as a raw materials for traditional medicine. until this day there are still some groups of turmeric (*Curcuma domestica*)'s farmers still having problem in measuring curcumin's amount in turmeric. Curcumin's amount measurement instrument monochromatic light based was expected to give solutions so everyone could measure curcumin's amount.

Curcumin's amount measurement instrument monochromatic light based using LED light source and laser as transmitter and using photodiode as light receiver from LED or laser. everyone who wants to measure curcumin's amount only need to put curcumin's liquid between the transmitter and receiver, even using LED or laser as well. Curcumin's amount will be showed on LCD.

Curcumin's amount measurement instrument monochromatic light isn't working well yet, because average error on curcumin's amount measurement using laser light source with error reach 15,463% and using LED light source with error reach 19,099%.

Curcumin's amount measurement instrument monochromatic light can measure 1ppm to 5 ppm liquid but successful level was not precise yet with standar spectrometer.

Keyword: measure intsrument, monochromatic, curcumin, turmeric.

