

ANTIFUNGAL EFFICACY OF TURMERIC (*Curcuma domestica Val.*) ESSENTIAL OIL ON THE GROWTH OF *Trichophyton rubrum*

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ABSTRACT

Background : Tinea pedis is a fungal infection that attacks the keratinized tissue of the skin, hair and nails caused by the fungus *Trichophyton rubrum*. Turmeric rhizome (*Curcuma domestica Val.*) is a spice plant used as a traditional medicine with the active ingredients of curcumin, flavonoids and essential oils containing tumerone, carvakrol, α - felandren and terpinolen.

Objective: The aim of this study was to determine the antifungal efficacy of turmeric rhizome essential oil (*Curcuma domestica Val.*) on the growth of the fungus *Trichopython rubrum*, to aim the diameter of the inhibition zone of various concentrations of turmeric rhizome essential oil (*Curcuma domestica Val.*) against the fungus *Trichopython rubrum*, to aim the sensitivity of the inhibitory power of turmeric (*Curcuma domestica Val.*) essential oil to the fungus *Trichopython rubrum*, to aim the percentage and effectiveness of the inhibitory power of rhizome essential oil turmeric (*Curcuma domestica Val.*) against the fungus *Trichopython rubrum*.

Method : The research was performed as experimental laboratory with post test only with control group design. 2 x 24-hour *Trichopython rubrum* were used as the research subjects which had been inoculated on SDA media and given essential oils in various concentrations of 20 %, 40 %, 60 %, 80 % and 100 %. The plate was kept for 24 hour at incubator and the inhibitory diameter zone formed was measured. The data was analyzed by *Oneway Annova test*.

Result : The average of inhibitory diameter zone of *Trichopython rubrum* in each concentration were 20 %, 40 %, 60 %, 80 % and 100 % is 7,16 mm, 9,16 mm, 11,58 mm, 14,60 mm dan 16,74 mm with moderate sensitivity starting at a concentration of 20% and very effective at a concentration of 60%. The results of statistical analysis showed that turmeric essential oil has the potential as an antifungal against *Trichopython rubrum* growth.

Conclusion: Turmeric essential oil has potential as an antifungal against *Trichopython rubrum* growth.

Keywords : Antifungal, turmeric essential oil, *Trichopython rubrum*.

EFIKASI ANTIJAMUR MINYAK ATSIRI RIMPANG KUNYIT (*Curcuma domestica Val.*) TERHADAP PERTUMBUHAN JAMUR *Trichophyton rubrum*

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ABSTRAK

Latar Belakang : Tinea pedis merupakan infeksi kulit yang menyerang jaringan keratin kulit, rambut dan kuku yang disebabkan oleh jamur *Trichophyton rubrum*. Rimpang kunyit (*Curcuma domestica Val.*) adalah tumbuhan rempah-rempah yang digunakan sebagai obat tradisional dengan bahan aktif curcumin, flavonoid dan minyak atsiri yang mengandung tumeron, karvakrol, α -felandren dan terpinolen.

Tujuan : Mengetahui efikasi antijamur minyak atsiri rimpang kunyit (*Curcuma domestica Val.*) terhadap pertumbuhan jamur *Trichophyton rubrum*, mengetahui diameter zona hambat berbagai konsentrasi minyak atsiri rimpang kunyit (*Curcuma domestica Val.*) terhadap jamur *Trichophyton rubrum*, mengetahui sensitivitas daya hambat minyak atsiri rimpang kunyit (*Curcuma domestica Val.*) terhadap jamur *Trichophyton rubrum*, mengetahui persentase dan tingkat efektivitas daya hambat minyak atsiri rimpang kunyit (*Curcuma domestica Val.*) terhadap jamur *Trichophyton rubrum*.

Metode : Penelitian ini merupakan penelitian eksperimen murni dengan desain *Post Test Only Control Group Design*. Subyek penelitian ini adalah jamur *Trichophyton rubrum* berumur 2x24 jam pada media *Sabouraud Dextrose Agar* (SDA) dan diberi minyak atsiri rimpang kunyit menggunakan metode difusi *Kirby Bauer* dengan lima kali pengulangan untuk setiap konsentrasi yang digunakan yaitu 20 %, 40 %, 60 %, 80 % dan 100 %. Pengamatan aktivitas minyak atsiri rimpang kunyit dilakukan dengan mengukur diameter zona hambat menggunakan jangka sorong. Data yang diperoleh dianalisis secara statistik dengan *One Way Anova*.

Hasil : Rerata diameter zona hambat yang terbentuk pada konsentrasi minyak atsiri rimpang kunyit 20 %, 40 %, 60 %, 80 % dan 100 % terhadap pertumbuhan jamur *Trichophyton rubrum* adalah sebesar 7,16 mm, 9,16 mm, 11,58 mm, 14,60 mm dan 16,74 mm dengan sensitivitas sedang mulai pada konsentrasi 20% dan sangat efektif pada konsentrasi 60%. Hasil analisis statistik menunjukkan adanya perbedaan rerata diameter zona hambat pada berbagai konsentrasi minyak atsiri rimpang kunyit terhadap pertumbuhan jamur *Trichophyton rubrum*.

Kesimpulan : Minyak atsiri rimpang kunyit (*Curcuma domestica Val.*) mempunyai efikasi antijamur pertumbuhan jamur *Trichophyton rubrum*.

Kata kunci : Antijamur, minyak atsiri rimpang kunyit, *Trichophyton rubrum*

