

ABSTRACT

Background: *Trichophyton rubrum* is a major fungal cause of dermatophytosis in tropical regions such as Indonesia. Diagnosis of *Trichophyton rubrum* infection requires culture in media such as *Potato Dextrose Agar* (PDA), which generally uses distilled water as a solvent. However, cost and availability limitations are often an obstacle. Therefore, an alternative solvent that is more economical and easily available is needed. *Air Conditioner* (AC) condensate, has similar physical properties to distilled water. So does mineral water, which is relatively easy to obtain and non-toxic.

Objective: To determine the differences and mean growth diameter as well as macroscopic and microscopic morphology of *Trichophyton rubrum* fungi on PDA media using AC condensate solvent, mineral water and distilled water.

Methods: This research is a pre-experimental research with Intact-Group Comparison design. *Trichophyton rubrum* fungal suspension was grown on PDA media with different solvents, namely AC condensate, mineral water and distilled water, each with 9 repetitions. Analytical analysis was performed by calculating the difference in fungal growth diameter using the calculation formula. Statistical analysis test was performed with Shapiro-Wilk normality test and One Way Anova Test.

Results: The average diameter of *Trichophyton rubrum* fungal colonies on PDA media with AC condensate solvent was 75.98 mm, mineral water PDA media was 67.22 mm and distilled water PDA media was 71.41 mm. The results showed that there was a difference in the growth diameter of *Trichophyton rubrum* fungi grown on AC condensate PDA media, mineral water and distilled water ($p=0.000$)

Conclusion: There is a significant difference in the diameter of *Trichophyton rubrum* fungal growth on PDA media using AC condensate solvent, mineral water and distilled water.

Keywords: *Trichophyton rubrum*, *Potato Dextrose Agar* media, AC condensate, mineral water

ABSTRAK

Latar Belakang: *Trichophyton rubrum* merupakan jamur penyebab utama dermatofitosis di wilayah tropis seperti Indonesia. Diagnosis infeksi *Trichophyton rubrum* memerlukan kultur di media seperti *Potato Dextrose Agar* (PDA), yang umumnya menggunakan pelarut akuades. Namun, keterbatasan biaya dan ketersediaan sering kali menjadi kendala. Oleh karena itu, diperlukan alternatif pelarut yang lebih ekonomis dan mudah didapat. Kondensat *Air Conditioner* (AC), memiliki sifat fisik yang mirip dengan akuades. Begitu pula air minum kemasan, yang relatif mudah diperoleh dan tidak bersifat toksik.

Tujuan: Mengetahui perbedaan dan rerata diameter pertumbuhan serta morfologi makroskopis dan mikroskopis jamur *Trichophyton rubrum* pada media PDA menggunakan pelarut kondensat AC, air minum kemasan dan akuades.

Metode: Penelitian ini merupakan penelitian pre-eksperimental dengan desain Intact-Group Comparison. Suspensi jamur *Trichophyton rubrum* ditanam pada media PDA dengan pelarut berbeda, yaitu kondensat AC, air minum kemasan dan akuades, masing-masing dengan 9 kali pengulangan. Analisis analitik dilakukan dengan menghitung selisih diameter pertumbuhan jamur menggunakan rumus perhitungan. Uji analisis statistik dilakukan dengan uji normalitas *Shapiro-Wilk* dan *One Way Anova Test*.

Hasil: Rerata diameter koloni jamur *Trichophyton rubrum* pada media PDA dengan pelarut kondensat AC sebesar 75,98 mm, media PDA air minum kemasan sebesar 67,22 mm dan media PDA akuades sebesar 71,41 mm. Hasil penelitian menunjukkan ada perbedaan hasil diameter pertumbuhan jamur *Trichophyton rubrum* yang tumbuh pada media PDA kondensat AC, air minum kemasan dan akuades ($p=0,000$)

Kesimpulan: Adanya perbedaan yang signifikan pada diameter pertumbuhan jamur *Trichophyton rubrum* pada media PDA yang menggunakan pelarut kondensat ac, air minum kemasan dan akuades.

Kata Kunci: *Trichophyton rubrum*, media *Potato Dextrose Agar*, kondensat AC, air minum kemasan