

# **PEMANFAATAN KONDENSAT AC (AIR CONDITIONER) DAN AIR MINUM KEMASAN SEBAGAI PELARUT MEDIA MALT EXTRACT AGAR (MEA) PADA PERTUMBUHAN JAMUR *Trichophyton rubrum***

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## **ABSTRAK**

**Latar belakang :** Kondensat *Air Conditioner* (AC) belum dimanfaatkan secara maksimal, padahal gedung dan beberapa rumah menggunakan AC sebagai pendingin ruangan. Kondensat AC bisa digunakan sebagai pengganti akuades berdasarkan kesamaan sifatnya. Alternatif lainnya yaitu air minum kemasan yang mudah ditemui di mana saja, relatif murah dan tidak bersifat toksik terhadap organisme sehingga bisa dimanfaatkan sebagai pelarut media. Media *Malt Extract Agar* (MEA) merupakan media sintetik yang mengandung nutrisi dan memiliki pH 5.5 yang mendukung pertumbuhan jamur. Jamur *Trichophyton rubrum* merupakan masalah infeksi kulit yang sering dijumpai di daerah beriklim tropis seperti Indonesia.

**Tujuan :** Untuk mengetahui bahwa kondensat AC dan air minum kemasan dapat dimanfaatkan sebagai media pelarut *Malt Extract Agar* (MEA) pada pertumbuhan jamur *Trichophyton rubrum*.

**Metode :** Metode pada penelitian ini adalah *Intact-Group Comparison* dengan subjek jamur *Trichophyton rubrum*. Objek penelitian adalah media MEA yang dilarutkan dengan tiga jenis pelarut: akuades, kondensat AC, dan air minum kemasan. Masing-masing perlakuan diulang sembilan kali. Analisis analitik dilakukan dengan menghitung selisih diameter pertumbuhan jamur *Trichophyton rubrum*. Analisis statistik dilakukan menggunakan uji Shapiro-Wilk, uji homogenitas, dan *One Way ANOVA* dengan SPSS 16.0.

**Hasil :** Rerata diameter jamur *Trichophyton rubrum* pelarut akuades sebesar 71,01 mm, kondensat AC 73,63 mm, dan air minum kemasan 67,54 mm. Kondensat AC menunjukkan efektivitas tertinggi sebesar 103,68%, sedangkan air minum kemasan 95,11%. Uji ANOVA menunjukkan ada perbedaan hasil pertumbuhan diameter jamur *Trichophyton rubrum* yang tumbuh pada media MEA akuades, kondensat AC dan air minum kemasan ( $p=0,00$ )

**Kesimpulan :** Kondensat AC maupun air minum kemasan dapat dimanfaatkan sebagai pelarut media MEA untuk pertumbuhan *Trichophyton rubrum*.

**Kata kunci :** Diameter, karakteristik jamur, kondensat AC, air minum kemasan, MEA, *Trichophyton rubrum*

# USE OF AIR CONDITIONER CONDENSATE AND MINERAL WATER AS MALT EXTRACT AGAR (MEA) MEDIA SOLUTION ON THE GROWTH OF THE FUNGUS *Trichophyton rubrum*

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## ABSTRACT

**Background:** Air Conditioner (AC) condensate has not been maximally utilized, even though buildings and some homes use AC as air conditioning. AC condensate can be used as a substitute for distilled water based on its similarity. Another alternative is bottled drinking water which is easily found anywhere, relatively cheap and not toxic to organisms so that it can be used as a media solvent. Malt Extract Agar (MEA) media is a synthetic media that contains nutrients and has a pH of 5.5 which supports fungal growth. *Trichophyton rubrum* fungus is a skin infection problem that is often found in tropical climates such as Indonesia.

**Objective:** To find out that air conditioner condensate and bottled drinking water can be utilized as mediasolvent Malt Extract Agar (MEA) on the growth of the fungus *Trichophyton rubrum*.

**Methods:** The method in this study is Intact-Group Comparison with the subject of *Trichophyton rubrum* fungus. The object of the study was MEA media dissolved with three types of solvents: distilled water, AC condensate, and bottled drinking water. Each treatment was repeated nine times. Analytical analysis was performed by calculating the difference in the growth diameter of *Trichophyton rubrum* fungus. Statistical analysis was performed using Shapiro-Wilk test, homogeneity test, and One Way ANOVA with SPSS 16.0.

**Results:** The mean diameter of *Trichophyton rubrum* fungus in distilled water solvent was 71.01 mm, AC condensate 73.63 mm, and bottled water 67.54 mm. AC condensate showed the highest effectiveness of 103.68%, while bottled water 95.11%. ANOVA test shows there is a difference in the results of the growth of the diameter of *Trichophyton rubrum* fungi that grow on MEA media distilled water, AC condensate and bottled drinking water ( $p = 0.00$ ).

**Conclusion:** AC condensate and bottled drinking water can be utilized as solvents for MEA media for *Trichophyton rubrum* growth.

**Keywords:** Fungal diameter, characteristics, air conditioning condensate, bottled water, MEA, *Trichophyton rubrum*.