

THE UTILIZATION OF MELT BLOWN CARTRIDGE FILTER AND ULTRAVIOLET FOR DRINKING WATER TREATMENT IN RELIGIOUS TOURISM OF MAULANA MALIK IBRAHIM GRESIK

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ABSTRACT

Drinking water is water that goes through a treatment process or without a treatment process that meets health requirements and can be drunk immediately. Drinking water that is safe for health if it meets physical, microbiological, chemical and radioactive requirements. The results of previous studies indicate that drinking water in religious tourism Maulana Malik Ibrahim Gresik contains coliform bacteria that exceeds the threshold of 15 CFU / 100ml. This study aims to determine the effectiveness of total decrease in coliform bacteria in drinking water using a combination of melt blown cartridge filter and ultraviolet.

This type of research is experimental research. The design used was a pure experiment with a Pretest-Posttest with control group model that compared the differences in total decrease in coliform bacteria in drinking water by processing using melt blown cartridge filters and ultraviolet. Data collection was carried out by laboratory examination of total coliform bacteria before and after treatment. Analysis of the effectiveness of the decline is done descriptively.

The results of the study decreased the total coliform bacteria in drinking water before processing by 27 CFU / 100 ml and after drinking water treatment did not contain total coliform bacteria (0 CFU / 100 ml). The combination of melt blown cartridge filter and ultraviolet is effective in reducing total coliform bacteria according to Permenkes No. 492 of 2010. Efficiency decreased by 100%.

Religious tourism managers are advised to implement the design of tools that have been made with a combination of melt blown cartridge filter and ultraviolet to treat drinking water so that the water provided is suitable for consumption and safe for health.

Keyword: drinking water, melt blown cartridge filter, ultraviolet.

PEMANFAATAN MELT BLOWN CARTRIDGE FILTER DAN ULTRAVIOLET UNTUK PENGOLAHAN AIR MINUM DI WISATA RELIGI MAULANA MALIK IBRAHIM GRESIK

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ABSTRAK

Air minum merupakan air yang melalui proses pengolahan atau tanpa proses pengolahan yang memenuhi syarat kesehatan dan dapat langsung diminum. Air minum yang aman bagi kesehatan apabila memenuhi persyaratan fisik, mikrobiologi, kimia, dan radioaktif. Hasil penelitian terdahulu menunjukkan bahwa air minum di wisata religi Maulana Malik Ibrahim Gresik mengandung bakteri *coliform* yang melebihi ambang batas yakni 15 CFU/100ml. Penelitian ini bertujuan untuk mengetahui efektifitas penurunan total bakteri *coliform* pada air minum menggunakan kombinasi *melt blown cartridge filter* dan ultraviolet.

Jenis penelitian ini adalah *eksperimen research*. Desain yang digunakan adalah eksperimen murni dengan model *Pretest-Posttest with control grup* yang membandingkan perbedaan penurunan total bakteri *coliform* pada air minum dengan pengolahan menggunakan *melt blown cartridge filter* dan ultraviolet. Pengumpulan data dilakukan dengan cara pemeriksaan laboratorium total bakteri *coliform* sebelum dan sesudah perlakuan. Analisa efektifitas penurunan dilakukan secara deskriptif.

Hasil penelitian penurunan total bakteri *coliform* pada air minum sebelum pengolahan sebesar 27 CFU/100 ml dan setelah pengolahan air minum sudah tidak mengandung total bakteri *coliform* (0 CFU/ 100 ml). Kombinasi antara *melt blown cartridge filter* dan ultraviolet efektif untuk menurunkan total bakteri *coliform* sesuai dengan Permenkes No. 492 Tahun 2010. Efisiensi penurunan sebesar 100%.

Pengelola wisata religi disarankan dapat mengimplementasikan rancangan alat yang telah dibuat dengan kombinasi antara *melt blown cartridge filter* dan ultraviolet untuk mengolah air minum agar air yang disediakan layak konsumsi dan aman bagi kesehatan.

Kata Kunci: air minum, *melt blown cartridge filter*, ultraviolet.