

PENGARUH LAMA PENYINARAN LAMPU ULTRAVIOLET TERHADAP PENURUNAN ANGKA KUMAN UDARA DI LABORATORIUM JURUSAN ANALIS KESEHATAN

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ABSTRAK

Latar Belakang : Bakteri udara dapat di temukan di semua tempat. Jumlah bakteri udara yang banyak yaitu terdapat di laboratorium karena ruangan tersebut juga sering digunakan untuk praktikum secara terus menerus. Pengendalian bakteri udara dapat dilakukan dengan cara sterilisasi menggunakan sinar ultraviolet. Radiasi sinar ultraviolet dapat membunuh bakteri dengan panjang gelombang antara 400 nm – 100 nm yang berada diantara spektrum sinar X dan cahaya tampak. Faktor keberhasilan dari radiasi sinar ultraviolet yaitu aliran udara, kelembaban, jarak antara sumber cahaya dengan bahan yang disterilkan dan lamanya waktu sterilisasi.

Tujuan Penelitian : Mengetahui pengaruh lama penyinaran lampu ultraviolet terhadap penurunan angka kuman udara serta mengetahui persentase penurunan angka kuman udara di laboratorium Jurusan Analis Kesehatan.

Metode Penelitian : Penelitian ini adalah quasi eksperiment dengan menggunakan rancangan *nonequivalent control group design*. Penelitian ini dilaksanakan pada bulan Maret 2021. Metode pengambilan sampel udara yaitu *exposure plate*. Analisis data menggunakan *kruskal-wallis*.

Hasil Penelitian : Rerata persentase penurunan jumlah bakteri udara sebelum penyinaran dengan penyinaran selama 10 menit adalah 59,52%, penyinaran selama 20 menit adalah 73,80% serta penyinaran selama 30 menit adalah 92,86%. Bakteri yang ditemukan di laboratorium adalah bakteri kokus Gram positif, kokus Gram negatif dan bakteri basil Gram positif. Hasil uji statistik uji kruskal-wallis didapatkan nilai signifikansi 0,000 yang berarti ada pengaruh lama penyinaran terhadap penurunan jumlah bakteri udara.

Kesimpulan : Ada pengaruh lama penyinaran lampu ultraviolet terhadap penurunan jumlah bakteri udara di laboratorium Jurusan Analis Kesehatan.

Kata Kunci : Sinar ultraviolet, jumlah bakteri udara, waktu penyinaran

**THE EFFECT OF ULTRAVIOLET LAMP IRRADIATION TIME
TO REDUCE AIRBORNE GERMS IN THE LABORATORY
DEPARTMENT OF HEALTH ANALYSIS**

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ABSTRACT

Background : Airborne bacteria can be found all over the place. The large number of airborne bacteria is found in the laboratory because this room is also often used for continuous practicum. Airborne bacteria control can be done by means of sterilization using ultraviolet light. Ultraviolet radiation can kill bacteria with a wavelength between 400 nm - 100 nm which is between the X-ray and visible light spectrum. The success factors of ultraviolet radiation are airflow, humidity, the distance between the light source and the sterilized material and the length of time for sterilization.

Research Objectives : to determine the effect of long exposure to ultraviolet lights on reducing the number of air germs and to determine the percentage reduction in the number of air germs in the Health Analyst Department laboratory.

Research Methods : This study is a quasi-experimental study using a nonequivalent control group design. This research held on March 2021. The method of taking air samples was the exposure plate. Data analysis using kruskal-wallis.

Research Result : The average percentage reduction in the number of airborne bacteria before irradiation with 10 minutes treatment was 59.52%, with 20 minutes treatment was 73.80% and with 30 minutes treatment was 92.86%. The bacteria found in the laboratory are Gram-positive cocci, Gram-negative cocci and Gram-positive bacilli. The results of the kruskal-wallis test statistical test obtained a significance value of 0.000, which means that there is an effect of long exposure to a decrease in the number of airborne bacteria.

Conclusion : There is an effect of long exposure to ultraviolet light on reducing the number of airborne bacteria in the Health Analyst Department laboratory.

Keywords : Ultraviolet light, the number of air bacteria, exposure time