

## ABSTRACT

**Background** : Bacteriological laboratory in Health Analyst Department of Yogyakarta Health Polytechnic of Ministry of Health is a laboratory used by students to carry out practice in bacteriology courses. As for the practices carried out include making media, planting bacteria, and identification of bacteria so that potential contamination occurs. Therefore it is necessary to attempt to control airborne germ numbers by using an ultraviolet tube.

**Research Purposes** : Knowing the effectiveness of decreasing the number of air germs by flowing air into the ultraviolet tube in the bacteriological laboratory in Health Analyst Department of Yogyakarta Health Polytechnic of Ministry of Health.

**Research Methods** : Three treatments were carried out in this study, namely air before being drained into a ultraviolet tube, air after flowing into one ultraviolet tube, and air after flowing into two ultraviolet tubes. Irradiation uses ultraviolet in the tube so that air was sucked for one minute with speed 225 liters/minute and flowed into the ultraviolet tube. At the output of the air device contacted with the PCA media as an inoculation process. Then the PCA media was incubated at temperature 37°C for 48 hours, and counted growing colonies.

**Research Result** : The number of air germs before the air was flowed into the ultraviolet tube the average was 268 CFU/m<sup>3</sup>, the number of air germs after the air was flowed into one ultraviolet tube the average was 73 CFU/m<sup>3</sup>, and the number of air germs after the air was flowed into two ultraviolet tubes the average was 32 CFU/m<sup>3</sup>. The percentage decrease in the number of air germs in the flow of air in one ultraviolet tube was 72,76%, and the percentage decrease in the number of air germs in the flow of air in two ultraviolet tubes was 88,06%.

**Conclusion** : Ultraviolet tubes are effective in reducing the number of air germs.

**Keywords** : Ultraviolet tubes, velocity of air flow, air germ number.

## ABSTRAK

**Latar Belakang :** Laboratorium Bakteriologi Jurusan Analis Kesehatan Poltekkes Kemenkes Yogyakarta adalah laboratorium yang digunakan mahasiswa untuk melaksanakan praktek dalam mata kuliah bakteriologi. Adapun praktek yang dilakukan meliputi pembuatan media, penanaman bakteri, dan identifikasi bakteri sehingga berpotensi terjadinya kontaminasi. Oleh karena itu perlu dilakukan usaha pengendalian angka kuman udara salah satunya dengan menggunakan tabung ultraviolet.

**Tujuan penelitian :** Mengetahui efektivitas penurunan angka kuman udara dengan mengalirkan udara ke dalam tabung UV pada ruang laboratorium bakteriologi Jurusan Analis Kesehatan Poltekkes Kemenkes Yogyakarta.

**Metode penelitian :** Dilakukan tiga perlakuan dalam penelitian ini yaitu udara sebelum dialirkan ke dalam tabung UV, udara setelah dialirkan ke dalam 1 tabung UV, dan udara setelah dialirkan ke dalam 2 tabung UV. Penyinaran menggunakan UV dalam tabung sehingga udara disedot selama 1 menit dengan kecepatan 225 liter/menit dan dialirkan ke dalam tabung UV. Pada output alat udara dikontakkan dengan media PCA sebagai proses inokulasi. Kemudian media PCA diinkubasi pada suhu 37°C selama 48 jam, dan dihitung koloni yang tumbuh.

**Hasil penelitian :** Angka kuman udara sebelum udara dialirkan ke dalam tabung UV rata-ratanya adalah 268 CFU/m<sup>3</sup>, angka kuman udara setelah udara dialirkan ke dalam 1 tabung UV rata-ratanya adalah 73 CFU/m<sup>3</sup>, dan angka kuman udara setelah udara dialirkan ke dalam 2 tabung UV rata-ratanya adalah 32 CFU/m<sup>3</sup>. Persentase penurunan angka kuman udara pada pengaliran udara dalam 1 tabung UV adalah 72,76%, dan persentase penurunan angka kuman udara pada pengaliran udara dalam 2 tabung UV adalah 88,06%.

**Kesimpulan :** Tabung UV efektif dalam menurunkan angka kuman udara.

**Kata Kunci :** Tabung UV, kecepatan aliran udara, angka kuman udara.