



ABSTRACT

Title : Effect of Automatic Disinfection Box using Ultra
Violet on Microbial Growth of Microorganisms

Name of Researchers : John Christopher B. Bagas, Charles Adriane S.
Guerrero, Marcus M. Saralde

Degree : Bachelor of Science in Computer Engineering

Institution : Polytechnic University of the Philippines

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Adviser : Engr. Jonathan C. Manarang, Engr. Pedrito M.
Tenerife Jr.

Researchers aim to determine the effectiveness of ultra violet lights in disinfecting using an automatic disinfection box. Researchers ought to find the significant difference for disinfecting between UV-based disinfectant and alcohol-based disinfectant, the significant effect of UV intensity, and the difference among the different duration in terms of its effectiveness. Researchers conduct streak plate and spread analysis on four similar pens under normal condition. Effectiveness of UV based and Alcohol based disinfectant were measured based on number of colonies in different treatments. Different treatments were replicated thrice and were compared to a baseline treatment wherein the agar plate was not exposed to UV or Alcohol. Gathered data are analyze using Two-sample & one-sample Wilcoxon test and Kruskal-Walis test. Four-point Likert scale are use to describe the device in terms of necessity, quality, price-quality ratio and approval. Results revealed that the baseline treatment was relatively higher compared to Alcohol based and UV based treatments. This suggests that Alcohol based and UV based disinfectant were more effective in terms of bacterial inhibition. Study shows that there is enough evidence to conclude that UV and Alcohol based disinfectant exhibit no significant difference when it comes to their effectiveness, UV intensity has a significant effect in terms of effectiveness, the different durations (10, 20, 30 seconds) of UV exposure show no significant difference in terms of effectiveness. Responses shows that the

automatic disinfection meets current pandemic situation extremely well, has a very high quality, in terms of price has an above average value for money and the respondents are very satisfied using the device. The researchers recommend develop a real-time UVC dosage monitor module that shows the current UVC dosage of the device producing and a proper item counter.

Keywords: Automatic Disinfection, COVID19, Ultra Violet, Microbial Growth, Microorganisms