

TITLE: ULTRAVIOLET LIGHT IRRADIATION EFFICIENCY IN CAMERA ASEPTIC

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ABSTRACT:

Ultraviolet (UV) irradiation is applied as a method of surface sterilization, both in the preparation of materials in the laboratory, as well as in the treatment of water and food. However, there is the restriction of its use only for the treatment of surfaces. The objective of this work was to evaluate the efficiency of the aseptic camera used for the preparation of culture media in the microbiology laboratory. The culture of *Staphylococcus aureus* (ATCC 14458), activated in Brain Heart Infusion (BHI) broth at 37° for 24 hours was used. This culture was standardized in saline solution at 0.5 scale of MacFarland, in a spectrophotometer with a wavelength of 625nm, to obtain the approximate concentration of $1.0 \cdot 10^8$ CFU.mL⁻¹. Serial dilutions were prepared in saline solution to the estimated concentration of $1.0 \cdot 10^2$ CFU.mL⁻¹. From each dilution, 100µL were plated on Plate Count Agar (PCA) plates by surface spread (triplicate). Two factors were evaluated: plates exposed to UV light with lid and without lid, and exposure times of 30, 60, 90 and 120 seconds were tested, in addition to the control treatment (without exposure to UV light). After the treatments, the plates were incubated at 37°C for 24 hours. At the dilution with approximate concentration of $1.0 \cdot 10^4$ UCF.mL⁻¹, there was no significant difference at 5% between control treatment and with the lid closed at 30 and 60 seconds. For all treatments with the open lid there was an approximate reduction of 2 log. There was no growth of colonies for treatment with open lid and exposure of 120 seconds. It was possible to observe that despite the transparency of the glass in the lid of the Petri dish, there is a limitation of the efficiency of the UV light. The direct incidence of UV light on *S. aureus* contamination was able to promote the approximate reduction of 2 log.

Key-words: UV efficiency, asepsis, logarithmic reduction