



Introduction

- UV-C light wands are being highly touted for home use in the areas of personal care items and food safety in the kitchen
- UV-C light wands range from \$30 to \$200
- The most effective wavelength frequency for microbial destruction is between 220nm and 280nm
- UV-C light alters the genetic structure of thin-walled microbes resulting in death

Purpose

The purpose of the research was to determine the effectiveness of the Germ Guardian LW18 UV-C light wand when compared to Clorox Wipes and Dawn dish soap in sanitizing plastic and wooden cutting boards typically used in the kitchen.

Materials & Methods

- Wooden (2) and plastic (3) cutting boards were sectioned and labeled:
 - Clorox Wipes
 - Dish Soap
 - UV-C Light
- Boards were then contaminated with raw chicken and raw ground beef.
- Sections were sanitized as labeled.
- Hands were contaminated with the chicken and sanitized with a Purell Hand Wipe or with the UV-C light at 10 and 30 seconds.
- The effectiveness of the Germ Guardian UV-C light wand was further assessed at two and three times the recommended length of exposure (20 and 30 seconds.)
- Samples were taken using 3M Quick Swabs and transferred to 3M Petrifilm Aerobic Count Plates.
- Petrifilms were incubated at 37 degrees C for 48 hours.



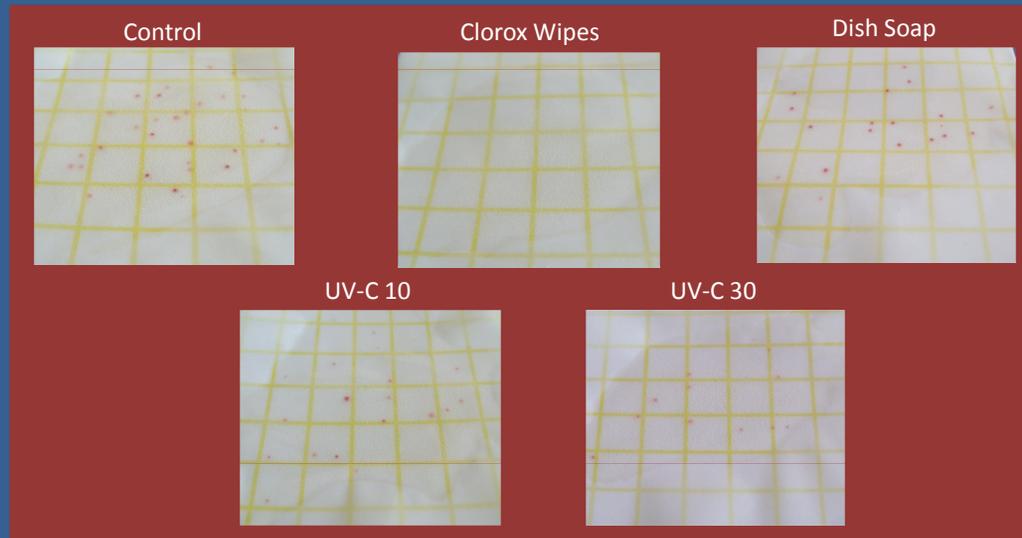
The effectiveness of a UV-C light wand compared to Clorox Wipes and Dawn dish soap in sanitizing cutting boards.

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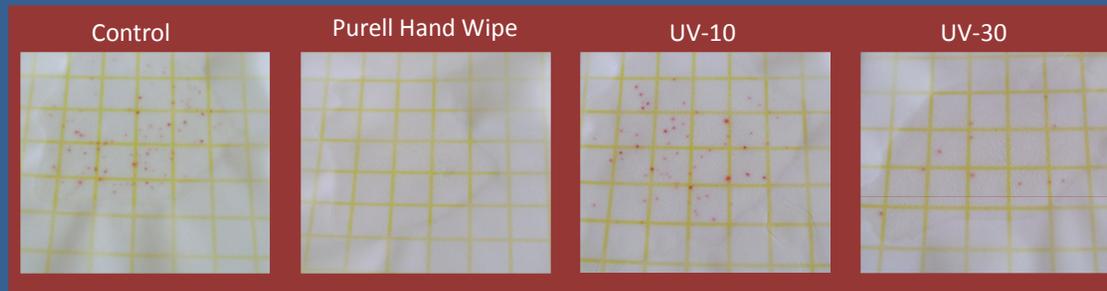
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Results

Plastic Cutting Board - Chicken



Hands Contaminated with Chicken



Results

- Clorox Wipes and Purell Hand Wipes virtually eliminated bacterial growth.
- UV-C light at 30 seconds had less growth than UV-C light at 10 seconds (the recommended exposure).
- Dawn dish soap with hot water had little impact on eliminating bacterial growth.
- There were no obvious differences in results between the wooden and plastic cutting boards.

Summary & Conclusions

- The Clorox Wipes and Purell Hand Wipes were the most effective sanitizing agent.
- The Germ Guardian LW18 UV-C light wand was not as effective at sanitizing cutting boards, when used at the recommended length of exposure, as the Clorox Wipes.
- It took three times the recommended exposure to achieve the results the manufacturer claims at 10 seconds.
- Dawn dish soap and hot water were not effective at sanitizing the cutting boards.



Acknowledgements

- The Chemistry Department for access to incubator during off-class periods.
- The CSB/SJU Undergraduate Research Program.