

CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2021																								
DateRun:	09/07/2021																								
Experimenters:	Aditi Patel																								
ClientType:	Cleaning Company																								
ProjectNumber:	Project #2																								
Substrates:	Textile																								
PartType:	Coupon																								
Contaminants:	Candida Albicans																								
Cleaning Methods:	Steam																								
Analytical Methods:	Organism count																								
Purpose:	To test the disinfection efficacy of NuSteam on cotton fabric to disinfect Candida albicans (C.albicans) after 15 seconds of contact time.																								
Experimental Procedure:	<p>Spread Plating Method</p> <p>Twenty-four hours prior to the test, C.albicans was sub-cultured into three milliliters of tryptic soy broth (TSB) screw-cap tubes and incubated at 37°C (98.6°F). Four glass Petri dishes, each containing a single 2" x 1" swatch of clean cotton fabric, were autoclaved. After autoclaving, the four glass Petri dishes were marked using a black sharpie to designate the positive (P+), negative (N-), Test 1 (T1), and Test 2 (T2).</p> <p>The biosafety cabinet (BSC) was sprayed with 70% v/v isopropyl alcohol using a paper towel before spraying all items going into the BSC after 15 minutes of BSC airflow stabilization. Ten microliters of the organism were pipetted onto the P+, T1, and T2 fabric swatches and air-dried for 15 minutes in the Petri dishes. A motorized pipette with 10ml tips was used to pipet 15 ml of D/E neutralizing broth into four separate 50ml conical tubes labeled P+, N-, T1, and T2. Once C.albicans was air-dried, the P+ swatch was placed into the conical tube. The N-, T1 and T2 swatches were treated with the NuSteam.</p> <p>The supplied NuSteam cleaning disc was attached when testing, and three provided pads were autoclaved before spot testing. The pads were directly placed onto the N-, T1, and T2 swatches for 15 seconds of direct contact without movement before placing them into each of the respective D/E broth conical tubes with autoclaved forceps. The conical tubes were placed on the shaker for 10 minutes.</p> <p>Using the 1000µl pipette, 900µl of 1X PBS was pipetted into autoclaved dilution tubes, and serial dilutions were made for P+, T1, and T2 up to 10⁻⁴ using 100µl of the shaken D/E broth. The stock and serial dilution solutions were plated and spread evenly over the surface of the solid tryptic soy agar (TSA) using a metal spreader. Finished plates were placed into a clean labeled zip lock bag and incubated at 37°C overnight. Isolated colonies were counted the following day to calculate log reduction and percent removal.</p>																								
Results:	<table border="1"> <thead> <tr> <th>Product</th> <th>Log of Positive Swatch</th> <th>Log Reduction</th> <th>% Reduction</th> </tr> </thead> <tbody> <tr> <td>NuSteam</td> <td>5.19</td> <td>5.19</td> <td>100%</td> </tr> </tbody> </table>	Product	Log of Positive Swatch	Log Reduction	% Reduction	NuSteam	5.19	5.19	100%																
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Conclusion:	NuSteam was effective at disinfecting C.albicans with a 5.19 Log Reduction within 15 seconds of direct contact on cotton fabric.																								