

Antimicrobial Efficacy of Selected Disinfectants in the Pharmaceutical Manufacturing Environments

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Abstract

The validation of the disinfectants in the pharmaceutical industry environment is essential process to be sure of the disinfection process of it.

The Aim of the study is to determine the efficacy of Dettol disinfectant in compare to the used disinfectants (chlorine – phenol – alcohol) on different surfaces (Epoxy – stainless steel – glass) in the production environment.

Four concentration (5,2.5,1.25and.625 %) of Dettol was compared to chlorine 1% and phenol 5% and alcohol 70% in time intervals 5, 10,15and 30 minutes and approached to *Bacillus subtilis* ATCC 6633, *Escherichia coli* ATCC 8739, *Staphylococcus aureus* ATCC 6538, *Pseudomonas aeruginosa* ATCC 9027, *Aspergillusniger* ATCC 16404 and *Candida albicans* ATCC 10231 using suspension test.

Then the most significance concentration of Dettol and in the shortest contact time compared to the other disinfectants in the shortest contact time using surface test on different surfaces (Epoxy – stainless steel – glass) in the production environment.

The efficacies calculated by log reductions are calculated according to the following equation: $\text{Log}_{10} \text{ reduction (R)} = \text{log}_{10} \text{ pre-value cfu/plate} - \text{log}_{10} \text{ post value cfu/plate}$.

A sample of four replicates were used per organism per concentration at different time intervals to estimate an overage change at log reduction equal 2 units with estimated standard deviation (SD)equal 0.5 for each sub group, using α error equal 0.05 will provide a power of 20%.

The results elaborated that the most significance concentration of Dettol is 2.5% in contact time 5 minutes and chlorine 1% in contact time 10 min phenol5% in contact time 10 min alcohol 70%in contact time 10 min.

Biography:

Hamza Attia Sadek Mohamed Aboelenin is an Experienced Quality control Microbiologist and researcher with a demonstrated history of working in the pharmaceuticals industry Strong research professional with a Bachelor of Science (BS) focused in Environmental Science & Microbiology from Alexandria University.



Speaker Publications:

1. 2013 Provincial Infectious Diseases Advisory Committee (PIDAC)Best Practices for Cleaning, Disinfection and Sterilization of Medical Equipment/Devices
2. 2016 Varsha M Chaudhari* Studies on antimicrobial activity of antiseptic soaps and herbal soaps against selected human pathogens JSIR 2016; 5(6): 201-204
3. 2015 S.Y.A. AL-DABBAGH; H.H. ALI; I.I. KHALIL and M.A. HAMAD Assiut Vet. Med. J. Vol. 61 No. 147 October 2015

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