The Influence of Citric Acid on Bacterial Growth

Ney, Noemie (School: Atert-Lycee Redange)
Furlano , Jean-Marc (School: Atert-Lycee Redange)

We asked ourselves what the influence of citric acid on bacterial growth would be and at which concentration the solution would be lethal to a certain bacterium. We assumed that Escherichia Coli, living in our intestines, would resist to higher concentrations of citric acid than the hay bacterium, Bacillus Subtilis, or bacteria being part of the dermal flora like Micrococcus Luteus. First, we prepared the citric acid solution and the bacterial solution. Then, we mixed the together to get the final solution Finally, we applied the solution on the Petri dishes, for each concentration 2-3 dishes and let them grow for one week in an incubator. During our experiment we could observe that Escherichia Coli and Bacillus Subtilis have, merely been impaired by the citric acid. However, Micrococcus Luteus does not subsist in concentrations higher than a value between 240 and 260 g/L. In conclusion, it can be said that the two least “dangerous” bacteria have not been affected in a negative way, although the most threatening bacterium, which can cause severe skin infections, has been eradicated by this form of disinfection. Chances are there can be invented a new disinfectant based on citric acid made possible by this information. We would like to continue this project next year.

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