How Well Do Household Disinfectants Kill E. coli Bacteria?

Kalivas, Rhea (School: Pocatello High School)

I did research last year for my school science class testing out how well different cleaners you bought from the store, actually killed E.coli bacteria as advertised. I found the one that worked the best contained triclosan which is now banned by the FDA. As a result, this year I wanted to expand upon that and see how well common household cleaners such as rubbing alcohol and hydrogen peroxide compared to the name brand cleaners. I mixed agar, poured my plates, swabbed them with an isolated strain of E.coli bacteria, put on sterile dots of paper dipped in my different cleaners, and measured my zones of inhibition. I used 5 of the cleaners I used for my class research last year and also used 5 common cleaners that most people have in their home and are easily accessible to the public; iodine, ammonia, 91% isopropyl rubbing alcohol, bleach, and hydrogen peroxide. I predicted the bleach would kill everything and it did, it had the largest zone of inhibition on every plate. Hydrogen peroxide also worked really well. Ammonia did nothing and some of the name brand cleaners actually work better. My statistical analyses support these observations. My future research will be to test the effects of different cleaners on bacteria with different cell wall structures.

Awards Won: