



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

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Project Title What's Hiding on Your Kitchen Countertop?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To determine which household cleaners effectively disinfect kitchen countertops contaminated with raw ground beef.</p> <p>Methods/Materials I contaminated a kitchen countertop surface with raw ground beef and then cleaned/disinfected the surface with three commonly used household cleaners. Following the cleaning I swabbed the now clean surface with a sterile applicator and applied it to a LB agar plate to screen for the presence of E. Coli bacteria.</p> <p>Materials</p> <ol style="list-style-type: none">1 lb. of raw Ground BeefLatex glovesSterile Dacron # tipped applicatorsPlastic storage bagsMasking tapeNutrient agar plates (containing Tryptone, yeast, and sodium chloride)Three cleaners; Lysol Kitchen Cleaner, Clorox Clean- Up Cleaner, and Orange Plus Cleaner2 ply paper towels <p>Results I discovered cleaning solutions that contained bleach disinfected E. Coli from contaminated countertops better than cleaning solutions without bleach. This was evident by the fact that no bacterial growth was observed on agar plates that had been exposed to swabs of a countertop disinfected with Clorox Clean- Up Bleach.</p> <p>Conclusions/Discussion In my Observations and Data I had pretty consistent results. The Chlorox Cleaner was the most effective cleaner. The Lysol Kitchen Cleaner provided the second best disinfectant properties. I observed some to moderate bacterial growth in the Lysol Kitchen Cleaner. In contrast, the Orange Plus Cleaner appeared to provide no disinfectant properties. For example there was moderate to severe growth following 24 hour, 48 hour, and 60 hour time periods. In fact, the bacterial growth found in the Orange Plus Cleaner looked similar to the growth observed on the positive control plate which received no cleaning at all. Also as expected I observed no bacterial growth on the negative control plate.</p>	
Summary Statement To determine which household cleaners effectively disinfect kitchen countertops contaminated with raw ground beef.	
Help Received My Pops supplied the agar plates and sterile swabs.	