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Materials and Methods

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**Bacteria Gathered in a Heavily Populated Area vs. in a Lightly Populated Area**

Before the experiment was conducted, four agar plates (one mannitol salt agar and three nutrient rich agar) were divided and labelled (with a permanent marker) A, B, C, with C being the control. Twelve sterile cotton swabs were also obtained in order to take bacteria from each place. Bacteria was obtained on a sterile cotton swab (one for each time the experiment was performed for a total of twelve swabs) from three different places in order to see how much bacteria grows on each place. The three places bacteria were gathered from were: an 18-year-old female’s unwashed palms (which serves as the control), the same female’s palm washed (with soap and water for 30 seconds) before running her hand along a heavily populated and used stairwell railing, and the same female’s palm washed (with soap and water for 30 seconds) before running her hand along the same heavily populated and used stairwell (not the railing everyone uses, the railing no one’s hands touch). The period of time between the hand being washed and rubbing it on the railing was about thirty seconds, or enough time for the female to make it from the classroom (G8) to the stairwell in front of Chichester Science Building. This process was repeated 4 times. Each time bacteria were obtained on the cotton swab, it was run through the agar using the stoke technique. Once the swab with bacteria was run through each agar plate, the lid was put onto the plate so a low amount of outside bacteria was prevented from attaching and growing on the plate. After all the bacteria had been collected, initials were written on each plate and the plates were stacked and taped on two sides so the plates would not move around. The plates were placed in incubation for one week. After incubation, the bacteria on the plates were measured by the percentage of area covered and the size and shape of the bacteria (flat, raised, irregular, and circular). The two main ways this experiment is connected to Maxine Burton’s experiment about the effect of hand washing with water or soap on bacterial contamination of hands, are in that both look at the effect of hand washing and both experiments used railings and human hands in order to obtain their data.

Reference:

Burton, M., Cobb, E., Donachie, P., Judah, G., & Curtis, V. (2011, January). The Effect of Hand washing with Water or Soap on Bacterial Contamination of Hands. Retrieved September 12, 2016.