

Damien Ruybal & Brady Copeland
Junior Division Environmental Sciences
Fruit: The Greener Cleaner

The “green movement” is sweeping the nation, and a logical part of this would be the development of more environmentally friendly all-purpose cleaners. The purpose of this experiment was to see which fruit would prevent the most bacteria growth. The hypothesis of the experiment was that the lemon would prevent the most bacteria growth. First, rub the slice of ham on the cutting board, so that the whole cutting board gets ham residue on it, then let the cutting board sit in a sterile setting for 24 hours. After 24 hours, cut out a piece of one of the fruits with the knife. Then wash the knife and dry it, so that the knife no longer has that fruit juice on it and do this with all of the fruits. Then squeeze one of the fruits so that enough juice for a swab goes into an individual beaker. Do this with all of the fruits, making sure not to mix any of the juices. Next, with a permanent marker, divide the cutting board into 11 squares labeling one of the squares “Control” and label each of the remaining squares with a fruit. You should have all of the fruits labeled on the cutting board. With a sterile swab, swab one of the fruit juices and swab it onto the labeled fruit square. Let this sit for 15 minutes. Then, swab the square with a sterile swab and streak the swab onto the agar plate in a zigzag form. Do this from right to left and top to bottom. Then, put the lid back on the agar plate and tape it shut. Next, repeat procedure 9 and 10 with the rest of the labeled squares. Put the lid on the agar plate and then seal it shut with Petri dish tape. Next, label the agar plate with the type of corresponding fruit. Place the agar plates upside down in the incubator and let them set for 24 hours at a degree of 37 degrees Celsius. After 24 hours, remove the agar plates and place them in a sterile setting. Next, with latex gloves on, observe and record the number of colonies on a pre-made chart. Finally, repeat steps 17 and 18 with the remaining agar plates and repeat steps 13 and 15-19 for two more days. Through all three days the lemon did not grow any colonies of bacteria. It is false because although it did not grow any colonies, 5 other fruits also did not grow any colonies. The orange, apple, grape, pineapple, and cranberry were the fruits that did not grow any colonies. Only the banana, grapefruit, lime, pomegranate, and the control grew bacteria. The experiment could be changed by adding vegetables to the experiment and testing these as well.