Testing Oral Antiseptics

Materials:
- Coffee Filter or filter paper
- One sterile nutrient agar plate
- Hole punch
- Sterile cotton swab
- Four samples of oral antiseptics
- Forceps
- Permanent marker
- 10% chlorox solution

Discussion: the use of oral antiseptics (mouthwashes) has increased in popularity the past few years. The question most often asked by students of microbiology is, “how effective are they?” The following exercise is not intended to provide conclusive evidence of the effectiveness of various antiseptics, but it will provide a reasonable means for testing their “germicidal” qualities.

Procedure:
1. Obtain a sterile plate of nutrient agar. With the marker, divide the bottom of the agar plate into 4 parts and number them 1-4.
2. Using a sterile cotton swab, thoroughly swab the gumline of one group member’s mouth. Do not use a group member who was recently ill.
3. Thoroughly streak the surface of the agar plate with the saturated cotton swab, rolling it and being sure the entire surface is covered. Go in one direction, turn the plate, and go at a 90 degree angle and streak again, then one more 90 degree turn.
4. Dip the swab in the chlorox solution and throw it in the trash.
5. Punch out 4 discs from the filter paper.
6. Using forceps that have been flamed, saturate a disk in the #1 antiseptic to be tested. Place this disk in the section labeled #1. Flame the forceps before proceeding to the next antiseptic.
7. Follow the same procedure for the next 2 samples.
8. Place a disk which has not been saturated in anything on the plate in the #4 spot as the control. Put the lid on your petri dish and turn it upside down.
9. Put your initials and the date on the back of the dish and place in the incubator for 48 hours.

After incubation, the surface of the plate will be covered with bacterial growth. A clear circle (ring of inhibition) will appear around the disks that contained an antiseptic that inhibits bacterial growth. On the chart below, rank the antiseptics according to the size of the ring of inhibition. The larger the ring, the more effective the antiseptic. Compare your results to 2 other groups.