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|  | **February 23, 1999**  1.) Went through the WARD'S biology catalog so we could order our materials.  2.) Called in our order  1 Bacillus cereus (living culture)  2 Tryptic Soy Agar (Premeasured Dehydrated Packs)  1 100 X 20 mm Petri Dished (set of 20)  **February 25, 1999**  1.) Receive WARD'S supplies  **February 26, 1999**  1.) Collected remaining materials and tools  2.) Mixed a 25% bleach solution with tap water and wiped down counter-top  3.) Tried to use the sterilizer to clean mortar and pestle, glass stirring rod, graduated cylinder and beakers; the sterilizer took a great deal of time to understand; the instructions on the door of the sterilizer are not very explicit  4.) Set up the hot plate and created/prepared the agar; calculated the water/agar proportion  1 dish = .73g agar and 16.6 water  watch the temperature of the agar, once it begins to boil, the agar solution will rise (turn the temperature down, but let a slight rolling boil persist); make sure that you let the agar boil for at least 5 minutes or powder will still be undissolved  5.) Pour the agar into 10 dishes; after some experimentation, we learned to hold the lid at a 45 degrees angle to prevent air contamination  6.) Once the agar solidifies (5-10 minutes), we turned the dishes upside-down to prevent condensation from dripping onto the agar  7.) Placed the 10 agar dishes in the refrigerator and left them over the weekend  **March 1, 1999**  1.) Took the dishes out of the refrigerator  2.) Set up Bunsen Burner and flamed wire loop until red hot as well as the neck of the Bacillus cereus test tube.  3.) Swabbed the bacteria onto all 10 petri dishes using the streak-plate method and placed in 30 degree autoclave overnight  4.) Crushed shallots using mortar and pestle; before using mortar and pestle, though, one should cut them into small chunks; shallots are like a cross between garlic and onions. It peels and is in cloves like garlic, but makes your eyes water like onions.  5.) After crushing, we put a large square of Tin foil on the countertop and transferred the shallots to the cheesecloth.  6.) Wrapping the cheesecloth tightly, we squeezed the juice onto the tin foil; this is very difficult/painful; we plan to buy a large quantity of shallots because theyíre not all that ìjuicyî  7.) Made a new set of agar dishes and placed them in the refrigerator  **March 2, 1999**  1.) Obtained juices from: garlic, onion, chives, leeks; chives are the worst to squeeze...they are practically dry! The leeks: we only used the white stalk, not the root or the green leaves  2.) Put bacteria on Trial #2 dishes  3.) Designed a labeling method  Concentration: A=100%, B=75%, C=50%  Trial #(substance)  G=garlic O=onion C=chives S=shallots L=leeks  4.) Soaked discs (example: Garlic 100%, 75%, 50%); we used 500uL for each well  100% = 500uL juice  75% = 375uL juice + 125uL water  50% = 250uL juice + 250uL water  5.) Start soaking discs:  shallots 4:02  garlic 4:18  leek 4:24  onion 4:52  chive 5:14  500uL is too much, next time weíll use 100uL instead  100% = 100uL juice  75% = 75uL juice + 25uL water  50% = 50uL juice + 50uL water  6.) Put the soaked discs onto bacteria dishes after theyíve soaked for 15-20 minutes  7.) Put the dishes (Trial #1 and 2) into the autoclave overnight  **March 3, 1999**  1.) Measured Trial #1's diameter of the zone of inhibition  Trial #1  onion ABC none  chive ABC none  leek ABC none  shallot ABC none  garlic A 16mm  B 13mm  C 14mm  Trial #2  onion ABC none  chive ABC none  leek ABC none  shallot A 9mm  B 7  C none  garlic A 22mm  B 17mm  C 17mm  Trial #3  onion ABC none  chive ABC none  leek ABC none  shallot ABC none  garlic ABC none  2.) Prepare agar dishes with bacteria lawn for trial 4, 5, 6  **March 4, 1999**  1.) Measure zone of inhibition  Trial #4  onion ABC none  chive ABC none  leek ABC none  shallot ABC none  garlic A 11.8mm  B 9.4mm  C 7mm  Trial #5  onion ABC none  chive ABC none  leek ABC none  shallot A 7  B none  C none  garlic A 11mm  B 7mm  C 8mm  Trial #6  onion ABC none  chive ABC none  leek ABC none  shallot ABC none  garlic A 9.5mm  B 7.1mm  C 7.1mm  2.) Prepare more juice from all 5 substances  3.) Poured bleach on used agar plates and put them in the autoclave overnight to clean them  **March 5, 1999**  1.) Continued to prepare juice  2.) Poured bleach out of old petri dishes and cleaned out disintegrated agar  3.) Make more agar solution (20 dishes)  4.) Put on bacteria lawn  5.) Soaked the chromatography paper discs in substances and placed on petri dishes  **March 8, 1999**  1.) Collected data  Trial #7  onion A 8mm  B none  C 8mm  chive ABC none  leek ABC none  shallot A 14mm  B 10mm  C 10mm  garlic A 30mm  B 27mm  C 28mm  Trial #8  onion A 9mm  B 7.5mm  C 7.8mm  chive ABC none  leek A none  B none  C 7.8mm  shallot A 10.5mm  B 10mm  C 8mm  garlic A 24mm  B 22mm  C 22mm  Trial #9  onion A 8.1mm  B 8mm  C 6.9mm  chive A 9mm  B none  C 6.9mm  leek A 10.1mm  B 1mm  C 8mm  shallot A 9.5mm  B 9.8mm  C 8mm  garlic A 33.5mm  B 23.5mm  C 23mm  Trial #10  onion ABC none  chive ABC none  leek ABC none  shallot A 24mm  B 22mm  C 21.5mm  garlic A 14.3mm  B 8mm  C 9mm  Since we had left these dishes over the weekend, we had more ìsignificantî results. Possibly, we can do a ìtime factorî test later. Weíve never gotten results from chives, but that may be because it didnít have enough time to fight back. Also, many have had a white, cloudy ring. This, too, may be a result to the over-the-weekend incubation  2.) Took pictures  **March 9, 999**  1.) Clean dishes with bleach  2.) Get rid of waster with a bio-hazard bag  3.) Put finishing touches with pictures  4.) Write ìabstract and last of the science fair paper work |

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