



CALIFORNIA STATE SCIENCE FAIR 2008 PROJECT SUMMARY

Name(s) Anujin Dambaev; Vanessa Resley	Project Number J1408
Project Title War of the Worlds	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals One of the goals for our project was to discover the effects of the centripetal force on bacterial colonies. We wanted to determine whether or not bacteria grown under the centripetal force will become inhibited in colony numbers. We also wanted to discover bacteria's ability to adapt when placed under other forces.</p> <p>Methods/Materials We tested our hypothesis when we received permission to work at a college laboratory and receive access to E. coli and bacillus cultures. We used the following materials: 24 nutrient agar plates, 24 sterile inoculation loops, access to bacterial cultures, 1 turntable (able to reach 78 RPM), 1 spotlight, and 2 CeliuS thermometers. We set the turntable at 78 RPM and taped the experimental plates onto the turntable and placed a CeliuS thermometer to the side (this is to maintain the optimum bacterial temperature. The controls were placed to the side and positioned the spotlight towards the plates. We practiced basic bacterial streaking methods and made sure that the area and the materials were sterile.</p> <p>Results The purpose of conducting this experiment was to distinguish whether or not E. coli's and bacillus's culture growth rates would become inhibited under another force. According to the test results, the longer the incubation time period given to the experimental bacteria, the faster the colony growth rate. The experimental 48 hour time period resulted in larger colony numbers than the regular controls for 48 hours. Although the experimental 24 hour time period displayed a sudden decrease in the colony numbers. By doubling the incubation time, the bacteria colonies allowed enough time to adapt to the centripetal force that is acting onto the colonies.</p> <p>Conclusions/Discussion In conclusion, the effects of centripetal force is clearly visible for a longer incubation time period. The experimental 48 hour time period allowed the bacteria to adapt to the new force acting upon it. In this case, the centripetal force caused some bacterial colonies to die off therefore leaving the stronger colonies to pass its genes to the next generation. These stronger genes would continuously advance future bacterial generations causing the cycle of acquired bacterial resistance. Therefore bacteria's ability to adapt will allow colonies to survive under other forces and other environments.</p>	
Summary Statement Our project is about the effects of the centripetal force of E. coli and bacillus bacterial colonies.	
Help Received Ms. Jennifer Pickens at Mountain San Jacinto College allowed the use of materials and laboratory; Mr. Harry Post (Physical science teacher) guided us through the project; Mr. and Mrs. Dambaev purchased materials and provided transportation; Mr. Resley provided transportation	