CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
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Project Number
J1313

Project Title
Wash Your Hands

Abstract

Objectives/Goals
The OBJECTIVE of this Project is to determine the effectiveness of a conscientious Hand Washing Program in preventing the spread of pathogens in the workplace.

Methods/Materials
The METHODS for this Project had been very precise. The three Control Groups, composed of volunteers, had been defined for this Project. The members of Group I did not wash their hands after leaving the restroom. The members of Group II washed their hands with soap and water before leaving the restroom. The members of Group III washed their hands with soap and water before leaving the restroom. In addition, they washed their hands with soap and water at the Hand Wash Station. After washing their hands with soap and water, each member also applied an alcohol based sanitizing lotion to their hands, that air dried. This Station had been located in the hallway leading into the Main Work Production Area.

Hydrated sponges had been utilized to take surface samples from the hands of each volunteer. These samples had been tested for a Total Plate Count. This test determines the presence of all forms of pathogens in the samples. The second experiment is the Generic E-Coli Test. This test determines the presence of all types of Escherichia coli in the samples. The third experiment determines the presence of Staphylococcus aureus in the samples.

LIST OF MATERIALS: 40 Dehydrated sponges; 40 25ml bottles of Buffered Peptone Water; 40 Stomacher Plastic Bags; 40 Plastic Media Plates with clear Covers; 40 Biochrome Staph Aureus Media Plates with clear Covers; 40 Plastic Disposable Syringes for the Micro-Pipette; 40 Vials of Purple Media [TPC]; 40 Vials of Yellow Media [CEC]; 40 Micro-Pipette disposable collection tips.

Results
The RESULTS of these experiments had shown the pathogen growth levels from the samples taken from the surface of the hands, of the members of each of these Control Groups.

Conclusions/Discussion
A review of the RESULTS of these experiments had lead to the CONCLUSION that a systematic program of hand washing will significantly reduce the spread of pathogens in the work place.

Summary Statement
This Project proves that a systematic program of hand washing, with water, soap, and sanitizing lotion, will significantly reduce the spread of pathogens.

Help Received
My father helped me type the project report and build the display board. I used the equipment and materials available at the quality analysis laboratory, at the Brawley Beef Plant, under the guidance of Mr. Armando Ramirez. The human subjects were volunteers, employed at the Brawley Beef Plant.