



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Taya S. Crayk-Bonde	Project Number J0807
Project Title Which Microorganism Works Best in Bioremediation, Bacteria or Mold?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals THIS EXPERIMENT STUDIED THE QUESTION OF WHICH MICROORGANISM, MOLD OR BACTERIA WOULD DO BETTER IN THE BIOREMEDIATION PROCESS, BY REDUCING, ELIMINATING OR CONTAINING CONTAMINANTS SUCH AS OIL IN AN OIL SPILL.</p> <p>Methods/Materials FIRST, AN AGAR WAS MADE TO GROW BACTERIA ON BY MIXING KNOX GELATINE WITH A SOUP BOULLION CUBE AND WATER AND BRINGING THEM TO A BOIL. THIS MIXTURE WAS Poured INTO STERILE PETRI DISHES AND ALLOWED TO SET INTO A GEL. A SALIVA SAMPLE WAS TAKEN FROM MY PET CAT AND PLACED ON THE MEDIUM FOR THE BACTERIA TO GROW ON. THE BACTERIA WAS GROWN FOR 10 DAYS. THEN, MOLD (PENICILLIUM) WAS GROWN BY PUTTING LEMON WEDGES, DUST AND WATER INTO SEALED BAGGIES AND PLACING THEM INTO A SEALED CONTAINER FOR 10 DAYS. THE MOLD AND THE BACTERIA WERE THEN HARVESTED TO BE PLACED INTO 6 READIED "SIMULATED OIL SPILLS". THERE WAS TWO CONTAINERS THAT WERE AGITATED 3 TIMES A DAY - THEY WERE (LIKE THE WAVES), THERE WERE TWO CONTAINERS THAT WERE STILL - (LIKE A LAKE), AND THERE WERE TWO THAT HAD SAND AND WERE (LIKE A BEACH). NUTRIENT FERTILIZER WAS ADDED TO SPEED UP THE PROCESS. THE RESULTS WERE DOCUMENTED DAILY OVER A 10 DAY PERIOD, AND PHOTOGRAPHS WERE TAKEN.</p> <p>Results THE THREE CONTAINERS THAT HAD MOLD INTRODUCED DID NOT SEEM TO HAVE ANY EFFECT ON ELIMINATING, REDUCING OR DEGRADING THE "SIMULATED OIL SPILLS". THE CONTAINER WITH BACTERIA AND THE AGITATED WATER - (LIKE THE WAVES), ALSO HAD NO APPARENT CHANGES OTHER THAN COLOR. THE CONTAINER THAT HAD BACTERIA INTRODUCED THAT WAS THE STILL WATER - (LIKE A LAKE), HAD A MODERATE AMOUNT OF DEGRADATION OF OIL, MORE THAN 1/2. ALSO THE SAND AND WATER - (LIKE A BEACH), HAD THE MOST REDUCTION OF OIL, ALMOST 3/4.</p> <p>Conclusions/Discussion I CONCLUDED THAT THE BACTERIA WAS A MORE EFFECTIVE MICROORGANISM IN BIOREMEDIATION THAN THE MOLD IN THIS EXPERIMENT.</p>	
Summary Statement THIS EXPERIMENT IS ABOUT FINDING OUT WHICH MICROORGANISM IS BETTER IN BIOREMEDIATION - BACTERIA OR MOLD?	
Help Received MY MOTHER TOOK THE PHOTOGRAPHS OF ME.	