



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> Anna D. de la Rosa	<b>Project Number</b>  35946
<b>Project Title</b> <b>Red Hot Fungi Fighters: Effect of Capsaicin Extracted from Kashmiri Chili Peppers on Growth of Aspergillus flavus</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My objective is to determine the effect of capsaicin extracted from Kashmiri chili peppers on the growth of Aspergillus flavus. I hypothesized that higher capsaicin concentration would result in greater inhibition of fungal growth.</p> <p><b>Methods/Materials</b> The effect of capsaicin on growth of A. flavus was determined by using different concentrations of capsaicin. Acetone was used to extract capsaicin from dried Kashmiri chili peppers. The oily residue was then dissolved in varying amounts of vegetable oil to produce different concentrations of capsaicin solution. Agar plates were swabbed with the different concentrations of capsaicin solution. At the center of each plates was placed a 1 x 1 x 0.2 cm block containing the A. flavus. The plates were incubated between 24-28 degrees Celsius and the area of growth was measured daily for 5 days.</p> <p><b>Results</b> After 5 days, agar plates swabbed with the highest capsaicin solution showed no signs of growth while the agar plates swabbed with the lowest concentration showed minimal growth. The agar plates swabbed only with vegetable oil (control) showed the most growth. Results of ANOVA test on data show that there was a statistically significant difference between the treatments of various concentrations of capsaicin solutions and control.</p> <p><b>Conclusions/Discussion</b> My results support my hypothesis that capsaicin extracted from chili peppers can inhibit the growth of A. flavus and is most effective in higher concentrations. This experiment shows that a spice can have other beneficial uses beyond adding flavor to one's food.</p>	
<b>Summary Statement</b> The project studied the effectivity of capsaicin extracted from Kashmiri chili peppers in controlling the growth of A. flavus which is a known plant pest.	
<b>Help Received</b> Parents assisted in purchasing materials used for the project. Science teacher and advisor provided equipment and guidance on procedures.	