



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> <b>Stephanie K. Bonilla-Sotelo</b>	<b>Project Number</b> <b>S1705</b>
<b>Project Title</b> <b>Lycopene in Watermelon: The Effects on the Daphnia's Heart Rate</b>	
<b>Objectives/Goals</b> To prove lycopene's claim effects are true and compare difference effects with different percentage concentrations by testing it on the Daphnia Magna's Heart.	
<b>Abstract</b> <b>Methods/Materials</b> Collect 5ml of watermelon tissue from the desired area, and blend into a slushy state. Then extract Lycopene using an organic chemistry distillation set. Afterwards dilute it into wanted percentage concentrations solutions with the distilled water. Have the daphnia magna ready on stand by and using a pipette place one on a microscope glass slide. Next use another pipette to add one drop of the selected solutions on the daphnia. Let it sit for 1-2 minute and then observe it under a microscope. Timing one minute count its heart beats and look for any body reactions. Materials: Organic seedless Watermelon, spoons, containers, Organic chemistry distillation kit tape, marker, data sheet, camera (pictures), plastic wrap, dropper blender 100uL micropipettor 20-125 screw tap tubes distilled water bunsen burner ethanol (95%) daphnia magna small containers Microscope pipettes, glass slides	
<b>Results</b> After testing the different levels of lycopene the overall results matched up to the claims. The daphnia (bpm) decreased with a higher level of lycopene and if it was from the ring area of the watermelon. When compared the overall different concentration average with the lycopene extracted from the center was 101.55 bmp to 72.31bpm from the ring. Both groups display similar physical reactions and changes. Sometimes the level of lycopene was so intense that it would give the daphnia alike heart attack and then die suddenly.	
<b>Conclusions/Discussion</b> Lycopene being a powerful antioxidant and a natural carotenoid pigment is beneficial enough to alter the heart rate. This carotenoid may prevent the oxygenation of low-density lipoproteins, from damaging the cells of the heart and arteries. Which in turns, allow for the heart to have less stress, function properly, and have a lower heart rate. Daily intake levels of lycopene is good due to it being one of the most effective antioxidants and is suggested to prevent production of cancer cells and the buildup of fatty deposits in atheromas in arteries. The daphnia at rest was given watermelon extracted lycopene and an effected change was seen in its (bpm).	
<b>Summary Statement</b> To prove lycopene's claim effects are true and compare difference effects with different percentage concentrations by testing it to the Daphnia Magna's Heart Rate.	
<b>Help Received</b> Friends and Family support, Mrs. Del la Cruz guidance and suggestions.	