



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> <b>Taylor M. Pannell</b>	<b>Project Number</b> <b>J2210</b>
<b>Project Title</b> <b>Got Carrots? Does Adding Carrot to the Water Affect Hatching Rates of Triops longicaudatus?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> For many living creatures, conditions have to be just right for hatching. I investigated hatching conditions for <i>Triops longicaudatus</i>, namely whether placing plant matter (carrot) in spring water with <i>Triops</i> eggs would improve hatching rates. It was suggested in the literature that adding a slice of carrot would be beneficial. Of 3 groups, one with carrot slivers, one with turnip slivers (as a root vegetable similar to carrot), and one with no additive, it was predicted that the carrot group would produce the highest hatching rate.</p> <p><b>Methods/Materials</b> 30 <i>Triops</i> eggs each were placed in three glass fish bowls containing 450 ml of Arrowhead spring water warmed to the temperature of 78 degrees Fahrenheit by desk lamps. One bowl contained 5 carrot shavings; the second bowl contained 5 turnip shavings; with the third receiving nothing. My prediction was that more larvae would hatch in the bowl with carrot. Four separate 24-hour trials were conducted.</p> <p><b>Results</b> In four 24-hour trials, the bowls with plain spring water yielded the most larvae (averaging 4), with carrot coming in second (2.5), and turnip yielding the very least (1), therefore failing to support my hypothesis.</p> <p><b>Conclusions/Discussion</b> Perhaps too much matter was added or the temperature was kept too high, negating any positive effect of the nutrients of the carrot (if any truly exist). My results can possibly be explained by osmotic inhibition, wherein hatching is suppressed because of high mineral and organic content in the water; indicating a hostile environment for survival and reproduction; such as an old pool about to dry up instead of a fresh new pool with few predators.</p>	
<b>Summary Statement</b> Does Adding Carrot to the Water Affect Hatching Rates of <i>Triops longicaudatus</i> ?	
<b>Help Received</b> dad helped with photography, mother helped trim and affix items to project board	