



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> <b>Raziel Lizaraga</b>	<b>Project Number</b> <b>S1314</b>
<b>Project Title</b> <b>Synergetic Effect of Gibberellic Acid and Indoleacetic Acid on Ulothrix subtilissima</b>	
<b>Objectives/Goals</b> The purpose of this project is to find out the interaction the plant hormones gibberellic acid and indoleacetic acid on the algae Ulothrix subtilissima.	
<b>Abstract</b> <b>Methods/Materials</b> The procedure included the preparation of 4 sets of test tubes. The first set consisted of 5 tubes as a control containing the alga and culture medium (soil and salt water). The second set consisted of 15 tubes containing increasing doses of GA , culture medium and the alga. The third set of 20 tubes containing increasing doses of IAA, culture meium and the alga. The fourth set of 25 tubes containing a combination of GA nad IAA at different doses. The experimental set-up included the placement of the culture tubes on a shaker for incubation under light filtered by water (to absorb the heat) during 90 days. For the first 15 days the absorbance was read every other day to check for photosynthetic activity. At the end of the 90 day period, one microliter from each tube was analyzed under the microcope and the cells counted.	
<b>Results</b> The number of cells observed in the samples in which GA was used, increased in direct proportion with the amount of hormone being used. The same results were observed for IAA. A synergetic effect was also observed but the number of cells did not increased proportionally with the amounts of hormones being used.	
<b>Conclusions/Discussion</b> It can be concluded that the amount of gibberellic acid and indoleacetic acid produce an increment of cells in a direct proportion to the amount of hormone being used. It was also noted that there is a synergetic effect on the number of cells; however; the relationship was not direct. An optimum amount of both hormones is necessary to produce a synergetic effect. That amount was observed to be an intermediate between the maximum needed for individual peak performance in each hormone. It was also observed that although Ulothrix sublissima is a unicellular algae, it is found organized in filaments. The addition of GA produced longer filaments while the addition of IAA produced shorter filaments in larger quantities	
<b>Summary Statement</b> This project is about the synergetic effect of the plant hormones gibberellic acid and indoleacetic acid in the algae Ulothrix subtilissima.	
<b>Help Received</b> Central Union High School Science Department provided the laboratory facilities. Parent supplied the needed materials. Central Union High School District sponsored the trip to San Diego to participate in GSDSEF.	