



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Dallas S. Peters	Project Number J1624
Project Title The Effects of Fructose Enhanced Ocean Water on Rice Plant Growth	
Abstract Objectives/Goals My objective in this project is to try to find plants that can sustain alternative means of irrigation other than fresh water. My goal was to find an element that would counteract the salinity of ocean water as an irrigant for food bearing plants. Methods/Materials Collect water from Morro Bay. Soak one thousand rice seeds in water for 48 hours to start germination. Plant 250 seeds in potting soil of four separate planters. Use container of pure drinking water and fructose as control sample and repeat this process for the other planters containing the different levels of diluted ocean water and fructose. Test and record the three different salinity levels of samples with hydrometer and Aquachek pool and spa strips. Irrigate the control planter twice daily with pure drinking water and fructose and repeat this process for the other planters containing the different levels of diluted ocean water and fructose. Count and record the height growth of the control, 1/4, 1/2, and the 3/4 containers of rice plants irrigated with those diluted levels of ocean water. Results The results of my investigation on the effects of fructose enhanced ocean water on the growth of rice plants reveals that water samples containing 15.2 ppt (parts per thousand) the 1/4 diluted sample, had very little negative affect on the plants growth when compared to year 1 and the control sample. The test sample irrigated with the water containing 28 ppt the 3/4 diluted sample had damaged the growth of the rice seeds. Conclusions/Discussion My investigation showed that the control sample had a height growth of 8 inches. This compared to the plants watered with diluted water with the highest salinity level of 28 ppt the three fourths, had a height growth of 4.5 inches compared to last years three fourths, of 3.25 inches. The plant being watered with the salinity levels of 15.2 ppt was not noticeably affected, in contrast to the three fourths sample. The height growth of 6 inches for the whole time period. The next sample of half ocean water, half pure water, and fructose was affected more than the 1/4 planter with a difference of 5.25 inches as a height growth. The last sample had the most negative affect while it still had a height growth of 4.25 inches during the eleven day time period of growing these hardy plants. Salinity has a negative affect on the rice plants, fructose can overcome some of the negative affect.	
Summary Statement The tolerance growth levels of rice plants, irrigated with fructose enhanced ocean water.	
Help Received Mother helped with transportation, Information from Mike Hillhouse at Koda Farms, Rice seeds from James E. Hill, an extension Agronomist from UC Davis.	