



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Jonathan P. Enns	Project Number S1705
Project Title Marvelous Mycorrhizal Fungi	
Abstract Objectives/Goals The objective of this project was to determine if adding mycorrhizal fungi to the irrigation water as wheat seed is planted would stimulate root growth, enabling a young wheat seedling plant to extract more water, fertilizer and nutrients from the soil, resulting in a healthier, more vigorous plant. Methods/Materials Wheat seed was planted in twenty 1/2 gallon containers of sandy loam soil. A powdered inoculum consisting of a blend of spores of four endomycorrhizal fungi species was mixed with water and applied to ten of the containers, while the other ten containers received only untreated water. The containers were placed under plant grow lamps, operated with a timer to simulate normal daylight hours. A mixture of water and fertilizer was added as needed, to preserve soil moisture during the ten-week period after planting. The containers were then soaked with water to soften the soil and the soil was rinsed from the plant roots. The plant weights were recorded using a digital gram scale. Results The average weight of the ten plants that received the fungi treatment was .92 gram, or 48% greater than the .62 gram average weight of the plants that did not receive the treatment. Conclusions/Discussion The results illustrated that the application of the mycorrhizal fungi increased overall plant health and vigor as hypothesized. Further experiments, including tissue analyses, would be useful in determining plant health and the potential impact on yields.	
Summary Statement The objective of this project is to determine if adding mycorrhizal fungi to the irrigation water as wheat seed is planted will stimulate root growth, resulting in a healthier, more vigorous plant.	
Help Received Vernon Crawford, Wilbur-Ellis Company in Shafter, suggested evaluating the effect of applying mycorrhizal fungi to seedling plants. Dr. Greg Cluff, professor of agricultural science at Bakersfield College, offered suggestions for sample sizes and fertilization requirements.	