



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Addison D. Williams	Project Number J1123
Project Title The Effects of Microwave Radiation on Radish Seeds and Dry Yeast	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective is to determine the effect microwave radiation has on radish seeds and dry yeast. Microwaving the seeds and the yeast before they are planted, will slow their growth rate once the seeds are planted and the yeast is grown.</p> <p>Methods/Materials 30 French Breakfast radish seeds were planted in a clay pot of fertilized soil. The next group of seeds were first microwaved on a damp paper towel for 5, 15 and 30 seconds and then planted like the control group. Six tests were done for each group. They were placed outside in the sunlight, watered daily and checked for growth. The dry yeast was microwaved in the same way, with one non-microwaved control group, and allowed to grow/proof for ten min. after being mixed with warm water and sugar. Dry yeast was then microwaved for 5, 15 and 30 seconds and allowed to grow. The growth was measured after the yeast proofed for 10 minutes.</p> <p>Results Microwaving the radish seeds and the dry yeast prior to being planted and grown did not slow their growth rate but instead helped them grow taller. The seeds microwaved for 30 seconds grew the tallest. The non-microwaved seeds did grow, but at a slower rate, and were not the tallest. The yeast microwaved for 5 seconds before it was combined with warm tap water and sugar, grew the most in height after 10 minutes.</p> <p>Conclusions/Discussion The radish seeds and the dry yeast were not effected by the microwave radiation. Microwaving the seeds and the yeast first did not stunt their growth process. Although the non-microwaved seeds and the yeast grew, they grew at a slower rate. The microwave radiation had no negative, noticeable effects on the two organisms tested. This experiment shows that both the seeds and the yeast were not damaged after being exposed to microwave radiation. Additional tests on radish seeds and dry yeast microwaved for a longer period of time may show a different result.</p>	
Summary Statement Microwave radiation will effect the growth rate of radish seeds and dry yeast.	
Help Received My mom helped me type the reports on the board and supplied the materials needed.	