



# CALIFORNIA STATE SCIENCE FAIR

## 2011 PROJECT SUMMARY

Name(s) <b>Andrew D. Manion</b>	Project Number <b>J1919</b>
<b>Project Title</b> <b>Does the pH of Soils Affect the Growth of Baby Butterhead Lettuce?</b>	
<b>Objectives/Goals</b> My goal was to find out which of four soils, each with a different pH level, was best for germinating baby butterhead lettuce for my garden. My hypothesis is that the Miracle Gro Seed Starter Potting Mix will provide the best results as its pH level is at the research suggested level of 6.5.	<b>Abstract</b> The pH level of four different soils was tested with the Rapitest Soil Test Kit. The soils were Miracle Gro Seed Starter Potting Mix, Miracle Gro Potting Mix, OSH Premium Potting Mix, and dirt from my backyard. The Planter's Pride Grower Starter Kit was divided into four sections. A different soil was placed into each section. Three Renee's Garden: Garden Babies Butterhead Lettuce seeds were planted into each seed pot for a total of 72 seeds for each soil with a total of 288 seeds planted. The seed pots were placed outdoors in the same spot everyday and put into the garage at night. The seeds grew for 28 days.
<b>Methods/Materials</b> The pH level of four different soils was tested with the Rapitest Soil Test Kit. The soils were Miracle Gro Seed Starter Potting Mix, Miracle Gro Potting Mix, OSH Premium Potting Mix, and dirt from my backyard. The Planter's Pride Grower Starter Kit was divided into four sections. A different soil was placed into each section. Three Renee's Garden: Garden Babies Butterhead Lettuce seeds were planted into each seed pot for a total of 72 seeds for each soil with a total of 288 seeds planted. The seed pots were placed outdoors in the same spot everyday and put into the garage at night. The seeds grew for 28 days.	<b>Results</b> The OSH Premium Potting Mix, pH level 6.0, had 14 of 72 seeds sprout, the average height of the sprouts was 4.35 cm, the tallest was 5.9 cm, and the shortest was 2.3 cm. The Miracle Gro Seed Starter Potting Mix, pH level 6.5, had 14 of 72 seeds sprout, the average height was 3.43 cm, the tallest was 5.1 cm, and the shortest was 1.5 cm. The Miracle Gro Potting Mix, pH level 6.5-7.0, had 12 of 72 seeds sprout, the average height was 3.64 cm, the tallest was 5.1 cm, and the shortest was 1.5 cm. The dirt from my backyard, pH level 7.0, had 15 of 72 seeds sprout, the average height was 3.61 cm, the tallest was 5.7 cm, and the shortest was 2.2 cm. The OSH soil provided the best results with an average height 0.71 cm taller than the others, as well as the tallest sprout and the tallest shortest sprout.
<b>Conclusions/Discussion</b> After 28 days of letting the seedlings grow in four different soils with four pH levels, I have come to the conclusion that OSH Premium Potting Mix (pH level 6.0) is the best of the soils I tested for germinating Renee's Garden baby butterhead lettuce seeds. I have also concluded that soil from my backyard (pH level 7.0) is another good option. This test did not support my hypothesis. The research I found was also not supported. I think this means that repeated testing and/or further testing for longer growth periods might show different results.	
<b>Summary Statement</b> If germinating Renee's Garden baby butterhead lettuce seeds for your garden, OSH Premium Potting Mix (pH level 6.0) provides the best results of the soils I tested.	
<b>Help Received</b> Mother added pH testing capsule contents to the soil sample, edited the report and helped assemble the display.	