The Effect of Acid on Lemon Balm

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Abstract

We have studied the effects of acid rain on lemon balm. Lemon balm is used for many things and very helpful for us. Acid rain effects many places, not just in the U.S. We learned that acid rain is a major worldwide problem causing deforestation in the northern U.S. By researching deforestation information and the cause of acid rain, we got our question "what effects would it have against a different type of plant?" Our hypothesis was that the plants we would water with a pH level of 5, would dry and turn yellow fast. The pH 5 is around the level of real acid rain. Therefore, our testing would be very close to the real thing. We did this study for two weeks having two lemon balms watered three times a week with the pH 5, and one plant would be watered normally for the two weeks as well.

Introduction

Acid rain is very common worldwide and is a problem for the environment. It causes acidification in lakes and streams and damages trees at high elevations. Also, acid rain is responsible for the decay of buildings, sculptures and statues. The main cause for this is sulfur dioxide (SO_2), Many ions are released into the atmosphere due to emissions. When it is exposed to the atmosphere, it reacts with water from sulfuric acid, a component of acid deposition and 'precipitates' in different parts of the world. Seeing that this a problem world wide not just in one certain place in the world. We will be testing a level of Ph5 on two lemon balm plants, and see if this is an actual problem as they have done studies for.

Materials and Methods:

We'll be using Lemon balms and watering them with 250 ml of a pH level of 5. We will be using that method with two lemon balms. Our two Lemon Balms will be watered with distilled water. We watered them every week on Monday, Wednesday, and Thursday. We kept that routine for watering them for two weeks, and in those two weeks we were suprised. We measured the height of the herbs and watched the difference in the colors, and the amount of leaves change.

Results and Analysis

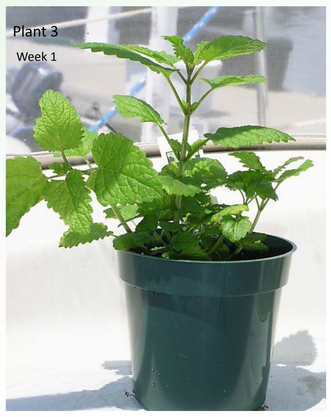
At the end of the two weeks we had gone to collect the last of our data. The results that we were expecting were not the ones that we ended up with. The 2 plants we had been watering with the Ph 5 were sprouting more leaves, but as we had expecting the older leaves had started drying at the tips. As for the lemon balm that we had watered with normal water didn't have much of a difference. The only result that we had received from that plant was the leaves had started to turn a more dark green, but there were no changes in the height of the plant. The height in the other two plants had changed one had gone up with the height measuring 8 inches showing that it had grown 2 inches. The other plant had actually shrank about 3 inches, but had sprouted more leaves.

Conclusion

After testing our lemon balms for two weeks, our results came a little unexpected. The two that we watered with pH 5 acids, have a few brown leaves and is still growing. Acid seemed to not have a huge effect on the lemon balms. Maybe it didn't die completely because it was only two weeks of testing. We predicted that the acid would have a huge effect, but the fact that the two lemon balms continue to sprout more leaves is surprising.

The lemon balm that was being watered normally was perfectly healthy. It grew about half an inch or more. The leaves were green and it smelled like mint. Our results were just as we expected.

Acid rain has been a problem for many years and in this project we found that the process of actually killing a plant takes a while. We watered the lemon balms three times a week but in reality, it can rain anytime. In conclusion, with our research we found that this acidity level did not effect the plant as we had predicting.



Resources:

- http://www.centrorisorse.org/acid-rain-and-deforestation.html
- http://www.webmd.com/vitamins-supplements/ingredientmono-437-LEMON%20BALM.aspx?activeIngredientId=437&activeIngredientName=LEMON%20BALM