

Experimental design assignment

[Design](#)



The household product that we used was 5% ammonia. Ammonia is a chemical compound composed of nitrogen and hydrogen, with a formula of NH_3 . Nitrogen is one of the main ingredients commercial agriculture, industrial manufacturing, and household cleaning products. It can be used to clean floors, rugs, tubs, silver, ovens, and crystal. However, after using the ammonia as a cleaning agent, it is washed away with water, flowing into the sewer system and into the environment, where it can affect other living organisms.

According to ammonia concentration determines differential growth of ammonia-oxidizing arches and bacteria in soil microcosms, the proportion of ammonia into soil will affect the ecological niches for plants. After a certain proportion of ammonia to soil, the ammonia will create an environment where it is difficult for any plant to grow. Thus, the purpose of this experiment is to determine the concentration of ammonia at which the niche for plants to grow. Hypothesis Ammonia proportion of egg of soil to 30 ml of ammonia would not destroy the land's niche.

There will be no difference between the control group and the group with 30 ml of ammonia. Methodology: In order to test the null hypothesis, first we measurements of soil in a beaker without any ammonia and equally divided the soil into 3 plant containers. In each plant container 5 seeds were added. This group was labeled as our control group. Then, 10 ml of ammonia was added to another beaker of egg soil and it was again equally divided into 3 other plant containers. Each of these containers was filled with 5 seeds as well.

This second group was labeled as our 1% concentration group. The labeled as 2%, 3%, and 4% concentration respectively. For this whole process, we had 15 different containers in total. After 14 days, the results were collected. First, grown plants from each plant container in the control group were cut its base, measured and weighted. Then the mean of the heights and weights was calculated for this group. The same process was repeated consequently for 1%, 2% 3% and 4% labeled grouped concentration. Results Figure 1 Figure 1 shows the mean of the mean for each group.

From the control group to 10 ml of ammonia, there was a 998% decrease in the weigh of plants and 100% decrease in the growth of plants from 10 ml to 20 ml. There was no grew in the plants after 20 ml. Figure 2 Figure 2 shows the weights of plants in each group. There was a 680% decrease in the weight of the plants from the control to 10 ml of ammonia and 100% decrease from 10 ml to 20 ml. After 10 ml of ammonia, there was no more growth in plants. Discussion In this experiment, there was no growth after 10 ml of ammonia.

Since we made the incineration too high it was difficult to test our null hypothesis using the t-test analysis. Our results clearly show that any proportion of egg of soil to more than 10 ml of ammonia will be very harmful to the niche for plants. In the future, proportions of egg of soil to 1 ml-10 ml of ammonia could be used to test to see the correct niche of ammonia for plants, as we've seen in this experiment that small amount ammonia could be helpful for farmers. Given the results from our experiment, the usage of household ammonia does affect our environment.

Same result will be true for other household antibacterial or detergent products which might be beneficial to us in some cases but are very harmful to the overall environment. The government should regulate the excessive misuse of these environmental contaminates so that we all will be protected from a long term negative effects of environmental changes.