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*Nitrogen-based Fertilizers on Phaseolus Vulgaris*

The project "Element 7" is a test designed specifically to test the effectiveness of different nitrogen-based fertilizers. The organism being grown was *Phaseolus vulgaris*, or common bean. The test conditions were not changed throughout the experiment and all factors in plant growth (i.e. water, sunlight) were kept under control; water was kept at 20 mL/day and sunlight was supplied in 12 hour rotations by a growth light.

The growth of the plants was recorded by measuring the height of the plant at the moment of fertilization and taking further measurements and subtracting the initial height measurement. The fertilizers were measured by the analysis of nitrogen by percent. The largest amount of nitrogen was found in the fertilizer 46-0-0 which contained 46 percent nitrogen. The other form of fertilizer used contained only 32 percent nitrogen, hence 32-0-0. The growth of these organisms was compared to a control plant which was simply unfertilized to give it a distinctive property.

A rejected hypothesis and an alternate theory can be concluded from the experiment. It was predicted that the fertilizer with the largest amount of nitrogen would prove superior while the experiment shows that the fertilizer with the second largest amount of nitrogen was dominant. Based on the growth ratios, it can be concluded that the fertilized 32-0-0 plants had the dominate supplement addition.