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| ***Introduction:***  My family drinks coffee every morning, because it gives them energy and "wakes them up". I drink coffee at least once a day, and I am really amazed how much energy this wonderful drink gives me. Of course, I understand that if I will take too much, it will have negative effect on me. But until then�I enjoy a cup of coffee, so I can go to school cheerful and full of energy.  "*Caffeine was discovered in 1820. It is an alkaloid and belongs to the methylxanthines group. Caffeine is found in guarana, kola nuts, coffee, tea, cocoa beans, mate and other plants. Caffeine is the most popular drug on the globe. It is a power and energy accelerant for human body. It is a powerful stimulant to the Central Nervous System"1.*  If you think about it, caffeine affects different people in many different ways. For example � many people think that it is not good for kids. Maybe because they are growing organisms and they need healthy diet? And caffeine doesn�t carry a supply of certain vitamins. People start drinking coffee from one cup a day in the morning and then in a few months they are already addicted to it, and can�t function properly without taking it. The described above things are very common points of view of most of the people. Why do we know so little about the effect of coffee on other living organisms? Scientists are doing experiments, discover things, publish them � but if to ask an average person about the effect of caffeine on animals and plants � not many of them would be able to answer this question. Animals, plants, fish, mushrooms, plankton and so on? Isn�t it interesting to know what affect can caffeine cause on different creatures, if have an effect at all. Let�s take for example plants. Caffeine is not an essential nutrient, so we would think that it wouldn�t influence plants at all. But caffeine is not an essential nutrient for humans either, but still, it has huge effect on human metabolism system. So, why not to make an experiment and know for sure if caffeine is influencing plants or not. Let�s say that we�ve decided to make an experiment. The first step than will be to make a good search on "caffeine" and "plants" topics, as well as "caffeine and plants" together. All the information that could be found may be interesting and useful for the experiment that I am going to make.  "*The caffeine is not just a stimulant, but it reaches deep into the muscle cell to provide lasting power and delaying the onset of muscle fatigue. Caffeine affects CNS (Central Nervous System) causing more alertness and allowing for more intense focus. The chemical structure of caffeine is very similar to that of adenine (a component of ATP, DNA, and cyclic AMP). Only the substituents are different. This helps explain caffeine�s stimulating effects. Because of the structural similarities, caffeine can slip right into adenosine receptors, keeping cyclic AMP active rather than it being broken down. When cyclic AMP breaks down, the body�s energy supply decreases. Because caffeine fools the body into using enzymes to break it down, the cyclic AMP supply remains higher for longer. Nobody really needs caffeine, but if all of America were stop drinking coffee or caffeine-containing soft drinks/beverages, productivity would fall by 70%. So, for more alertness and mental/physical boost a little caffeine can be used safely. Also � deficiency is not an associated problem with caffeine because it is not an essential nutrient"*2.  If a molecule of caffeine is similar to the one of adenine, then it is a very important factor for us to know because if caffeine will help plants to grow (which will be my hypothesis) then we will know that one of the factors that helps it to grow is that caffeine will provide enough adenine-similar molecules in the plant that can be used by the plant so the plant wouldn�t have to look for adenine if it needs some, it will just use the given caffeine molecules to take a good care of its DNA and ATP.  "*Caffeine increases the level of circulating fatty acids. This has been shown to increase the oxidation of these fuels, hence enhancing fat oxidation. Caffeine has been used for years by runners and endurance people to enhance fatty acid metabolism. It's particularly effective in those who are not habitual users"*.3  Certainly plants are not use to take caffeine solution instead of regular water that can be found in the soil (for example - grasses, trees, bushes � all take water from the soil, unless it is a specially grown plant that is being watered with some special solution). Caffeine would be something new if to introduce it to plants. The webpage that is above quotation is taken from says that caffeine is particularly effective in those who are not habitual users. Plants are not "habitual users". Would it be right to assume that the caffeine solution is going to effect plants stronger if they would be watered with tap water and then suddenly with caffeine solution? That would be an appropriate thing because if I was to start watering the seeds, that I have just planted, with a caffeine solution, then if they won�t grow, I will not know if it�s the caffeine solution that I am watering them with or something else. Therefore, it is better to water them with tap water first, and then when they will grow I can water them with caffeine solutions and by collecting data every week, I will see what comes out of the experiment � whether plants will grow and have obvious variations from concentration to concentration, or they will not vary at all. The controlled plants will be kept being watered with a regular water, so the collected results can be compared with one another : no-caffeine solution with different %-ages of caffeine concentrations.  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