Exploring the Impact of PFAS on Phaseolus vulgaris and Cucurbita pepo in Vegetable Gardens

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How do PFAS chemicals impact chlorophyll in the process of photosynthesis? PFAS chemicals, or polyfluorinated substances, are commonly found in things such as tents, cookware, and waterproof products. In this project, the effects of PFAS chemicals on Phaseolus vulgaris (beans) and Cucurbita pepo (zucchini) leaves were researched and tested. To do this, the researcher grew beans and zucchini plants. In total, there were 32 plants tested. Then, for five days, the researcher watered half of the plants with regular tap water and the other half with PFAS chemical-infused water. After the five days ended, the leaves were tested to see the amount of chlorophyll produced. From the data collected, it was concluded that the effects of PFAS chemicals depend on the plant but can still cause damage. The results show that Phaseolus vulgaris had 4.67% lower chlorophyll when watered with the PFAS-infused water. However, the Cucurbita pepo had 37.5% more chlorophyll when watered with the PFAS-infused water. This shows that PFAS does affect the overall chlorophyll concentration, which is vital to plant growth and crop production. We also believe that crop yield and crop health could be affected in vegetable gardens. Chlorophyll is a key element in the overall growth and crop yield of a plant. It is imperative that chlorophyll production isn't inhibited in any way.