

How constant photosynthesis affects plant growth

Azelya Nadya, Kaitlyn Sia, Sarah Chan, Megan Tan

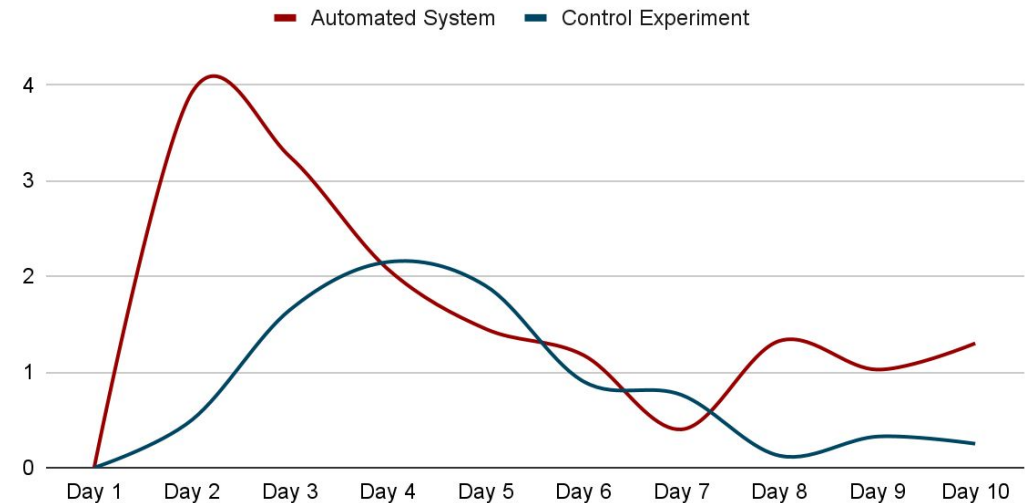
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Engineering Problem & Project Objectives

Home-grown organic plants are high-maintenance as they require excessive care while store-bought organic plants are more expensive than typical vegetation. Our objective for this project is to make use of smart home technology, consisting of the use of a smart plug, to activate a water pump so that the plants can be watered at a scheduled timing (activated at 7:00 AM once every two days). LED lights will be activated from 10 PM to 2 AM every day by a programmed smart plug. This allows the plants to receive constant light and continue to photosynthesise and grow at night.

Data & Results

Average Height Growth in Plants (Average of 2 Rounds of experiments)



Project Design



Interpretation & Conclusion

Compared to an ordinary organic garden which, even with extensive care, takes a month to several months to grow, an automated system with constant light exposure and consistent watering allows the plants to grow faster in a matter of a few days. The automated watering system enables the plants to be watered at consistent times and would prevent careless maintenance. Thus, it can be seen that the increased rate of photosynthesis of the plants in the automated system allowed them to grow faster and healthier when compared to ordinary plants.