Examining Produce Yield of Capsicum annuum in Compost Enriched Soil While Tracking Household Waste Reduction

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This project's purpose was to measure how much the addition of compost in soil would affect the growth of Capsicum annuum. Compost boosts plant growth by adding vital nutrients to soil. Composting also reduces household waste which will lower the amount of trash sent to landfills. Ten seedlings of Capsicum annuum were planted into two containers filled with the same type of potting soil; one set of plants had compost added to the soil while the other did not. For a twenty-two-week growing period, the height of the plants and the number of peppers growing was recorded weekly. When the peppers were ripe, as denoted by a color change from green to red, they were harvested, weighed, and measured. The hypothesis that the Capsicum annuum planted in compost enriched soil would have boosted plant growth defined by plant height and produce yield was supported. The average height of plants in composted soil was 45.2 cm, whereas plants in regular soil measured 34.7 cm at week 12 (p-value=1.3E-17). The total number of peppers harvested in composted soil was 75 peppers whereas 14 peppers were harvested in regular soil (p-value=1.3E-2). Data was proven to be statistically significant with p-values less than 0.05 which supports the hypothesis. Total waste reduction averaged 20 L per week in a 3 month composting season yielding 240 L equating to five 13-gallon trash bags a year for a three-person household. This experiment emphasizes the environmental benefits of composting by reducing waste while also improving food production.

Awards Won: