G. mellonella, T. molitor, Z. morio, Larvae Waste Products from Polystyrene Biodegradation Used as Fertilizer for Tropaeolum Plant

Marquez, Lourdes (School: John B. Alexander High School)

Non-biodegradable products such as Styrofoam can be extremely dangerous to the environment. Certain types of larvae are able to consume plastics, such as Styrofoam. I decided to alter the Styrofoam by adding different kinds of mixtures of fruits and oatmeal in order to increase the rate of consumption by the larvae. In the previous study, results showed that the T. molitor larvae consumption increased with the altered Styrofoam. The purpose of this year's study was to compare the Styrofoam consumption between the G. mellonella, Z. morio, and T. molitor larvae and analyze the results by measuring the mass of the styrofoam and larvae feces. I tested three different groups of larvae for 30 days. The larvae rapidly consumed the styrofoam and each species displayed slightly varied masses which proved that they have the ability to consume the manipulated foam. After 15 days of consumption, CO2 levels were also tested using Vernier probes, and the feces was gathered and used as a fertilizer for the Nasturtium plant. The height, number of leaves and overall appearance of the plants were tested every three days. My hypothesis that the mealworms would do the best, and help the plant growth by using its feces as fertilizer was disproven, instead, the Z. morio had the best results because their consumption performance was greater than the other groups and maintained the plant healthy. Overall, the use of larvae to help the environment to eliminate the styrofoam problem was proven to be effective.

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