CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY

Name(s)

Akshaya Ganesan

Project Number

J2205

Project Title

Feeding Earthworms (Eisenia fetida): Do Different Diets Affect the Nutrient Levels of the Vermicompost?

Abstract

Objectives/Goals

The purpose of this project is to find a good diet for the farmers' friends, the best composting worms, the red wigglers or red worms-Eisenia fetida. Vermicomposting plays a major role in organic farming. The big question is what is the significance of the different diets of earthworms on the nutrient levels of their vermicompost?

Methods/Materials

The red wigglers in the experiment were fed with three different foods-fruits and vegetables (FV), tea filters (TF), and leaf litters (LL) and the major nutrients of the soil were tested and compared to control-soil with no compost (C). The worms were raised following the guidelines of Cupertino City Services and the compost was tested for pH, Nitrate (N), Phosphorus (P), and Potassium (K) using a soil testing kit.

Results

Results showed that the pH was alkaline (FV-7.5, LL-6.2, and TF-7) in all the different diets compared to the acidic pH of the control (C-5). The worms fed with fruits and vegetables showed the highest level of nitrate and phosphorus while the highest level of potassium was in the leaf litters bin. The bins with fruits and vegetables and the leaf litters had a higher level of NPK compared to the tea filters. The control had very low or no NPK at all.

Conclusions/Discussion

The results prove that vermicomposting had increased NPK considerably. Evidently, the experiment shows that different diets do affect the nutrient levels of the vermicompost. By doing this experiment I learned about vermiculture and the best diets for red wigglers. This is my first step in growing my own garden and I#m planning to continue my research using compost in my vegetable garden with the motto, #I GROW MY FOOD.# My conclusion is, if everyone has a compost bin at home and follow #I GROW MY FOOD# method, we can recycle the kitchen wastes effectively, trust the organic food we eat and lead a happy and healthy life.

Summary Statement

Vermicompost, a promising alternate for chemical fertilizers - the first step towards Akshaya's organic garden "I GROW MY FOOD"

Help Received

My mom and dad for the moral support and encouragement.