

THE SECRET OF COFFEE

an organic fertilizer and pesticide



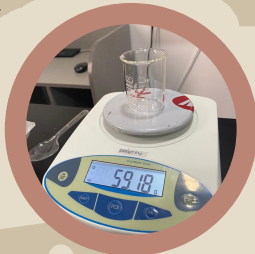
1

We began the experiment by determining the beaker's mass



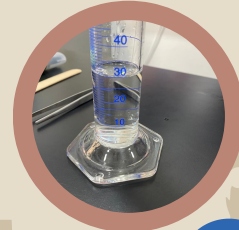
2

We filled four cups with an equal amount of soil after measuring how much was needed for the experiment



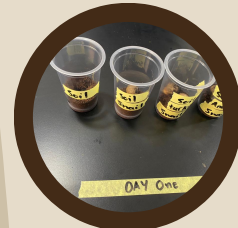
3

After that, we measured grams of Turkish and American coffee into the beaker respectively



4

Next, we blended the water and coffee in the measuring cylinder after adding 30 ml of water to it



6

We also measured the pH of the water and American coffee mixture, which came out to be 5.2, and the pH of water, which was 7.

5

Then, we measured the pH of the water and Turkish coffee mixture, and the result was 6



7

After that, we filled the four cups of soil with the seeds.



8

Next, we filled two cups with water and the remaining two with Turkish and American coffee.

9

Finally, we put the snails into three coffee glasses and one water cup.



INTRODUCTION

Due to different natural and human causes, the petroleum infrastructure is frequently subject to disasters and environmental contingencies along the different stages of the petroleum lifecycle and its derivatives. Bioremediation is used to reduce the environmental impacts, to detoxify the contaminants in different environments by using microorganisms, plants, etc, or with strategic composting systems or enzymatic treatments. The use of agro-industrial wastes such as coffee husk could be a solution to diminish the hydrocarbons.

Coffee production includes first postharvest processing that helps to separate the seed from the remaining parts of the fruit to ensure the final product quality. Coffee husk is the main residue obtained during drying. For every ton of coffee harvested, 0.18 tons of coffee husk are produced.

These by-products pose an environmental threat to coffee producing countries, as they pollute surrounding water due to their high caffeine content. However, due to their composition, numerous applications have also been suggested. Both coffee husk and pulp have been used as organic soil amendments. by-products improved the soil's increased its organic carbon and nitrogen and water retention capacity.

They have also been used for composting or vermicomposting. The second processing step is coffee roasting, which is very important not only for the formation of specific compounds responsible for the organoleptic properties of coffee beverage but also because some of these compounds have a deep effect on the use of spent coffee grounds as a soil amendment.

Finally, coffee can be brewed following different techniques such as decoction, infusion or pressure. Spent coffee grounds (SCG) are the main by-product obtained during coffee brewing.

They are mainly produced in coffee shops, restaurants, households and during the industrial production of instant coffee. Instant coffee-derived residues usually present a poorer concentration of chemicals due to a more extensive extraction process. Worldwide, approximately 15 million tons of SCG are produced each year.

KEYWORDS

coffee, soil, slugs, snail, PH, fertilizer, experiment, pesticides. mixture.



ABSTRACT

Worldwide, an estimated 400 billion to 1 trillion cups of coffee are consumed annually. Regardless of the exact figure, the substantial amount of coffee consumed results in a significant volume of spent coffee grounds. Utilizing these grounds in the garden not only diverts them from the waste stream but also offers gardeners an alternative for nurturing plants and addressing slug issues. Coffee grounds can be an effective deterrent for slugs and snails in gardening, as they can cause problems for plants. Some experts recommend using them to help combat these pests. Slugs harm radishes by feeding on leaves, stems, and roots, causing irregular holes and stunted growth. This damage reduces yield and makes plants more prone to diseases. Protective measures like barriers or natural deterrents such as coffee grounds can prevent slug damage in the garden. We conducted an experiment to examine how various types of coffee influence the growth of radish seeds and their impact on snails. Coffee grounds contain a slug-toxic alkaloid, causing severe dehydration and deterring slugs from areas where the grounds are used, making it a helpful but not foolproof method for gardeners.

RESULTS

The experiment produced interesting results. In the American coffee and soil mixture, the slugs died first, followed by the Turkish coffee and soil mixture, while the slugs did not die in the water and soil mixture. Additionally, the reddish plant grew the longest in the American coffee and soil combination, followed by the Turkish coffee and soil combination, and the growth was not as good in the water and soil mixture. These findings show that American and Turkish coffee may have positive effects on plant growth when combined with soil.

