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Effect of Cinnamon and Banana Peel Extract on Abelmoschous esculentus.

Kanchan Awasthi [1]*, Anshika Yadav[2], Neeraj Jain[3] ,
Madhu Prakash Srivastava[4]
Kanchanawasthi1702@gmail.com
Maharishi University of Information Technology.

Abstract
Natural plant extracts are environment friendly alternative to synthetic plant growth regulators and phytohormones. Some plant extracts are very useful and help in promoting the growth of plant.
Cinnamon is known mainly as spice and used in every house for fragrance and its antibacterial quality. Its effect on plant is nice because of its qualities there is no attack of pests on plant parts. Cinnamon is a good rooting agent , as it has a natural antibacterial, antimicrobial agent that works as a fungicide..
Banana is a fruit of very old times and it can be grown every where. Ripe and unripe fruits are very useful for fertilizer as it is nutritious. Banana peel extract has potassium and it stimulates the growth of plant.
In banana peel Calcium is found which promotes the root growth and helps to add oxygen to the soil.
Both are natural growth stimulators and are powerful agents for plants and can be used as bio fertilizers.It is important to note that effectiveness of these extracts can vary from plant to plant by concentration and environmental conditions.
Keywords: Cinnamon, banana, extract, growth.

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I. Introduction

This article is about the effect of cinnamon and banana peel extract on Abelmoschous esculentus(ladyfinger plant). Cinnamon is the name for several species of trees and the commercial spice products that some of them produce. All are members of the genus Cinnamomum in the family Lauraceae. Only a few Cinnamomum species are grown commercially for spice. Cinnamon is just as effective when applied to a plant's stem when you plant the cutting. It can stimulate root development in just about every kind of plant that you grow in this fashion and you only have to apply it once. To use cinnamon as a rooting agent, simply dump a spoonful of cinnamon on a paper towel. Dampen the stem ends, then roll them into the paper towel. Plant your cuttings in potting soil. The cinnamon will encourage new growth and it will perform one other vital role.

Bananas are a very common fruit in the kitchen. The peels can provide our plants with vital nutrients apart from potassium, which it is known for. Banana extract is a natural plant-derived product that is commonly used in agriculture as a crop growth enhancer, stress reliever, and fertilizer supplement. It is made from the pulp of ripe bananas, which are high In nutrients, such as potassium, phosphorus, and nitrogen. These nutrients are essential for plant growth and development.In agriculture, banana extract is used as a natural and organic fertilizer supplement to provide essential nutrients to plants and improve soil health. Its high potassium content is important for plant growth, as potassium plays a critical role in photosynthesis, water transport, and stress prevention. Additionally, banana extract has been found to enhance plant growth and development, increase seed germination rates, and improve plant resistance to pests and diseases. Banana extract can be applied to plants through foliar sprays, soil drenches, and seed treatments. Banana peel is natural fertilizer that has been shown to have a positive impact on the growth and development of plants it is made by grinding up banana peels and soaking them in water for several days allowing the nutrients to seep into the liquid this liquid can then be used to water plants or sprayed directly on the leaves. One of the main benefits of banana peel extract is that it is rich in potassium as essential nutrient for plant growth potassium helps to regulate water balance in the plant making it more resilient to drought conditions.

II. Method and MaterialsMethod

The experiment was conducted in laboratory of botany of Maharishi University of Information Technology, Lucknow. To examine the effect of cinnamon extract and Banana peel extract on *Abelmoschous*

esculentus. 7 earthen pots were taken filled with garden soil, out of these 7 soil filled earthen pots 3 pots were taken for the experiment of cinnamon extract and rest 3 were for banana peel extract,1 earthen pot of soil was treated as control which was supplied with normal water in the whole experiment.

Material

The seeds of *Abelmoschous* esculentus(ladyfinger plant) were taken. In the experiment banana peel and cinnamon extract were used in amount of 20%,40%80%. For preparation of banana peel extract 6 peels of banana were taken, banana peels were kept in 1 litre of water for 2 days and after 2 days it was shaked well and the water was kept in bottle for further use. For making cinnamon extract 5gm of cinnamon bark and 1 litre water was taken for making the extract. Cinnamon was added in water and was boiled till water become half and after cooling it was kept in bottle for further use.5 seeds were sown in each pot all the seeds were germinated properly. After 2 weeks of plant germination the extract of banana and cinnamon were given in 20%40%80% doses.

III. Results and discussions

1-Effect of Banana peel extract on Abelmoschous esculentus(ladyfinger plant).

Banana is rich in potassium and calcium which helps in growth of plants. The sprouting was seen on 7th day in every pot and the extract was supplied in 20% 40% 80% concentration. There was clear difference seen in the growth of plants. The plants were increasing day by day very fastly compared to control and other extract in(cinnamon). Banana peel is good bio fertilizer and good rooting agent. In this experiment it was Observed that banana peel is very good bio fertilizer. The stems leaves height of plant was increased as compared to cinnamon and control. Because of the extract/ biofertilizer there was no attack of any type of outside agent on plant in any part so plants were with growth. With the use of biofertilizer the plants can be well grown with less cost as the bio fertilizers are nutritious, effective and chemical free.Fig.1**.**

Fig.1. Effect of banana peel extract on *Abelmoschous esculentus.*

2. Effect of cinnamon extract on Abelmoschous esculentus (ladyfinger plant)

Cinnamon is used as spice in the form of bark or as powder and it is good bio fertilizer. In this experiment cinnamon is used as a growth agent for the plant. The sprouting was seen on 7th day and the extract was provided every 2nd day in the concentration of 20% 40% and 80%. The growth was periodically measured and good as compared to control but not good as another extract(banana peel). Because of the extract there was no an effect of foreign agent which destroys the plant, the growth was increasing day by day. The stems and leaves were strong as compared to that of the control but less than banana peel extract. Cinnamon extract can be provided to plants for their better growth and yield as it is chemical free. Fig 2.

Fig.2. Effect of cinnamon extract on *Abelmoschous esculentus*

IV. Conclusion

The present study attributes towards the use of biofertilizers as good agents for plant growth. The biofertilizers are present in our houses only no need to go anywhere because the peels of any fruit or vegetables can be used as biofertilizer. We should not throw the peels in garbage just put them in pot and the biofertilizer is ready to use for soil and the results will be amazing. Banana is rich in potassium and calcium which is important for plant growth by using this biofertilizer you will clearly see the difference in growth of plants by giving synthetic fertilizers and by biofertilizers , in cinnamon anti- bacterial and anti-fungicide property is found which support root development of plant. Biofertilizers increase the soil fertility and promotes the growth of the plant so biofertilizers are better than chemical fertilizers.

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