



EFFECT OF BANANA PEEL LIQUID ORGANIC FERTILIZER ON GROWTH OF MUSTARD PLANTS

¹Dr. Sneha Rajendran

¹ Assistant Professor

¹ Department of Botany

¹ Government Degree College for Women (A), Begumpet, Hyderabad, Telangana, India

Abstract: The experiment was conducted to determine the effect of Banana peel liquid organic fertilizer on the growth of mustard plants. The mineral fertilizers applied to the soil, provide the plant nutrients but ultimately results in environmental pollution. Liquid organic fertilizers increase the soil fertility and enhances the plant growth and yield. There is no toxicity by using excess amount of Liquid fertilizer. Mustard plants showed more growth in soil supplemented with banana peel fermented water. This was observed by measuring growth parameters.

Key Words - Liquid organic fertilizers, Banana peel, Fermentation.

INTRODUCTION

The increase in population led to the demand for food all over the world. The primary source of income for more than 50 % of the Indian population is agriculture. The agricultural industry is presently, facing the challenge of increase in crop production using sustainable agricultural practices.

Fertilizers are any organic or chemically manufactured compounds applied to the soil to enhance the soil nutrients required for plant growth. Fertilizers generally contain phosphorus, nitrogen, potassium, and other micronutrients. Chemical fertilizers are generally in common use. The use of chemical fertilizers hampers the soil texture, brings about soil and water pollution. The present scenario has moved towards clean agricultural technologies or sustainable agriculture by reducing pollution and by using organic fertilizers instead of traditional fertilizers such as fertilizers and biological fertilizers. Organic fertilizers enhances increased food production. Currently, there is a tendency towards the use of low-cost renewable agricultural waste as a raw material in the production of valuation products to reduce waste, reduce land degradation, and increase agricultural output [1]. Organic fertilizers is used as an alternative to chemically synthesized fertilizers because of their effectiveness, their low cost, the awareness of adverse effects by use of chemical fertilizers.

Banana peel fertilizer is rich in potassium and magnesium. They contribute to stronger stem and plant root growth and improve nutrient distribution. Banana peel is a rich source of antioxidants, phenolic compounds, flavonoids, vitamin A as beta carotene, vitamin C, vitamin E and nutritional ingredients such as in dietary fiber, proteins, carbohydrates, essential amino acids, polyunsaturated fatty acids [2-7]. There are many ways to reuse banana peels as organic fertilizer. Therefore, the Liquid organic fertilizers are reliable and inexpensive instead of mineral fertilizers that have a great impact on polluting the environment.

MATERIALS AND METHODS

Banana peel liquid fertilizer: The banana peels are soaked in a bucket of water. The bucket is closed with a lid and the banana peels are allowed to ferment until they turn into liquid fertilizers. The bucket is kept aside for 2 days to allow the water to ferment. After 2-4 days, liquid fertilizer is transferred into another container. The liquid fertilizer is added to the soil and the plant growth is observed.

RESULTS AND DISCUSSION

From the table, the results are interpreted as follows. It is observed that liquid banana fertilizer enhances the plant growth compared to control. The growth parameters such Root length, Shoot length, Number of leaves, Length and width of leaves also showed enhanced growth. Similar studies of the effectiveness of liquid organic fertilizer made by banana peel as a potassium source is observed in eggplant (*Solanum melongena* L.) growth [8].

S.NO	Mustard	Root Length	Shoot Length	Number of leaves	Length of leaf	Width of leaf
1	Control (15thday)	2cm	4cm	3	1.2cm	1cm
2	Treated with Banana peel water (5 th day)	2cm	3cm	2	2cm	0.5cm
3	Treated with Banana peel water (10 th day)	2.5cm	4.5cm	4	2.3cm	1cm
4	Treated with Banana peel water (15 th day)	2.7cm	6cm	5	3cm	1.9cm

Table 1: Growth Parameters of Mustard plant



CONCLUSION

The study showed that the organic banana peel liquid fertilizers have the potential to enhance the growth in mustard plants. Application of organic liquid fertilizers showed the effect on growth parameters such as plant height, root length, number of leaves length and width of the leaves. Mustard plants showed more growth in soil supplemented with banana peel fermented water. Chemical fertilizers disturb the natural nutrient content of the soil, but liquid fertilizers enhance the nutrient content of the soil. In conclusion, the results revealed that application of organic liquid fertilizer such as Banana peel water enhanced the plant growth.

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