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Microbial Way to Revitalize Mulberry Garden

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Abstract

The mulberry (Morus spp.) plant is used in the medicinal, cosmetic, food, and beverage sectors mainly in sericulture because it is staple food crop for silkworms. Chemical fertilizers shouldn't be used in agricultural fields. Even if we first get a strong yield, it later has negative effects on the crop, such as polluting water basins, destroying microorganisms, and diminishing soil fertility. Hence, the use of bio fertilizer as an alternative to chemical fertilizer helps to boost yield without endangering crops. Bio fertilizers maintain the availability of these nutrients by fixing from atmosphere, chelating and releasing from the clay minerals so as to avoid conversion to non available from resulted in increase in the growth and yield of mulberry.

Keywords: Mulberry, Bio fertilizers,

Introduction

The genus Morus of the family Moraceae includes the exceptionally hardy and quickly growing perennial plant known as the mulberry. The mulberry leaf is only used to feed and care for silkworms, which are used to make silk yarn. According to estimates by Bombyx mori, mulberry silk accounts for 90% of all raw silk produced globally, and it is a very alluring economic activity, especially for rural residents. Mulberry leaves are utilised for a variety of different things in addition to being fed to silkworms. For instance, the mulberry fruit is becoming more and more valued as a valuable food due to its high nutritional content and great taste. Mulberry bark and wood can also be used to make paper and sports equipment. Silkworm (Bombyx mori L.) is a monophagous insect which feed only on mulberry leaves Morus spp. So good amount of mulberry leaves production means good food for silkworms and in turn silk yield will be better. By chemical fertilization soil health has been declining day by day so to combat this problem of soil health bio fertilizer application is one good approach to revitalize soil health. The bio fertilizer, which is made of biological

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wastes, is used to increase the soil's fertility. They are free of pesticides and help to enrich the soil by containing micro organisms, which produce organic nutrients and stop the spread of disease.

Azotobacterial Biofertilizer:

It is a bacterial preparation made from live Azotobacter cells and an appropriate carrier substance, like powdered lignite. By means of biological nitrogen fixation, it is able to provide nitrogen to the plants. Growing plants is improved. It increases the profitability of sericulture and serves as an efficient complement to chemical fertilizer.

V**esicular-Arbuscular Mycorrhiza:**

It is a symbiotic association between plant root and fungus. Inoculation of mulberry with certain mycorrhizal fungi is highly beneficial. Glomus mosseae and Glomus fasciculatum are such for example. Advantages conferred by this VAM are root pathogens can be minimized. It enhances the absorptive surface area of root systems greatly and nourish the plants through other micro-nutrients and phosphorus. It colonises the root of higher plants, especially under phosphorus deficient conditions. Certain useful fungus forms vesicles and arbuscules in host root cells.

Phosphate Solubilising Bio fertilizers:

Phosphorous is the second most important plant nutrient next to nitrogen. The availability of applied phosphates is only 15-20% due to its fixation in non available forms. Its availability can be increased by using phosphate solubilising microorganisms

SERIPHOS:

Phosphate solubilising micro organisms developed especially for mulberry cultivation. Advantages are phosphorus availability to plants, phosphorus use efficiency. Enhances root development. Increases leaf yield by 10-15% .Induces plant growth promoting substances. Improves soil fertility and productivity

Conclusion

Usage of bio fertilizers in mulberry confer lot many benefits as bio fertilizers are Eco-friendly, economical and easy to adopt, Only one inoculation is required then microbes will multiply in soil.