

"THE POSITIVE EFFECTS OF USING VERMICOMPOST ON THE GROWTH AND DEVELOPMENT OF CROPS"

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Abstract

Vermicompost, also known as vermicompost, is a product of the decomposition process using various worms such as red worms, white worms and other worms. It is usually produced by the decomposition of organic plant or food waste in combination with worm castings produced by red worms, white worms and other compost worms. Vermicompost is a nutrient-rich organic fertilizer that is beneficial for soil health and plant growth. It is a sustainable and environmentally friendly alternative to chemical fertilizers that improves soil fertility and increases crop yields. This article provides information on the positive effects of using vermicompost on crop growth and development.

Keywords: vermicompost, plants, organic matter, soil fertility, compost, plant diseases.

Introduction

Vermicompost, also known as worm casting or worm compost, is recognized for its positive effects on crop growth and development. The widespread use of agrochemicals in the cultivation and protection of crops has had a negative impact on soil health, productivity and the environment. In contrast, vermicomposting offers a sustainable alternative to combating these harmful effects and improving plant growth. Studies have shown that the use of vermicomposting improves soil health and helps plants grow. Organic amendments such as vermicompost are preferred over artificial fertilizers because of their ability to increase soil fertility and support sustainable plant growth.

MATERIALS AND METHODS

By incorporating vermicompost into their agricultural practices, farmers can reduce their reliance on chemical fertilizers and pesticides, resulting in healthier soil and crops. The beneficial effects of vermicompost on crop growth have been proven in various studies. Application of vermicompost has been shown to improve plant exomorphological traits such as root development, leaf growth and overall plant vigor. By enriching the soil with vermicompost, farmers can create an environment that supports optimal plant growth and development, resulting in higher yields and quality products. offers a number of benefits that contribute. By harnessing the power of vermicompost, farmers can improve soil health, promote plant growth, and mitigate the negative effects of traditional farming methods. Vermicompost is a valuable tool for sustainable agriculture, providing a natural and effective way to improve crop growth and development while maintaining





soil and environmental health.[6]

In the field of sustainable agriculture, vermicompost has emerged as a powerful ally for farmers seeking to improve the growth and development of their crops. Vermicompost, also known as worm casting or worm compost, is a nutrient-rich organic fertilizer produced through the process of vermicomposting, in which earthworms convert organic matter into a powerful soil amendment. The use of vermicompost provides many benefits that positively affect the health, yield and overall sustainability of crops. One of the main benefits of vermicompost is its ability to improve soil structure and fertility. The organic matter in vermicompost acts as a natural soil conditioner, increasing soil aeration, water retention and nutrient availability. This improved soil structure creates an optimal environment for root growth, allowing plants to obtain essential nutrients and water more efficiently.[5]

As a result, crops grown in vermicompost-enriched soil exhibit stronger root systems, increased resistance to environmental stressors, and improved overall growth. In addition, vermicompost is a rich source of important nutrients such as nitrogen, phosphorus, potassium, and trace elements. Unlike synthetic fertilizers, which can leach into waterways and harm the environment, vermicompost releases nutrients slowly and steadily, providing a sustainable source of nutrition for plants. Such a stable supply of nutrients promotes balanced growth, reduces the risk of nutrient deficiency and improves crop quality.[1]

RESULTS AND DISCUSSIONS

In addition to its role in improving soil fertility, vermicompost also contributes to disease suppression and pest control in agricultural systems. Beneficial microorganisms present in vermicompost help suppress harmful pathogens and pests, reducing plant disease and pest infestation. By supporting a healthy soil microbiome, vermicompost increases plant immunity and resilience, which reduces reliance on chemical pesticides and fungicides. In addition, using vermicompost is consistent with the principles of sustainability and environmental protection. By recycling organic waste through vermicomposting, farmers can reduce their carbon footprint, reduce waste generation and promote soil health and biodiversity.[2]

Vermicompost is a closed system where organic matter is recycled into the soil and creates a cycle of nutrient replenishment and renewal. Vermicompost improves soil structure, increases soil fertility and encourages beneficial microbial activity, which is healthy for plant growth. leads to soil. Vermicompost is a nutrient-rich organic fertilizer that provides plants with important nutrients such as nitrogen, phosphorus, potassium, and trace elements, and promotes healthy growth and development. The organic substances in vermicompost promote root development improves plant growth by stimulating, increasing nutrient uptake and increasing overall plant vigor. Vermicompost helps increase plant disease and pest resistance, reduces the need for chemical pesticides, and promotes sustainable agricultural practices. Using vermicompost reduces reliance on chemical fertilizers, reduces environmental pollution, and promotes environmentally friendly farming practices. Overall, vermicompost is a valuable resource that not only benefits crop growth and development, but also contributes to sustainable agriculture and environmental protection.[3]



CONCLUSION

In summary, the positive effects of vermicompost on crop growth and development are numerous. From improving soil fertility and structure to improving disease resistance and sustainability, vermicompost is a valuable tool for farmers seeking to grow environmentally sound, resilient crops. By harnessing the power of vermicompost, farmers can nurture thriving agricultural ecosystems that benefit both the land and the communities that depend on it.[4]

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