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Horticulture Charcoal - A Better Nutrient for Plant Growth

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INTRODUCTION

Charcoal is an odourless, tasteless, fine black powder, black porous solid of carbon. It obtained by removing water and other constitute form vegetative and other animal substance. It is organic material manufactured through a process known as pyrolysis. Charcoal is chemically and microbial stable product (Glaser *et al.*, 2002) It can use art, medicine, fuel, and as sowing media. It is very fine and pores with maximum surface area for water absorption. Now days horticulture charcoal not only used as plant nutrient but it use for micro propagation, plant tissue culture , embryogenesis, seed production, anther culture protoplast, culture, stem elongation, bulb production , for soil conservation (through mulching) etc. It play critical role in Orchid seed germination. Horticulture charcoal promote growth, alternation, absorption of ion and vitamin and minerals.

Uses of horticulture charcoal

Sowing medium

Horticulture charcoalimprove moisture drainage by its absorbent properties. Its porous capability help absorb excess moisture, which protect plant from overwatering , that's why now a days it can used with vermicompost and other sowing with different proportion for different vegetable seedling plant. It is acting as substrate, provide air pocket and helping root absorb as many nutrient and minerals from the soil. it helps keep oxygen within soil, with nourishing the plant.

Work as soil additive

Charcoal is highly resistant to microbial decomposition. Providing recalcitrant carbon to field soil charcoal surface has powerful absorption capacity that influence biological cycle and plant and soil. Horticultural charcoal has low density, and when added to the soil, it helps lighten heavy soils. This allows the plants' roots to grow better, which increases drainage and air circulation in the soil. By working the same way as lime to increase pH, horticultural charcoal increases minerals such as calcium, phosphorus, magnesium, and potassium. Charcoal is usually used as a soil conditioner rather than fertilizer and gives good plant response (Gathorne *et al*., 2009)

Effective for pesticide

Absorption qualities of horticulture charcoal with its non toxin nature neutilize the harmful effect of pesticide. It can use with water in 1 pound charcoal: 1 gallon water (1:1) proportion and treat and clean up the pesticide. It is one of the best uses of garden for pest control

For soil conservation

Horticulture charcoal prolong the life of soil by balancing pH levels 7.0 which means more alkaline than acidic. Mulching with black charcoal is effective for maintain soil moisture and soil conservation. It makes protective covering over the soil surface preventing moisture from escaping the soil.

Protection from diseases

Horticulture charcoal filter harmful is its ability to filter harmful microbes and toxin it prevent harmful fungal and bacterial. It is excellent absorbing impurities to keep your plant healthy and disease free. It is most important way to kill myco toxin that creates moulds.

Why Horticultural Charcoal is better than Chemical Fertilizers

Environmental Impact

Horticultural charcoal is generally safe and has no adverse effects on the environment. However, regular use of chemical fertilizers leads to excess release of nitrogen in the soil. Most of this nitrogen is then released into the atmosphere as carbon dioxide and nitrous oxide. This, in turn, causes the greenhouse effect and leads to global warming.

Pollution of Water Resources

The use of these fertilizers has detrimental effects on the water resources and the environment as a whole. Being highly soluble, the fertilizers leach away with groundwater or rainwater before the nutrients can benefit the crops. When this happens, dangerous chemicals like nitrogen and phosphorus affect the marine ecosystem leading to the death of fish and other aquatic life.

Effects on Micro-organisms

The microbes are replaced by other organisms that thrive in acidic environments, which may affect your crops. Continued use of chemical fertilizers leads to increased pests that cause diseases and affect crop growth leading to low yields.

CONCLUSION

Charcoal is a biochar beneficial to environmental and agriculture protection. It is beneficial for plant and soil and for its better absorption capacity and maintain the soil conservation through using of mulching method Horticultural charcoal. It reduced global warming and soil fertility because its soil natural insecticide and soil conditioner detoxification nature.

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