

A REVIEW ON EFFECT OF ORGANIC FARMING ON SOIL PROPERTIES

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Abstract

Common agricultural practices like excessive use of agro-chemicals, deep tillage and luxury irrigation have degraded soils, impure water resources and contaminated the atmosphere. There's increasing concern regarding reticulate environmental issues like soil degradation, geological process, erosion, and accelerated greenhouse effects and global climate change. The decline in organic matter content of the many soils is turning into a significant method of soil degradation. Soil organic matter the merchandise of on-site biological decomposition affects the chemical and physical properties of the soil and its overall health. Its composition and breakdown rate affect: the soil structure and porosity; the water infiltration rate and wetness holding capability of soils; the variety and biological activity of soil organisms; and plant nutrient handiness. several common agricultural practices, particularly tilling, disc-tillage and vegetation burning, accelerate the decomposition of soil organic matter and leave the soil prone to wind and water erosion.

Introduction

Soil Organic Matter Soil organic matter is arguably the foremost vital soil part, influencing soil structure, water-holding capability, soil stability, nutrient storage and turnover, and oxygen-holding capability, properties that are elementary in maintaining and up soil quality. A decline in organic matter content will increase the condition to eroding. Organic matter is especially vital because the prime surroundings for large numbers and sort of soil fauna and microflora, that play a essential role within the health and productivity of soils. It's extremely prone to changes in land use and management and to changes in soil temperature and wetness. Within the last decades of the 20 the century, changes in land use and management,

notably conversion of forest and piece of land to agriculture, have diode to a big decline in organic matter levels in some components of the globe.

Soil Organic Matter Formation

Soil organic matter consists of living plant, animal, and microbic biomass, dead roots and alternative plant residues in varied stages of decay, and soil humus. it's assumed that soil humus forms as a results of microbic activity however very little is thought regarding the precise mechanisms of humus formation.

Impact of Organic Farming on Soil texture

Soil organic matter tends to extend because the clay content will increase. This increase depends on two mechanisms. First, bonds between the surface of clay particles and organic matter retard the decomposition method. Second, soils with higher clay content increase the potential for combination formation. As an example, once angleworm casts and also the massive soil particles they contain are split by the joint action of many factors (climate, plant growth and alternative organisms), nutrients are discharged and created obtainable to alternative parts of soil micro-organisms.

Effect of Organic Farming on Soil Acidity and Salinity

Toxicity and extremes in soil pH scale (acid or alkaline) end in poor biomass production and, so in reduced additions of organic bear on the soil. as an example, pH scale affects humus formation in 2 ways: decomposition, and biomass production. Soil acidity conjointly influences the provision of plant nutrients and so regulates indirectly biomass production and also the obtainable food for soil collection. Fungi are less sensitive than bacterium to acid soil conditions. Impact on Soil wetness and Saturation Soil organic matter levels normally increase as mean annual precipitation will increase. Conditions of elevated levels of soil wetness end in larger biomass production, that provides a lot of residues, and so a lot of potential food for soil collection. Soil biological activity needs air and wetness.

Soil properties

Higher application rates of organic amendments resulted in lower bulk density compared with mineral plant food check and lower rates of organic amendments. Physical, chemical and biological properties of soil settle by the application of the organic amendments. Application of Farmyard manure ends up in higher pH scale. Lower convenience of plant nutrients in plots applied with organic amendments is predicted thanks to slower unhitch rates of organic materials, notably throughout initial years of transition to organic production. Organism activity utterly affected by applying organic amendments as a results of organism population decrease with higher application of harmful chemicals among the kind of fertilizers , pesticides and herbicides. Application of FYM, hyperbolic SOC, offered P and K in soil as facet for the reduction of bulk density. There was vital improvement in soil biological properties associated with nutrient sport moreover as soil dehydrogenase activity, that's associate indicator of soil biological health. An organic amendment helps to up C: N magnitude relation in soil thanks to higher organic carbon.

Long Term Effects of Soil Organic Matter on Soil Properties

Many effects, e.g. carbon sequestration within the soil and attainable build-up of venomous components, evolve slowly, thus it's necessary to visit long-run trials. Continual, application of exogenous organic touch cropland crystal rectifier to AN improvement in soil biological functions. as an example, microbic biomass carbon accumulated by up to 100 percent victimization high-rate compost treatments, and catalyst activity accumulated by half-hour with sludge addition. Durable application of organic amendments accumulated organic carbon by up to ninetieth versus unfertilized soil, and up to 100 percent versus chemical treatments. Regular addition of organic residues, notably the composted ones, accumulated soil physical fertility, chiefly by up combination stability and decreasing soil bulk density. The most effective agronomical performance of compost is commonly obtained with the best rates and frequency of applications. Moreover, applying these ways, there have been extra helpful effects like the slow unharnessed of gas chemical. Crop yield accumulated by up to 250% by long-run applications of high rates of municipal solid waste compost. Stabilized

organic amendments don't scale back the crop yield quality, however improve it Organic amendments play a positive role in temperature change mitigation by soil carbon sequestration, the dimensions of that relies on their kind, the rates and also the frequency of application. There's no tangible proof demonstrating negative impacts of significant metals applied to soil, notably once high-quality compost was used for long periods. continual application of composted materials enhances soil organic gas content by up to ninetieth, storing it for mineralization in future cropping seasons, typically while not causation nitrate activity to groundwater.

Organic Farming and microbial Population

Organic management considerably improved soil nutrient levels and accumulated microbial abundance and variety, particularly within the plastic tunnel, in comparison to standard farming. Differential microbial taxa analysis prompt that organic plastic tunnel cultivation-enriched various microorganism linkages associated with plant growth promotion and organic material turnover were completely correlative to a variety of soil nutrient parameters. Moreover, the microbial community composition was considerably correlative to the soil atmosphere, such as pH, EC, and nutrient-related properties (i.e., on the market N, on the market P, CEC, NO₃ --N).

Conclusion

Organic farming enhance soil physical, chemical and biological properties and additionally increase the merchandise quality .This embody property agriculture suggests that use of naturally on the market resources concernedly to future use. Deterioration of soil, water and atmosphere because of non considered use of harmful chemicals for accumulated yield impact human humanity directly or indirectly. In modern world, we centered on quality production to not increase amount and maintaining the ecological balance for property agriculture