



Soil Fertility and Its Importance

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Editorial

Soil fertility refers to a soil's ability to support agricultural plant growth, i.e., to provide plant habitat and produce high-quality yields over time. Soil fertility refers to the soil's ability to support plant growth and maximise crop yield. Organic and inorganic fertilisers to the soil can help with this. Nuclear techniques provide information that improves soil fertility and crop yield while reducing environmental impact. It refers to the soil's ability to support plant growth and maximise crop yield.

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Integrated soil fertility management seeks to boost crop production by increasing the quality of agronomic nutrient usage. This can be done by using grain legumes, which increase soil fertility by biological nitrogen fixation, as well as chemical fertilisers. Cover crops, which add organic matter to the soil, improve soil structure and encourage a healthy, fertile soil, may help to improve soil fertility even more. Soil fertility refers to a soil's ability to support plant growth by supplying necessary plant nutrients as well as favourable chemical, physical, and biological characteristics as a growing climate.

The macronutrients nitrogen, phosphorus, and potassium, as well as sulphur, calcium, and magnesium, are all present in

plants. Fertilizers are chemical or natural substances or materials that are added to plants to provide nutrients, typically through soil application, but also through foliage or water in rice systems, fertigation, hydroponics, or aquaculture operations. Chemical and mineral fertilisers, organic fertilisers such as animal manures and composts, and recycled nutrient sources are all examples of nutrient sources. Most of the Sustainable Development Goals, which involve economic, social, and environmental aspects, take into account the effects of soil fertility. A fertile soil's primary function is to provide food, which is crucial given the FAO's Zero Hunger target.

A fertile soil also provides vital nutrients for plant growth, allowing for the production of nutritious food that contains all of the necessary nutrients. Fertility has an effect on practises that have an economic impact, and is thus connected to economic development and poverty reduction.

Finally, proper soil fertility management will assist in the reduction of soil, water, and air pollution, the control of water supply availability, the support of a diverse and active biotic population, the increase of vegetation cover, and the development of a carbon-neutral footprint. Manure, fertilisers, and plants all absorb water and minerals from the soil, which is important for growth, flowering, crop yield, and other essential activities. Organic and inorganic plant nutrients are contained in the soil. Texture, organic matter, soil pH, electrical conductivity, total calcium carbonate, total nitrogen, C/N ratio, available phosphorus, available potassium, exchangeable calcium, exchangeable magnesium, and available micronutrients are all factors that affect soil fertility.

Soil fertility and plant nutrition refers to the regulation of vital elements for plant growth, generally with the aim of achieving particular management objectives. While soil fertility is significant in natural systems, the focus of this article is on plant production for human consumption (e.g., food, feed, fiber, energy, and landscape esthetics). Soil fertility loss in Africa's smallholder farms is increasingly being recognised as the fundamental biophysical limiting factor behind the continent's declining per-capita food production.

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