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## **ROLE OF SOIL AS A BASIC COMPONENT OF FOREST ECOSYSTEMS**

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**Annotation:** *Soil is an important component of forest and woodland ecosystems as it helps regulate important ecosystem processes, such as nutrient uptake, decomposition, and water availability. Soils provide trees with anchorage, water and nutrients. Soil used as a basic component of forest ecosystems. It is made up of a variety of minerals, organic matter, and living organisms. Soils are also crucial for global food security, water security, biofuel security, and human health, in general sustaining ecosystem. Forest ecosystem of soil is a key component of the Earth system to control geochemical, biological, erosional, and hydrological cycles, as well as providing utilities, products, and energy to humans.*

**Key words:** *Soil, Forest ecosystems, Basic components.*

Soil plays an important role in forest growth and management. It provides moisture and nutrients for tree growth, serves as a medium for root growth, and physically supports the equipment used in harvesting, yarding and other operations [1]. Soils of forest ecosystems perform a wide range of ecosystem services and ecological functions, among which the most important functions are the regulation of the composition of atmospheric air, the storage of carbon and nutrients, the immobilization of pollutants, the regulation of the water regime and resistance to recreational load [2]. It is also a vital component of the biosphere, living and complex natural organism that plays many key roles in terrestrial ecosystems, such as, maintaining hydrological stability, and biological diversity [4, 5]. It serves as a source of food, and a mechanism that maintains environmental quality at the local, regional, and global levels [1]. As a result, improvements in soil fertility and nutrient balances are considered main measures of forest ecosystem quality [5].

Forest ecosystems are crucial role in soil conservation, water conservation, and environmental improvement [2, 3]. Forest soils, in particular, are critical in deciding the forest ecosystem's long-term productivity [4]. Forest soil is used to maintain the stability of the ecosystem [2], and important in the global carbon cycle, and peatlands, wetlands with a high carbon storage capacity, of the biosphere's carbon pool [7]. The type of soil that forms depend on what type of vegetation grows. Soils that formed under deciduous forests are very fertile and productive agricultural lands because of the decomposing leaves at the soil surface [3]. The role of soil organisms in resource-intensive agroecosystems has received little attention, since natural and biologically mediated processes such as regulating soil structure and nutrient supply have been largely replaced by human impact [5]. The intrinsic characteristics of the soil, which

are mainly the result of maternal material and climate change, undergo minor changes due to different land use practices [6].

The relationship between forest soil and soil-forming factors has been studied extensively around the globe. Topography, atmosphere, and parent material are all closely linked to soil-forming/environmental forcing factors in forest soil. That means the dynamic of physical, chemical, and biological soil properties is influenced by soil management. As a result, forest lands with good physical and chemical characteristics are critical for preserving terrestrial ecosystem productivity and driving processes that preserve environmental quality [5, 6].

Plants influence mineral weathering and soil structure, while certain functional properties of plants influence the chemical and physical composition of litter, and thereby their decomposability. Trees affect the spatial redistribution of precipitation, the fluxes of carbon and nutrients within forest ecosystems and landscapes [6]. The density of the soil profile determines the formation of soil modes such as water-air, temperature, oxidation-reduction, and biochemical, and has a significant impact on the demonstration of the soil's key ecological functions, plant growth, production, and quality, as well as the behavior of microorganisms and soil fauna [7].

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## ИНСТИТУТ АГРОБИОТЕХНОЛОГИИ

### СЕКЦИЯ «ГЕНЕТИКА, СЕЛЕКЦИЯ И БИОТЕХНОЛОГИЯ»

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#### **ВЛИЯНИЕ ГРИБКОВЫХ БОЛЕЗНЕЙ НА СОДЕРЖАНИЕ БИОХИМИЧЕСКИХ КОМПОНЕНТОВ СЕМЯН СОИ**

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