

# **Mycorrhizae Based Biofertilizers Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028F Segmented By Type (Endomycorrhizae, Ectomycorrhizae), By Form (Liquid, Solid), By Mode of Application (Soil Treatment, Seed Treatment, and Fertilization Treatment), By Application (Agriculture, Non-Agriculture), By Region and Competition**

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## **Abstracts**

The global mycorrhizae based biofertilizers market was valued at USD 570.76 Million in 2022 and is anticipated to project robust growth in the forecast period with a CAGR of 7.07% through 2028. Mycorrhizae based biofertilizers are specialized organic formulations that contain beneficial mycorrhizal fungi in combination with other nutrients and growth-promoting microorganisms. A mycorrhiza is a type of symbiotic association between certain fungi and plant roots, where the fungi form a mutualistic relationship with the plants. These biofertilizers are designed to enhance plant growth, nutrient uptake, and overall health by facilitating a mutually beneficial interaction between the mycorrhizal fungi and the plant roots. Along with this, mycorrhizae based biofertilizers also protect plants from many soil-borne infections, reduce transplantation, and acidic shock. All these factors contribute to the growth of the mycorrhizae based biofertilizers market in the forecast period.

### **Key Market Drivers**

Rising Demand for Organic Food

In a world where concerns about the environment, sustainability, and health are taking center stage, the organic food movement has gained remarkable momentum. Consumers are increasingly seeking healthier and ecologically friendly options, and this shift in consumer behavior has led to a surge in demand for organic food products. As the organic food industry flourishes, so does the demand for innovative and sustainable agricultural practices. Among these pioneering approaches, mycorrhizae based biofertilizers have emerged as a powerful tool, revolutionizing the way to produce organic food while nurturing the planet. Mycorrhizal fungi play a crucial role in extracting nutrients, such as phosphorus and micronutrients, from the soil and delivering them to plant roots. This translates to improved nutrient content in crops, enhancing the nutritional value of organic food. Therefore, the demand of organic food led to the growth of mycorrhizae based biofertilizers market.

### Growing Demand for Sustainable Food and Flavors

Consumers are becoming more conscious of the food quality and its nutritional value. Plants & crops grown with mycorrhizae based biofertilizers often exhibit improved nutrient content and flavor profiles, aligning with the demand for healthier and tastier produce. Mycorrhizae assist plants in absorbing nutrients from the soil, ensuring that crops are nourished in a way that supports optimal growth without excessive chemical fertilization. Plants fortified by mycorrhizae are more resilient to stressors such as drought, diseases, and nutrient deficiencies, reducing the need for chemical interventions. Moreover, the increased nutrient uptake facilitated by mycorrhizae can lead to more flavorful and nutritionally dense crops, meeting the demands of discerning consumers. By reducing reliance on synthetic chemicals and promoting a healthy soil ecosystem, mycorrhizae contribute to sustainable farming practices that align with the values of eco-conscious consumers. Along with this, the positive impact of mycorrhizae extends beyond individual crops, promoting soil biodiversity and fostering healthier ecosystems. The large number of benefits of mycorrhizae based biofertilizers is anticipated to drive the demand in the forecast period.

### Increasing Research and Innovation is Driving the Market

The development of mycorrhizae based biofertilizers market is largely dependent on the innovation & research related to mycorrhizae based biofertilizers. Researchers are delving into the vast diversity of mycorrhizal fungi, identifying strains that form robust partnerships with various plant species. This understanding is crucial for optimizing plant-fungi interactions. Investigations are also underway to explore how mycorrhizae enhance plant resilience to environmental stressors such as drought, salinity, and

disease, crucial in the face of changing climate patterns. Along with this, researchers are unraveling the intricate pathways through which mycorrhizae contribute to nutrient cycling, soil enrichment, and improved nutrient availability for plants. Moreover, advances in genetic and molecular studies are shedding light on the genetic components of mycorrhizal associations, facilitating the development of more effective biofertilizer formulations. Researchers are also focused on extending the shelf life of mycorrhizae-based biofertilizers, ensuring that these products remain viable and effective from production to application.

Additionally, researchers are designing custom blends of mycorrhizal fungi to suit specific crops, soils, and environmental conditions, ensuring optimal results. Innovative methods for delivering mycorrhizal inoculants, such as seed coatings and root dips, are enhancing the ease of application for farmers. Along with this, biotechnological interventions, including genetic modification and microbial consortia, are being explored to amplify the benefits of mycorrhizae. All these factors dominate the growth of mycorrhizae based biofertilizers market in the forecast period.

## Key Market Challenges

### High Cost of Mycorrhizae Based Biofertilizers

Mycorrhizae based biofertilizers can be relatively costly due to several factors such as the identification and selection of effective mycorrhizal strains, along with the development of optimal production processes & require substantial research and investment, cultivating mycorrhizal fungi in large quantities while maintaining their viability is a delicate process that demands specialized facilities and expertise, and ensuring the viability and effectiveness of mycorrhizal fungi in the final product necessitates rigorous quality control measures.

### Limited Shelf Life of Mycorrhizae Based Biofertilizers

Mycorrhizal fungi are living organisms that require specific conditions to remain viable. Exposure to unfavorable conditions such as temperature extremes, moisture fluctuations, or UV radiation can diminish their viability over time. Additionally, the limited shelf life of mycorrhizae based biofertilizers also lead to reduced efficacy upon application, wasting both the product and the potential benefits for plants and soil.

## Key Market Trends

## Crop Diversification and Yield Enhancement

Mycorrhizae play a pivotal role in crop diversification by enhancing the growth and health of a diverse range of plant species. They establish symbiotic relationships with different plants, facilitating the exchange of nutrients and promoting inter-species communication. This not only supports the growth of various crops but also enhances soil health and nutrient cycling, creating a conducive environment for diversified agriculture. Furthermore, mycorrhizae offer a natural solution by boosting nutrient uptake efficiency and stress tolerance in plants. These fungi form an extensive network within the soil, expanding the effective root surface area of plants. This allows them to access nutrients, especially phosphorus and micronutrients, that would otherwise be less available. The result is healthier, more vigorous plants that are better equipped to withstand challenges such as drought and disease.

## Rising Need for Soil Structure Improvement

Modern agricultural practices have taken a toll on soil structure, a fundamental component of healthy and productive soils. Compaction, erosion, and degradation caused by intensive tillage, chemical inputs, and erosion have led to soil compaction and reduced water infiltration. This structural decline hampers root growth, limits water-holding capacity, and impedes nutrient cycling, ultimately impacting crop yield and environmental sustainability. To overcome this issue mycorrhizae, play an important role in enhancing soil structure by establishing a symbiotic relationship with plants, these fungi create a biological infrastructure that fosters healthy soil aggregation and porosity. The intricate hyphal networks of mycorrhizae bind soil particles together, forming stable aggregates that resist compaction. This improved structure promotes better water infiltration, root penetration, and air exchange within the soil profile.

## Segmental Insights

### Type Insights

Based on the type, the endomycorrhizae segment is expected to register the highest growth of 7.23% during the forecast period 2024-2028, on account of the potential to revolutionize modern agriculture. This growth can be attributed as endo-mycorrhizae helps plants absorb water more efficiently, reducing water stress, and increasing drought tolerance, leading to its increasing acceptability among the farmers. Additionally, endomycorrhizae forming intricate structures called arbuscules that enable efficient nutrient exchange between the fungus and the plant, promoting mutual growth

benefits which leads to the growth of mycorrhizae based biofertilizers market during the forecast period.

### Mode of Application Insights

Based on the mode of application, the soil treatment segment is expected to register the highest growth of 7.67% during the forecast period, 2024-2028. This can be ascribed due to their ease of application. Soil treatment methods are relatively simple and compatible with existing agricultural practices, making it accessible to a wide range of farmer. Moreover, biofertilizer containing mycorrhizal spores and mycelium is applied to the soil in various ways, such as mixing it with the soil during planting, screening it over the soil surface, or injecting it into the root zone using irrigation systems result in the growth of plants that boost the growth of mycorrhizae based biofertilizers market during the projected period.

### Regional Insights

Europe mycorrhizae based biofertilizers market will witness fastest growth of 7.57% during the forecast period, 2024-2028. This is because Europe has a strong agricultural sector which provides the necessary biofertilizers. Many countries like France, Germany, and United Kingdom are the leading producers of mycorrhizae based biofertilizers. Additionally, European governments and regulatory bodies have shown a willingness to support environmentally friendly agricultural practices. This can include incentives, subsidies, and regulations that encourage the use of biofertilizers and discourage the excessive use of chemical fertilizers, contributing to the expansion of the mycorrhizae based biofertilizers market.

### Key Market Players

UPL Limited

Novozymes A/S

Premier Tech Ltd

Plant HealthCare plc

Groundwork BioAg Ltd.

Vegalab SA

Atens-Agrotecnologias Naturales S.L.

Valent BioSciences LLC

Lallemand Inc.

Coromandel International Limited

Agri Life (India) Private Limited

#### Report Scope:

In this report, the global mycorrhizae based biofertilizers market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

#### Mycorrhizae Based Biofertilizers Market, By Type:

Endomycorrhizae

Ectomycorrhizae

#### Mycorrhizae Based Biofertilizers Market, By Form:

Liquid

Solid

#### Mycorrhizae Based Biofertilizers Market, By Mode of Application:

Soil Treatment

Seed Treatment

Fertilization Treatment

## Mycorrhizae Based Biofertilizers Market, By Application:

Agricultural

Non-agricultural

## Mycorrhizae Based Biofertilizers Market, By Region:

Europe

France

Germany

United Kingdom

Italy

Spain

North America

United States

Mexico

Canada

Asia-Pacific

China

India

Australia

Japan

South Korea

## South America

Brazil

Argentina

Colombia

## Middle East & Africa

South Africa

Saudi Arabia

UAE

## Competitive Landscape

**Company Profiles:** Detailed analysis of the major companies present in the global mycorrhizae based biofertilizers market.

## Available Customizations:

The global mycorrhizae based biofertilizers market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

## Company Information

Detailed analysis and profiling of additional market players (up to five).



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