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Biofungicide Market Forecasts to 2032 – Global Analysis By Type (Microbial, Botanical Biofungicides and Other Types), Crop Type (Cereals & Grains, Fruits & Vegetables, Turf & Ornamentals and Other Crop Types), Formulation, Application Mode, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Biofungicide Market is accounted for $2.93 billion in 2025 and is expected to reach $6.84 billion by 2032 growing at a CAGR of 12.89% during the forecast period. A biofungicide is a kind of pesticide that helps control plant diseases brought on by pathogenic fungi and is made from natural organisms like bacteria, fungi, or plant extracts. Biofungicides, as opposed to chemical fungicides, function by preventing the growth of dangerous fungi by means of parasitism, competition, antibiosis, or by inducing the plant's defense mechanisms. Because they are biodegradable, leave few chemical residues, and are generally safe for people, animals, and good bacteria, they are regarded as environmentally friendly. Because they lessen reliance on artificial chemicals and promote integrated pest management (IPM) techniques, biofungicides are crucial to sustainable agriculture.

According to the Food and Agriculture Organization (FAO), fungal diseases cause an average economic loss of around USD 220 billion globally, despite widespread use of fungicides. This underscores the massive impact of fungal pathogens and highlights the potential need for more effective and sustainable alternatives such as biofungicides.

Market Dynamics:

Driver:

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Growing interest in organic food

Global demand for organic food is one of the main factors propelling the biofungicide market. Customers' awareness of the detrimental health effects of chemical residues, particularly in fresh fruits and vegetables, is growing. Food companies and farmers are under pressure to adopt more natural crop protection methods as a result of this awareness. Biofungicides are ideal for organic farming certifications because they are environmentally friendly and leave no residue behind. Moreover, a key component of sustainable agricultural production, biofungicide adoption is predicted to increase in tandem with the growing demand for organic food in both developed and emerging economies.

Restraint:

High costs of formulation and production

The high cost of production in comparison to chemical fungicides is one of the main factors limiting the market for biofungicides. To ensure product stability and efficacy, the development of biofungicides necessitates sophisticated formulation technologies, microbial culturing, and specialized fermentation processes. Small and marginal farmers, particularly those in developing nations, cannot afford these costly processes, which frequently lead to higher end product prices. To preserve microbial viability, biofungicides need stringent quality control, in contrast to chemical fungicides that can be mass-produced at a lower cost. Additionally, farmer price sensitivity will continue to be a major obstacle to broad adoption unless large-scale production technologies lower costs.

Opportunity:

Adaptation to climate-smart agriculture

Crop diseases are becoming more frequent and severe due to climate change, which presents a chance for biofungicides as part of climate-smart farming methods. By improving soil health and boosting plant defenses, biofungicides increase natural resilience in contrast to chemical fungicides, which may break down in response to shifting environmental conditions. They are extremely relevant for farming systems of the future because of their compatibility with conservation farming, regenerative agriculture, and carbon reduction programs. Furthermore, climate-smart farming

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solutions are receiving significant investment from governments and international organizations, and biofungicides are becoming more widely acknowledged as essential inputs.

Threat:

Fierce rivalry between chemical fungicides

Chemical fungicides continue to be the most popular option among farmers because of their low cost, quick action, and track record of successfully managing a variety of crop diseases. Because they produce noticeable effects quickly, chemicals are preferred by many farmers over biofungicides, which act more slowly and preventively. Furthermore, biofungicides find it difficult to gain traction in the market due to the powerful distribution networks, substantial marketing expenditures, and established farmer trust of agrochemical giants. Moreover, biofungicides run the risk of being eclipsed by the ongoing reliance on synthetic products unless they become more affordable and provide reliable results, especially in high-intensity farming systems.

Covid-19 Impact:

The COVID-19 pandemic affected the biofungicide market in two ways: it sped up long-term opportunities while also upsetting supply chains. During the first lockdowns, limitations on trade, logistics, and manufacturing caused delays in product availability, higher prices, and less access for farmers, particularly in developing nations. Due to fewer distribution channels and fewer on-ground extension services, many small producers experienced financial hardship. But the crisis also raised awareness of environmental sustainability, food safety, and health issues worldwide, which increased demand for organic and residue-free food. Increased demand for bio-based agricultural inputs, such as biofungicides, resulted from this change, setting up the market for a more robust post-pandemic recovery.

The microbial segment is expected to be the largest during the forecast period

The microbial segment is expected to account for the largest market share during the forecast period, accounting for a dominant position as a result of its extensive adoption and demonstrated efficacy. Since they can control a wide range of fungal pathogens through a variety of mechanisms, including competition, induced resistance, and antibiosis, microbial biofungicides—which are derived from beneficial microorganisms like Bacillus subtilis, Trichoderma species, and Pseudomonas fluorescens—are widely

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used. They are more widely accepted by farmers because they are adaptable, long-term cost-effective, and compatible with Integrated Pest Management (IPM) techniques. Additionally, the robust growth of this market is being driven by developments in microbial formulations, enhanced shelf stability, and rising demand for organic farming.

The liquid suspension segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the liquid suspension segment is predicted to witness the highest growth rate because they are easier to apply, distribute evenly, and adhere to plant surfaces more readily than powders or granules, liquid suspensions are becoming more and more popular. They are very effective for precision and large-scale farming since they work well with contemporary spraying equipment and are simple to incorporate into drip irrigation systems. Furthermore, liquid formulations ensure greater efficacy in field conditions by preserving the viability of microbial strains. Because of their versatility, efficiency, and ease of use, liquid suspensions are predicted to grow quickly in both conventional and organic farming.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, driven by a high uptake of sustainable farming methods, stringent laws governing the use of synthetic pesticides, and a robust demand for organic food. With its well-established organic certification standards, cutting-edge microbial solution research, and substantial government support for ecologically friendly agriculture, the US takes the lead. North America's robust distribution networks guarantee greater product availability, and farmers there are more knowledgeable about Integrated Pest Management (IPM) techniques. North America's dominance in the global biofungicide industry is further supported by the existence of important market players, ongoing R&D expenditures, and consumer preference for produce free of residue.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by the population's growth, the quick expansion of agriculture, and the rising demand for food that is safe and free of residues. Organic farming is booming in nations like China, Japan, and India thanks to government programs, subsidies, and awareness-raising campaigns that support sustainable agriculture. Growing export prospects also encourage farmers to use environmentally friendly inputs in order to

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satisfy global residue-free requirements. Additionally, there is a sizable unexplored market for biofungicides due to the region's large base of small and medium farmers. Asia-Pacific is now the region with the fastest-growing biofungicide market in the world thanks to expanding distribution networks and technological developments.

Key players in the market

Some of the key players in Biofungicide Market include Corteva Agriscience, Andermatt Group AG, Isagro S.P.A, BASF SE, Novozymes, FMC Corporation, Biolchim SPA, Certis USA LLC, Koppert Biological Systems Inc., Marrone Bio Innovations, Inc., Bayer AG, Syngenta AG, Valent Biosciences, BioWorks, Inc. and Gowan Group.

Key Developments:

In August 2025, BASF, Corteva Agriscience and M.S. Technologies, L.L.C. announced that they have entered into a trait licensing agreement to bring BASF’s novel nematode resistant soybean (NRS) trait with Enlist E3® soybeans and Conkesta E3® soybeans to farmers in Brazil. The NRS trait offers the first ever biotech solution for effectively managing root lesion nematodes (Pratylenchus brachyurus) and soybean cyst nematodes – difficult-to-control microscopic pests that damage soybeans and threaten yields.

In August 2025, Bayer announced a deal worth up to $1.3 billion with Kumquat Biosciences to develop the U.S.-based oncology specialist's potential new cancer drug. Under the agreement, Kumquat will be responsible for initiating and completing a phase-Ia study into the drug, a KRAS G12D inhibitor, while Bayer will complete development and commercial activities.

In June 2025, FMC Corporation announced a strategic agreement with Corteva Agriscience that will expand FMC's fluindapyr fungicide technology in the U.S. corn and soybean markets. The collaboration between the two agricultural companies will enable more U.S. growers to combat challenging foliar diseases, such as tar spot and southern rust, with this novel fungicide active ingredient.

Types Covered:

- Microbial
- Botanical Biofungicides

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Other Types

Crop Types Covered:

Cereals & Grains

Fruits & Vegetables

Turf & Ornamentals

Other Crop Types

Formulations Covered:

Emulsifiable Concentrates

Granules

Liquid Suspension

Wettable Powder

Aqueous Solution

Application Modes Covered:

Post-Harvest Treatment

Foliar Spray

Seed Treatment

Soil Treatment

Other Applications

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End Users Covered:

- Commercial Farming
- Greenhouse
- Home Gardening

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe
- Asia Pacific
  - Japan

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India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032

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- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

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Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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