

Biofertilizers & Biopesticides Market Forecasts to 2032 – Global Analysis By Product Type (Biofertilizers, and Biopesticides), Form (Liquid, and Dry), Mode of Application (Seed Treatment, Soil Treatment, Foliar Spray, and Post-Harvest), Crop Type, and By Geography

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Abstracts

According to Statistics MRC, the Global Biofertilizers & Biopesticides Market is accounted for \$9.2 billion in 2025 and is expected to reach \$18.9 billion by 2032, growing at a CAGR of 10.9% during the forecast period. Biofertilizers and biopesticides leverage beneficial microbes, entomopathogens, and botanical extracts to improve nutrient cycling, suppress pathogens, and enhance soil health as alternatives to synthetic chemicals. They support regenerative agriculture and reduced residue in food while enabling ecosystem services. Market growth is enabled by sustainability policies, consumer demand, and formulation innovations that increase stability and shelf life.

According to the United States Department of Agriculture (USDA), the use of biofertilizers and biopesticides in U.S. crop production increased by 12% between 2017 and 2022.

Market Dynamics:

Driver:

Rising demand for organic food

Rising consumer demand for organic and residue-free food is a primary driver for the

biofertilizers and biopesticides market. Farmers and food brands increasingly adopt microbial inputs to meet regulatory standards and consumer expectations for sustainability, reduced chemical residues, and cleaner labels. This buyer preference raises field trials, procurement budgets, and collaborations between agri-input firms and biotech developers. Moreover, price premiums and export opportunities for organic produce improve farmer economics, making bio-based inputs commercially attractive and accelerating investment into formulation and distribution.

Restraint:

Shorter shelf life

Shorter shelf life and product stability for many microbial biofertilizers constrain market expansion by complicating storage, transport, and inventory management. Live microbes can lose viability under heat, desiccation, or prolonged storage, reducing field efficacy and farmer confidence. This raises logistics costs, increases cold-chain or preservative needs, and limits distribution reach especially in hot or remote regions. Moreover, variability in on-farm performance linked to degraded formulations slows adoption and invites greater regulatory scrutiny, making formulation science and improved packaging essential to scale commercial use.

Opportunity:

Discovery of more robust and effective microbial strains

Discovery and commercialization of more robust, multi-functional microbial strains offer a substantial growth opportunity for the sector. Advances in strain screening, microbial consortia design, and formulation science can deliver microbes with improved stress tolerance, survival, and broader crop compatibility. Novel strains that combine nutrient mobilisation with pathogen suppression enable bundled value propositions that reduce farmers' dependence on chemical inputs. Increased R&D funding, field demonstrations, and regulatory pathways can accelerate product rollouts, enabling differentiated offerings, stronger efficacy claims, and faster farmer adoption across cropping systems.

Threat:

Strong Competition from Chemical Giants

Strong competition from established chemical fertilizer and agrochemical companies

represents a material threat to specialist biofertilizer vendors. Incumbents hold deep distribution networks, large R&D budgets, and strong farmer relationships; they can bundle offerings, employ aggressive pricing, and rapidly launch bio-branded lines. Regulatory familiarity and trusted brands further tilt buyer preference toward incumbents. To defend market share, biotech firms must demonstrate clear agronomic benefits through local trials, robust data, and intensive farmer training while building distribution partnerships that neutralise the scale advantages of chemical players.

Covid-19 Impact:

The pandemic disrupted supply chains and field operations, creating short-term production and distribution setbacks for biofertilizer manufacturers. Travel restrictions and labour shortages delayed field trials and constrained raw-material sourcing, while farmers prioritised immediate yield inputs. However, increased attention to food security and resilience spurred renewed interest in biological solutions. Post-pandemic recovery saw investment in more resilient supply chains and digital extension services, supporting recovery of demand and longer-term adoption of bio-based agricultural inputs.

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

The liquid segment is expected to account for the largest market share during the forecast period because liquid products offer simpler application, compatibility with fertigation and foliar systems, and more uniform microbial distribution. Farmers favour liquids for rapid field uptake, integration into irrigation, and ease of tank mixing, which reduces labour and application complexity. Improvements in carrier technologies and preservatives have mitigated past stability issues, increasing confidence. Large commercial farms and precision systems prefer liquid dosing for accuracy, which supports higher adoption and solidifies the liquid segment's dominant market position.

The seed treatment segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the seed treatment segment is predicted to witness the highest growth rate because seed applications deliver early, efficient protection and growth promotion with minimal added labour. Applying microbes at sowing places them directly at the seed-root interface, improving establishment and nutrient uptake advantages valued by both row-crop and horticultural producers. Advances in carriers and pelleting technologies have improved microbial survival during storage and

planting. Moreover, seed treatment integrates well with integrated pest management and mechanised sowing, driving faster adoption and higher relative growth than other application methods.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share driven by advanced agricultural infrastructure, well-developed distribution channels, and strong institutional support for sustainable farming. Large commercial farms, high farm incomes, and active R&D ecosystems accelerate product testing and uptake. Policy incentives, organic acreage premiums, and presence of major biofertilizer manufacturers further improve availability and trust. Together these factors create a mature commercial environment where bio-based inputs achieve broad adoption and capture a leading share of the market.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR because expanding arable area, rising food demand, improving rural connectivity, and stronger government support drive rapid adoption. Local startups and global firms are launching low-cost, locally adapted formulations while extension services and private sector training boost farmer acceptance. High addressable populations and increasing mechanisation make the region fertile for rapid scale-up, positioning Asia Pacific as the fastest-growing regional market.

Key players in the market

Some of the key players in Biofertilizers & Biopesticides Market include Bayer AG, BASF SE, Syngenta AG, Corteva Agriscience, FMC Corporation, UPL Limited, Marrone Bio Innovations, Inc., Valent BioSciences LLC, Certis USA LLC, Novozymes A/S, Koppert Biological Systems B.V., Andermatt Biocontrol AG, BioWorks, Inc., Lallemand Inc., Bioceres Crop Solutions Corp., and Rizobacter Argentina S.A.

Key Developments:

In October 2025, Bayer CropScience launched the world's first bioinsecticide for arable crops, highlighting its commitment to sustainable farming and increased biological insecticide adoption. Bayer is focusing research and production in Germany on strategic technologies to maintain competitiveness amid significant industry challenges. It has

also filed for regulatory approvals for new herbicide molecules in major markets while continuing legal strategies related to glyphosate liabilities.

In June 2025, Syngenta AG announced it is significantly expanding its research & development capabilities in agricultural biologicals, including acquiring assets (natural compounds and genetic strains) from Novartis AG for agricultural biological use.

In April 2024, Bayer AG signed an agreement with AlphaBio Control securing exclusive rights to market a new biological insecticide for arable crops (oilseed rape and cereals), targeting pests such as the cabbage stem flea beetle.

Product Types Covered:

Biofertilizers

Biopesticides

Forms Covered:

Liquid

Dry

Mode of Applications Covered:

Seed Treatment

Soil Treatment

Foliar Spray

Post-Harvest

Crop Types Covered:

Cereals & Grains

Oilseeds & Pulses

Fruits & Vegetables

Turf & Ornamentals

Other Crops

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

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
- 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:

All the customers of this report will be entitled to receive one of the following free customization options:

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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